and during summer I clean them with the blades of the sharp cutting horse-hoe, and keep them open with the tines of the scuffler. Every year, in short, I trench and cultivate 2½ out of the 5 for the succeeding crop, and leave the other 2½ for that which is growing

"One moiety of each acre is thus in wheat and the other moiety fallow; and the average yield of that half acre, is 34 bushels, grown without difficulty or danger in the execution, and surpassing the average yield of a whole acre on the common plan. I differ from Tull in this, I do not refuse manure. The essence of the scheme I propose is, not that it dispenses with manure, but that with manure where required, it enables the farmer to draw from half an acre of land, a produce beyond his now average produce from a whole acre."

This pamphlet well deserves a place in every farmers library, but in case it should appear to some, not yet to have answered the question, even with the aid of the rotation system; let us lay beside them both a short statement of what the school of agricultural chemistry announce with confidence as the remedy required For this purpose the following quotation is from a volume of 138 pages, bound up with "a treatise on the nature and value of manure and on agricultural chemistry, &c, by F. Falkner." The volume itself is styled "Productive farming, or a familiar digest on the recent discoveries of Liebig, Johnson, Davy and others, showing how the results of tillage might be greatly augmented, by Joseph A. Smith." Without adverting to the author's more recondite arguments, which no doubt he has carried out logically, he thus concludes, "Let us suppose that a close examination has taken place of the materials of which a soil is composed, and that an artificial, saline or mineral compost is judiciously and accurately put together, either to meet the deficiency, or added to a tolerably good soil, to increase its fertility, the advantages of its use are not overstated in a recent pamphlet."

"1st. It is cheap compared with its value, a twenty-shilling cask will supply an acre. 2nd. It is light and easily carried, when compared with carting manures. 3rd. It is suitable for small holders, who cannot afford soiling or keeping of cattle, for making dung-heaps. 4th. It enables a tenant-at-will to take a good crop out of done-out land, if his landlord refuses to renew. 5th. It furnishes to barren land such food for plants as had been deficient; such defects of one or more substances being, in general, the cause of sterlity. 6th. It enables the cultivator to extract ten times as much vegetable aliment for his plants from the soil, and from other manure, as they could otherwise in most cases yield." He adds, he "believes there are no soils which may not be permanently fertilized by the mineral compost which forms his invention. But bearing in mind the remarks we have already made, every practical farmer must advance upon his own responsibility in making a trial of its capabilities. The object of this work being, not the introduction of *advertised* artificial manures to the notice of the agricultural world, but the dissemination of those sound and rational views of the necessary *relations*, between *Practical Farming* and *Practical Science*, without which agriculture must still lag behind the age; and, though the first and most important of all arts, remain forever stationary."

Now, unfortunately for Joseph A. Smith, as a prophet, the art of agriculture has not remained stationary, since he, ten years ago, announced to the world the efficacy of a twenty-shilling cask of his favorite compost, although what he calls "sound and rational views of the necessary relations between practical farming and practical science," remain yet an almost untried theory.

It being a system requiring a considerable knowledge of chemistry in practice, the chemists and its advocates are the fittest proof of its real utility,—not in flower-pots and green-houses, but on the broad acres of an exhausted farm, not for one year only, but for a sufficient length of time to prove the durability of its fertilizing effects.—If, to the honor of its discoverers and advocates, and the benefit of agriculturists, as well as of mankind in general, this new system of fertilization should bear the test, no people in the world would sooner do it ample justice than the enlightened and enterprising people of this great Union. This ephemeral, as it may be called, of *permanently* fertilizing our land at twenty shillings an acre has now so long been hovering around the agricultural community, that although it comes in such a questionable shape, it is full time to grapple with it. We are surely not afraid of it; while it remains a phantom at a distance we need not be; but let us begin to deal with it in close quarters, and it may very easily, in many cases, turn out to be a robber. It would be absurd to suppose that the farmer is to turn chemist, to have a laboratory, and the necessary apparatus, to analyze, first the several kinds of grain or other produce, which he may intend to sow or plant; so that he may accurately know the constituent parts of each,—analyze the several soils of his fields, and that he should in characteristic hieroglyphics send to the druggists his order for the several ingredients necessary, so as to make sure he has got the very exact composition required. The attempt would be a complete burlesque on both science and farming. How then, is this practical farming and practical science to be brought into operation with one another? Perhaps there might be a county or township chemist or analyzer, sworn into office, to perform these services for a fixed and moderate remuneration, and the demand for the ingredients would soon create the supply. But although there are many ways in which it is possible to carry out the plan, no feasible one has yet been suggested to enable the farmer thus by process of analyzation to ascertain what he requires, nor is it likely these artificial fertilizers will ever come into general use, without the powerful aid of the government and legislature. Even suppose a chemist to settle in every county, on his own respsnsiblility, to make a business of analyizing for farmers, and selling to them the compound supposed to be required; the system would be liable to great abuse, and farmers would be subject to the imposition of quackery, so gross