Challoner referred to the different mechanical condition acquired by the particles of soil in the process of sifting.—Professor Way thought nobody could doubt the value of consolidation after pulverization. In these, as in all other cases, no truths could militate against each other, while errors might. The lighter soils were those to which consolidation was most applicable; heavy soils required pulverization before consolidation. Mr. Smith, he believed, preferred a solid bottom to his land. Perfect manuring was obtained from the air: in fact, that clay itself manured itsef.

The vote of thanks to Professor Way for his kindness in delivering the interesting and important lecture which they had then heard, was then put by Colonel Challoner from the Chair, and carried unanimously; Professor Way, in acknowledging the compliment expressing the satisfaction it gave him on that and on all other occasions to aid in the great work of promoting the objects of the Society.

A WEEKLY COUNCIL was held at the Society's House in Hanover-square, on Wednesday, the 9th of June, Mr. Raymond Barker, Vice-President, in the Chair. Professor Way, the Consulting Chemist to the Society, delivered his concluding Lecture on the agricultural principles of Jethro Tull, illustrated by modern facts.

Prof. Way's object in this second and concluding lecture was to examine how far the views and principles of Tull were consistent with the modern discoveries of agricultural chemistry. Plants consisted of certain organic and mineral elements, the nature of which was now well understood. The question was, could these substances be supplied by the air and by the soil without manure, as Tull supposed? It was pretty generally conceded at the present day that carbonic acid, ammonia, and water, together, were capable of furnishing all that was necessary to build up the organic structure of plants; whilst no soil of ordinary fertility would be found, upon examination, to be absolutely deficient in any of the mineral ingredients that were required by vegetation. The air contained both ammonia and carbonic acid, but it might be open to question whether in sufficient quantity not merely for a *natural* but for a *forced* production of wheat and other crops, such as alone would suffice for the wants of a populous community like that of this country. The quantity of carbonic acid in the air had been found by repeated experiments of M. Saſeure to amount, on the average, to a thousandth part of its weight, and Liebig had calculated that at any one time there was in the air as much carbon in this invisible form as would suffice for the production of the whole coal fields existing throughout the world. It required no stretch of the imagination, therefore, to suppose that with the air constantly in motion, and constantly renewed to the roots of plants, they might receive from this source all the carbon which was required for their growth. Whilst, too, every desintegration of the soil gave access to this carbonic acid in larger quantity for the direct supply of food, directly contributed to the sustenance of plants by rendering available the necessary mineral elements of their food, which water impregnated with carbonic acid was capaple of dissolving. With regard to the quantity of ammonia in the air, we did not possess such satisfactory information. Of its existence there, no one entertained a doubt; it was produced by the decay of animal and vegetable bodies, given off in the exhalations of living animal bodies, and probably in the sweet perfumes of flowers, and thrown out in certain parts of the world in immense quantities by volcanoes. But to ascertain the proportion of ammonia in the air was extremely difficult, and although it had been attempted by more than one able experimenter, the results must only be looked upon as distant approximations to the truth. Fresenius, to whom the most careful experiments on record in regard to this matter are due, found that 1,000,000 parts by weight of air contained 0.133 parts of ammonia. Without stopping to examine the probability of these figures representing the average amount of ammonia in the air, we might ask whether such a quantity would suffice for the wants of an abundant vegetation. This question it was impossible to answer. Mr. Way's own recent investigations had brought to light the existence in the soil of certain double silicates possessing the power of abstracting the carbonate of ammonia from the air with as much avidity as if they were strong acids. A good soil, well opened by cultivation, would therefore be constantly at work, day and night, collecting ammonia from the air; and the quantity that could be so obtained would only be limited by the frequency of the renewal of better air. Of course we could not say how often this would take place; but what with alternations of temperature, differences in the heat of the soil and the air, the influences of wind, and perhaps also a constant interchange in the particles of air themselves, it was evident that the renewal of the air in the soil, and the consequent acquisition by it of ammonia, might go on to a very great extent. And it was worthy of remark, too, that this collection of ammonia by the soil was quite independent of rain and dews, and was always proceeding. The more, therefore, the soil was exposed to the air the richer it would become. Of course Mr. Way spoke of soils containing a sufficient quantity of clay. Some light soils there might be that would be injured, not benefitted, by such exposure. Mr. Way went on to speak of the experiments of the Rev. Mr. Smith, at Lois Weedon, expressing the great gratification which he had experienced from a visit to that place. These crops of wheat, which were now growing on land which had been for six years under wheat without manure of any kind, looked as if they had received a dressing of ammoniacal salts: and that, indeed, was the fact, though the ammonia had been added not