

phoric acid, as well as the greater portion of the soluble silica, and all the ammonia, (which is quite soluble), and all the nitrogen compounds which decompose into ammonia. In short, at the most moderate computation, one-third of the manure is washed away and utterly lost (*Hear, hear*). The farmer in many cases, loses as much as half his rent by allowing the rain to wash away, that which is the most useful part of the manure. These soluble portions of manure are most easily taken away, and therefore they ought to be taken most care of; yet, according to the general practice, they are allowed to run away, as if they were of no value. I wish to say, not only to the farmer, but to the landlord also, that the constructions of farm-buildings is a matter of the greatest importance to both. For those very substances which you allow, to be washed away, you have to supply either by the purchase of guano, oilcake, London dung, or some other substance. Mr. Warnes, of Trimmingham in Norfolk, has adopted an excellent plan for preserving his manures; he has sheds, constructed in the yards, open on one side only, in which the cattle stand with their heads turned towards the rack or manger, and their tails towards the open yard; each beast stands in a sort of box (without being tethered), sunk about one foot deep into the ground; the bottom is covered with straw; and as the boxes get full, the manure is carried away and nothing is lost; all the liquid portions of the manure, gets absorbed in the more solid parts, and the cattle are kept admirably clean. I went into these sheds myself, examined the cattle, and found that their hoofs were perfectly clean; in fact I do not think there is a better practical plan adopted than that of this gentleman. He sometime since published many letters on "Box feeding," and he has just published a work, "On the cultivation of Flax," which I can highly recommend. (A gentleman here asked Mr. Nesbit, whether he did not think flax growing injurious to the land). Mr. Nesbit replied: I do not think it is; and I know that is Professor Kane's opinion also. By Mr. Warnes' method, all you want is a box for each beast, two feet deep, with a composed bottom, and you then lose nothing. Nothing goes away, because there is nothing to wash it away. The straw absorbs all the liquid, for straw, bear in mind, will absorb its own weight of fluid. Having now come to the end of my remarks, I beg to say that I shall be happy to hear gentlemen present, put as many questions as they please; and it will afford me great pleasure to answer them (*cheers*). I always think myself, that the little discussions which follow the lecture are the best part of the business; because matters are suggested by different minds which might never occur to the lecturer on a subject embracing so wide a field (*Hear, hear*). Before I sit down, however, I will say a word or two upon Guano. The value of Guano depends principally upon the presence of bonedust and ammonia; as to potash, it never contains more than from $2\frac{1}{2}$ to 4 per cent. of that; this guano is the excrement of sea fowls, which feed upon fish. You know of how much importance sprats and other fish are in the manuring of land, simply because they supply bone dust and ammonia; and in this respect Guano is a very important manure. But I want the farmer to save manure for himself. It is of no use to go and spend two hundred a year, on guano, and then let the best part of your manure run out of the yard. I do not think there are a hundred farms that would not be benefited by the application of new manure. This sample of the best Peruvian Guano which is now before me contains 20 per cent of ammonia, and 20 per cent of bone dust; this other sample of Ichaboe guano, about 12 per cent. of ammonia, and

more bone-dust. In purchasing guano you are very likely to be taken in, unless you are very cautious. I have known some of the dealers to adulterate it to the extent of 34 per cent. When you want to buy do not go to the dealers at all. Unless satisfied of their probity, but go directly to a respectable importer, and then you will not be cheated. There is another thing that I will advise, and that is never to apply guano by itself. I told you that guano contains only from $2\frac{1}{2}$ to 4 per cent. of potash; now the ashes of peas contain 35 per cent., beans 21 per cent and wheat 24 per cent. of this substance. Consequently if you use guano constantly and by itself, you would impoverish the land; therefore, always put with it either salt-petre, or nitrate of soda, wood ashes, or other bodies of the same composition. Make it a rule always to mix your manures. The mere fact of mixing them is one of the greatest points next to being chemist enough to know the exact and proper quantities. Put farm-yard dung with it one year, lime another, and nitrate of soda another; changing each year, so as gradually to work the whole of the farm into the same state. It is very desirable to equalise the state of your farm all round; there are very few who have their farms of equal quality throughout. But the best way to attain this is to make frequent changes of your manures. Another very good manure is common salt; it is exceedingly valuable in many cases, especially where the land is sheltered from the sea. I know a gentleman residing near Guildford who has applied as much as 4 cwt. per acre of salt to his land, and says it is the cheapest manure he ever uses; it makes the straw beautiful yellow; now nature disseminates salt to a great extent; and you ought to help nature in circumstances when there may be any thing to impede this operation. I have known all the windows and trees in a town to be covered over with a thick incrustation of salt after a storm, when the wind was blowing in from the sea; and in some cases salt will travel in the atmosphere as much as one hundred and fifty miles from the ocean before it is deposited. In conclusion, gentlemen, I beg to say that I feel I have placed this important subject very imperfectly before you (*No no*). If however, I shall have scattered a new thought here and there, and conveyed any information which may be turned to account, I shall feel the greatest satisfaction in having met you here this evening (*cheers*).

J. A. GORDON, Esq.: I think, gentlemen, you will all agree with me when I say that we have heard Mr. Nesbit's admirable lecture with great pleasure, and that we have also derived from it a considerable amount of instruction, (*cheers*). I therefore beg to propose that the thanks of this meeting be accorded to that gentleman, (*renewed cheers*).

WILLIAM JENNE, Esq.: I have very great pleasure in seconding that motion.

The thanks of the Association were immediately carried by acclamation.

MR. NESBIT: Gentlemen, I beg to return you my best thanks for the warm and handsome manner in which you have expressed your approbation of my imperfect efforts. I can only say that I am quite at your command, and I trust I shall have a perfect shower of questions (*cheers*).

MR. POPE: When I have applied Guano, I have generally also applied nitrate of soda or potash about three weeks afterwards.

MR. NESBIT: that is a very good plan. With regard to arresting the loss of ammonia from your mixtures, I will suggest, that if you *will not* follow the plan which I have described to you, adopted by Mr. Warnes, of Trimmingham, that you should make them in this