

cost him 30s. per acre. The labourers can earn from 2s. to 2s. 6d. a day. He had found one-horse scarifiers the best for intervals. He had seen wheat crops on land well manured with artificial salts, guano, and other substances, look poor and blighted; while those on adjoining portions of the same land—treated on Mr. Smith's plan, retaining in the soil an available stock of nutriment without being required to be manured for the current year—were looking remarkably well, and yielded  $7\frac{1}{2}$  quarters of wheat. By applying to the crop itself a large amount of ammoniacal matter, a great portion of it was lost for the immediate purposes of vegetation. In reply to an inquiry, stated that he had known ashes or burnt turf applied for carrots seven years ago.—Mr. Hammond thought the nature of the soil ought to be taken into consideration. He had paid 24s. an acre for trenching at 18 in. intervals. He considered that Mr. Smith's charge of £2 a load for straw on the credit side of his account was too much.—Mr. Gadesden remarked, that he was much struck with that part of the lecture where it was stated that so small a proportion of the inorganic elements of a soil are exhausted by cropping. The question of exhaustion was one that had been often raised against Mr. Smith's system. It appeared, however, that such exhaustion would be practically almost impossible, provided the soil was from time to time kept in a state of sufficient comminution. Professor Way had placed the subject in a new and clearer light. He had even said that it would be cheaper to supply manure than to go on growing crops without it. If, however, Mr. Smith's crops in this, their seventh year, were better than Mr. Gadesden's show-crop last year, and the profit of such system of cultivation should continue unabated, he himself could see no reason for its being abandoned; as no person would cease to cultivate profitably. The expense of cultivation, too, was rendered light by the implements which Mr. Smith employed, the principal of which was a single-horse scarifier that worked two lands at a time. Mr. Gadesden's operations being carried on in heavy land in Surrey cost him more money than Mr. Smith's at Lois-Weedon on a lighter soil. He had now 17 or 18 acres in cultivation under the new system; but the season had been particularly trying, and the autumn having been dry, the grain had lain long in the soil; he found the system a difficult one to carry out in such seasons. Mr. Smith's object, he believed, was to get the wheat to tiller before winter, not to be retarded till the spring. In wet weather the scarifier could not be worked.—Prof. Way replied, that he did not mean to say that the time would come when the system would be abandoned; but that it would be continued as long as it was found to go on profitably. He saw, however, no reason why manuring should not continue to be applied to green crops, and should only be omitted for wheat. There would be no harm in carrying on the system under the same

circumstances for ten years. A time of improved mechanical appliances might supersede the use of manures; while, on the other hand, a cheaper source of ammonia might be discovered.—Capt. Buller remarked that as Mr. Smith's land was on the oolite, it might yield a larger amount of mineral matter to vegetation, while the climate was favourable, and the amount of rain small. He understood that Mr. Smith attached great importance to the effects of exposure to frost, and accordingly, that he turned up his land rough for the purpose of receiving the full benefit of that influence.—Mr. Whitmore hoped that the lecture they had just heard would be published in the Society's Journal, in order that it might, on account of its importance, receive the full attention of the members.—In reply to an inquiry by Mr. Baskerville Glegg, Mr. Thomas Smith remarked that if anything ruined fox-hunting it would be the winter-beans, which, October planted in lines five feet apart, yielded  $7\frac{1}{2}$  quarters to the acre.—Mr. Rowlandson thought that in addition to the fertilizing effects of the system, a great deal depended on the time of sowing. It had just been said that wheat ought to tiller in winter. In eastern countries, when wheat tillered before Christmas, the hogs were turned into it. He considered that early sowing would be productive of great results: winter-sown oats in Surrey would return double. While acknowledging the full merits of Mr. Smith's operations, he was still of opinion that time of sowing was as important a point as the preparation of the land. Mr. Rowlandson regarded agriculture as the fasciculus of all the sciences, none of which can be neglected without in a certain degree injuriously affecting its operations; and however correct any science might be in itself, its application would lead to many errors, unless all the circumstances and bearings of each particular case were duly taken into consideration.—Mr. Paine had just seen a crop, sown on the 9th of November, looking at the time as well as could be desired.—Mr. Rodwell thought that no stated rule could be laid down for the time of sowing, either in reference to the soils or climate of different parts of the kingdom. He knew soils in the same county and parish on which it would be unwise to sow in every case either uniformly early or late. He had gained the experience of a great many years on that point, but found that it was difficult to lay down any fixed rule on the subject. He might, however, venture to say that good lands were better adapted for being sown in October and sandy soils in December.—Mr. Gadesden observed that Mr. Smith had sown wheat on the 11th of September, that he was obliged the month after to plough up, in consequence of the grain having matted on the soil. Mr. Rodwell referred to the gradual modification of his practice of manure by the experience of successive years. When he first sowed corn, he applied to his land 20 loads, or 15 tons farm-yard manure to the acre, agreeably with the practice also followed at the time in the adjoining county