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Weeds and Artificial Manures.

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EDS. COUNTRY GENTLEMAN—Many years ago I received an angry letter from a gentleman to whom I had sent some artificial manures. He said that it had filled his land with weeds. If, instead of manure I had supplied him with seed wheat, he might have complained with equal truth that I had filled the field where he had sown the seed with rooks and pigeons. It was absolutely impossible that the manure could have contained any seed, but there were the weeds, which, previously small and insignificant, had now become giants, and were successfully contending with the crops for a share of the luxuriant repast which had been provided for them. I have written several articles on weeds lately, in some of the English papers, and I now propose to make a few remarks on the same subject on the other side of the Atlantic. I wish to show that a cleaner state of farming must be followed where the use of artificial manures prevails. In ordinary farming the weeds and the crop draw their nourishment from one common stock. Of the great mass of fertility which exists in the soil in an insoluble form, a certain amount

becomes active each year, part is taken by the crop and assumes a high value; part is taken by the weeds and is of no value, they are therefore ploughed under, and become part of the insoluble stock of fertility again. Very likely it does not pay to clear the land, labor may be scarce and dear, and it is better that the weeds and the crop shall grow together.

Let us now assume that in order to grow bigger crops artificial manures are applied. The ingredients in artificial manures are, or should be, active, and being active, they are dear. The soils to which we apply these active manures contain a vast quantity of the same ingredients, but in an inactive form. For example, I have just grown the thirty-second crop of barley, manured each year with superphosphate of lime and nitrate of soda; the yield was 53 bushels per acre. The superphosphate alone, in the same field, gave 22 bushels per acre, so the nitrate added to the crop 31 bushels. The manure contained about 40 pounds of active nitrogen, the soil contains several thousand pounds of inactive nitrogen, of this a sufficient amount became active to grow the 22 bushels with the aid of superphosphate.

A bushel of barley contains about one pound of nitrogen, and is worth \$1. The pound of nitrogen in the nitrate costs about 12 cents. It is evidently to my interest to turn as much nitrate into barley as possible. Let us suppose that instead of producing 31 bushels by means of the nitrate I had only produced 21 bushels, and the weeds had taken the rest of the nitrate. In both cases, active nitrogen is converted into inactive nitrogen, in the grain it has a market value, in the weeds it has none. The nitrate which grew the weeds is not lost, it will in time become nitrate again, but it has evidently been wastefully employed, and the land might have been manured at a cheaper rate by swamp muck. It will be seen, therefore, that weeds grown by the fertility existing in the soil are far less injurious to the pocket of the cultivator than those grown by purchased fertility. If I have made this clear, the United States farmers are far too acute not to apply it to their own cases, and thus will either abandon the use of artificial manures, or see the necessity of using them in connection with a more cleanly mode of cultivation.