regarded as the maximum produce, even with an unlimited supply of manure; and in most cases, the produce is rather under than over that amount. Still, however, in gardens of cottagers, and other places where the soil is rich without the immediate application of manures, the produce has far exceeded this estimation, indeed in some cases almost doubled it. The powers of manure being therefore limited in producing this effect, it is a most important enquiry on the part of the cultivator to ascertain how it is produced, and whether that which has taken place in particular cases could not be more generally obtained.

It is admitted on all hands that the perfection of field culture is to assimilate it to that of the garden. The distinguishing characteristics of garden culture are the deep, intimate, and continued pulverization of the soil, of which the most perfect freedom from weeds is a natural consequence. Even between the growing crops the soil is seldom so long allowed to remain uncleaned as to allow a single weed to appear; and this continued stirring of the soil is also found to contribute powerfully to the growth of the growing crops. The importance of extending this intimate degree of pulverization to the fields has been more and more felt as improvements in agriculture have advanced. Its importance was first acknowledged and acted on by the celebrated Jethro Tull, who maintained that pulverization only was necessary to maintain the soil in the most productive state, and that the application of manures was only beneficial from their serving to maintain a greater degree of porosity in the soil. It is well known that, by perseverance in this system, Tull raised excellent crops for many years; but, in overlooking the important consideration that the growth of any crop deprives the soil of a certain portion of its ingredients, he, of course, fell into error, and by not applying the substances so abstracted again to the soil, it would soon be rendered unfit for cropping altogether. No doubt much of the value of manures, especially that of the farm yard, arises from their mechanical action upon the soil, in preserving it in a state favourable for vegetable development, by the admission of air to the roots of the plants; still the important consideration of restoring the matters to the soil exhausted by cropping, must not be overlooked, as the neglect of this circumstance overthrew Tull's otherwise admirable theory.

Before the soil can be brought into the state here described, unless in the most favoured situations, many obstacles are to be encountered. The most formidable of these is excess of moisture, which, when present, interferes with the proper performance of every operation, rendering it more difficult of execution, and always done out of season. When to these inconveniences is added the inferior produce which is, under any circumstances, obtained from wet lands, the importance of removing excess of moisture by drainage will be acknowledged. This is the great obstacle to tillage over a large proportion of some of the most, in other respects, fertile soils; and on its being thoroughly removed, pulverization afterwards becomes easy; but the details of these operations must be reserved for subsequent papers.

Before concluding these desultory hints on agricultural improvement, another important consideration may be mentioned; namely, the necessity of not only alternating the plants grown, with a view to preserve the fertility of the soil, but also of growing those which will afford the most profitable return, so often as they can be introduced without unduly deteriorating the fertility of the soil or the value of the crops themselves, as few of our cultivated plants will bear to be frequently repeated. The judicious cultivator will of course guard against the error of attempting to cultivate two crops of the same kind in immediate succession. The greater the variation in the nature of the crops grown, indeed, the more valuable will each crop individually be. Thus, clovers, when grown too frequently on the same soil, fall off more and more every repetition; and the same remark is applicable, though perhaps in a lesser degree, to our other cultivated crops. The introduction of plants into more general cultivation, which are now only partially grown in particular districts, is also often attended with the best results. The flax and hemp plants, for example, have been grown from the earliest period in particular districts of the United Kingdom, often with the most abundant success, still, strange to say, there are other districts in which they are *entirely unknown*. The flax, in particular, has lately attracted much attention, and is likely to gain ground even among the English farmers. *Though long cultivated in Ireland, it has* been clearly demonstrated by the Belfast Flax Improvement Society, that the system of management so long followed there was extremely defective, notwithstanding the existence of a public Board in that country more than a century, with an annual grant of upwards of £20,000 from the public purse, and having for its object the encouragement of the linen manufactures. The revival of the cultivation of the flax crop in Ireland has also attracted some attention in this country, and having had more than ordinary opportunities of forming an opinion as to the value of that crop, we have no hesitation in recommending it to the farmers of Great Britain, feeling assured that its occasional cultivation *will afford much larger returns than any* other crop.

J. S.

March 17th, 1844.

Superior Dutch Cheese.—Take sour loppered milk, skim off the cream, then set it over the fire in an *iron pot* —brass is poisonous. Let it remain until the curd rises, which will be when the whey is scalding hot at the bottom of the pot; there is a difference in the heat of the whey at top and bottom. Skim the curd into a basket which is best; let it remain six or eight hours to drain, then break the curd, (on a table,) as fine as possible; after which put the curd lightly in a stone jar, salting it to taste. Let it remain in the jar, stirring it twice a day with a wooden or round stick, keep it loose and light until it becomes palatable to the taste of the maker. The cheese acquires a disagreeable flavour if kept too long in the jar. Make the cheeses into small balls, and set them in a cellar. It should not be eaten the first few days, and is best flavoured from one week to two weeks old.

Prolific Ewe of the Leicester Breed.—Mr. Thomas Bell, farmer, of Randle Holme Hall, has at this time a ewe, seven years of age, that has had 19 lambs, which are all living and doing well. She brought them forth as follows: —At one year old she had 2 lambs; at two, she had 2; at three, 3; at four, 3; at five, 4; at six, 2; at seven, 3.

Guano and Turnips.—On reading in your last paper the statement made by John Henry Vivian, Esq., M. P., president of the Swansea Farmer's Club, respecting the failure of his turnip crop that had been manured with guano, it reminded me of a similar occurrence, which happened to a friend of mine in this neighborhood, and of which I was an eye witness. Hearing so much about the wonderful effects of guano as a manure, induced him to make a trial of it for part of his turnip crop; and not knowing any thing of its natnre, or of the mode of using it, he thought the best plan he could adopt was to sow the guano and turnip-seed together, as when bones are used. He accordingly did so; and after waiting for some time, *he wondered* why no turnips made their appearance, as they did in other parts of the field. On examing the drills, he was surprised to find that *some of the seeds* had chipped, and made an effort to grow, but had afterwards shriveled up. Others again, looked as if they had been kiln-dried, and lost their vegetative power. As a matter of course, the guano was blamed as the cause of the failure, and most heartily was it and every other new kind of manure abused. Nothing in his opinion would ever surpass good old farm-yard manure, and any body might have his share of guano, for what he cared about it. Happening to ride past at the time my friend had made this unfortunate discovery, I recommended him to have the part of the the field harrowed afresh and sown again, by way of experiment—for I ought to observe, he had applied the guano at the rate of rather more than 3 cwt. per. acre. *He adopted* my suggestion, and singular enough, in the course of some days, the turnips which had been sown broadcast, made their appearance from one end of the field to the other,