Draining—Is there any Profit from it?

We cannot properly answer this query by a mere affirmative or negative. Either answer depends on circumstances needing explanation. Some land is naturally sufficiently porous; such are light soils, sandy or gravelly, or of light loam. They do not need draining; their drainage would be money and labor thrown away.

But there is profit to be derived from the drainage of lands that need it, and from the cultivation of such lands without drainage profit is not to be expected. Tenacious soils, such as retain stagnant water at periods during the vegetation of crops, need draining. Stagnant water in the soil or on its suface is detrimental to genuine plants and should be drawn off by affording free means of its passage through and from the soil by drainage. It is necessary that the soil be moist; moisture, as well as air and a certain degree of heat is necessary for the germination and growth of plants; but the required moisture can be had without the retention in or on the soil of stagnant water. Let us bear in mind that the fertility of the soil depends on the suitable warmth of the soil; the soluble ingredients of manure; and the chemical action in the soil of air, and of water holding it in solution. The term manure here used includes all the elements in the soil which are necessary to vegetation. We see from this view of the subject how land through which the rainfall does not penetrate is injured by it. The rain water bears with it in its descent fertilizing matter from the atmosphere, and in its gradual descent through the soil these fertilizing matters are left in it for food for the plants. If this gradual descent be impeded by the hardness or tenacity of the soil, and merely flows over it, this supply of nutriment is wasted instead of fulfilling the purpose for which it was designed. And this rainfall may penetrate the surface of the ground, and yet, instead of being beneficial to vegetation, may actually prove injurious. If water, instead of passing through the soil by natural or artificial outlets, remain in it till it is drawn off by evaporation, the heat needed for vegetation is sensibly diminished by that evaporation, and thus vegetation is retarded and injured. And in some cases stagnant water is productive of still greater detriment. The seed rots and perishes in the soil. The transition from the germination of seed to its being killed is not difficult, nor does it require a long time.

Rain water, as we have seen, was designed to be beneficial, conveying to the germinating and growing plants fertilizing matter. Shall we, by not bringing our soil into proper condition for their reception, permit the ammonia, fresh air, warmth and other elements of fertility to escape without doing us any service? Shall we, by not breaking through the hard soil and affording easy passing through it, cause it to lie within it stagnant to the great detriment of our crops? Or shall we, by incurring an expense that we may reasonably expect to be repaid, so prepare the soil by draining where necessary as to render it easier of tillage, and productive of much heavier produce? This is the question to be solved. Every one who has had any experience in the culture of wet heavy soil, such as we have said need draining, has learned to his cost the additional labor and expense required to make them produce crops at all equal to those grown from land that needs not drainage. And he must know the much greater uncertainty of raising a paying crop at all. The quality of the soil may retard his labors. He may not be able to plough when ploughing, if it could be accomplished, would be most advantageous to the soil. From the same causes he may be delayed days, or even weeks, in sowing and planting; and such a delay in our climate may result in a partial or total failure of the crop. Besides, as we have already seen, the fertility of the soil and its capability are seriously lessened, and the crops must be proportionately light.

Draining is expensive. The cost of draining would in some places be enough to purchase as many acres as it would thoroughly drain. From estimates of the cost of thorough draining carefully prepared we may put the cost at $50 per acre. The cost of work actually when accurately kept differs little from these estimates. As the drainage is a permanent work, this cost cannot be fairly charged to one year's account. It should extend over a number of years. There have been instances in which the entire costs of draining were balanced by the improvements in crops in two or three years; but such instances must be few; but a farmer dividing the cost by a number of years, and estimates a reasonable improvement in his produce from the drainage, will see at once that there is a profit in draining.

Imports and Exports of Agricultural Commodities.

Under this head the *Farmer* (England), having given a review of the Board of Trade Returns, refers to the general effect of figures given. The newly issued returns, he says, express so pithily the general condition of the country that he for once breaks through the rule, and states that in the ten months of 1876 previous to the report the balance of trade is on the wrong side. The total value of exports of British and Irish produce has been 10 per cent. less than in the same period last year, and more than 10 per cent. less than in 1874. While the exports have been so much less there has been an increase in the imports. We cannot but remark that while the balance of trade has been on the wrong side in England, it has been the reverse in America. There the dependence of the country on other nations for manufactures, has been lessened. Their importations have greatly decreased, and this decrease of importation becomes less continuedly. But it is to the importations to England of agricultural commodities that we would refer. England imported during the ten months ending October 31st, 1876, live stock to the value of £6,400,000 in round numbers. These figures tell us of the vastness of that market opened up to the stock-feeders of Canada. In bacon, hams, and salted pork, the importation has been equally great in proportion. The value of butter imported has been one million in excess of that imported in 1875. In the importation of cheese there has been a failling off, more attention being now paid to cheese-making in Britain.

By far the greater portion of the commodities imported have been from North America, the United States supplying over 17 millions of cwts. of wheat, value over 9 millions of pounds sterling, and British North America supplying over 2 millions of cwts., value £1,081,961; and barley, oats, peas and beans proportionately. Some of the articles classified as it states are really Canadian, having been imported into that country from Canada, and they reaping a profit as brokers and shippers on Canadian products and receiving credit for them, as if the products of their own country. This business is passing away. Canadian merchants have learned there is a profit to be derived in shipping Canadian products direct to England from the ports of the Dominion; and those products are known in British markets as Canadian and appreciated as such. To this the very creditable display of Canadian products at the Centennial Exhibition has contributed no little. The policy of maintaining the credit there obtained cannot be too forcibly inpressed on the minds of exporters to European markets. For the encouragement of this trade it is necessary above all things that no inferior commodies that have not fairly prepared for market to be shipped to England. English love of fair play is proverbial, and we should see to it that all our dealings with that country be charterized by the same spirit. Fair dealing on our part and the supply of really good articles of produce will ensure for us the best market, for our increasing surplus products.

The Prospects for Supply of Food in the Future.

Producers have for some time been considering the question, "Where shall we dispose of the surplus of our farms?" while men thinking themselves wise have been perplexing themselves and others with the query, "Where shall food be found for future generations?" With them there is a terrible dread of a superabundent population, and a consequent want of food. It is not long since we had such a cry from the United States, strange as it might sound from that land where vast prairies are yet uncut by the plowshare, and yet there a *wise* man expressed his dread of a coming time when the earth would be incapable of producing food for its inhabitants. It is no new thing: it was the repitition of the doctrine of Malthus, discouraging marriage, from a dread that the world would soon become too densely populated. And now, again, comes a similar note of alarm, backed by a formidable array of figures. A man wise in statistics, Mr. Hawksby, in his address to the Social Science Congress assembled at Liverpool, expresses great alarm at the increase of the population in England. He takes up the question as one of simple arithmetic. He finds that the increase in 70 years has been 14 millions, nearly 1.35 per cent. of an annual increase. He computes that the population of England will have become 42 millions at the end of the first generation, and that at the end of the fifth generation it will not be less than 400 millions. If these expectations be realized, there may be expected a pretty high price for a hundred weight of flour and a roast of beef. We will not accompany Mr. Hawksby in his calculations to the close of the twentieth generation, when fifteen worlds such as this of ours would barely supply food to the increased population.

We have no dread of such a future for our little earth, though the people of the "tight little island" have increased at an average of 1.35 per cent. per annum. There are vast territories awaiting the hand of the tiller of the soil to give food to the increasing numbers of those generations. We need but refer to the unoccupied lands of North and Central America. And more than this, we know that vast empires, that in former ages had been teeming with agricultural produce, and had borne unnumbered millions of human beings, are now almost wholly deserts, not from natural sterility, but from causes that may be averted. We would merely name Syria and Asia Minor as instances of this reversed condition. We have not taken into our reckoning the increased supplies sure to be obtained from improvements in agriculture. Even Britain, great as has been her progress in the science and practice of farming, may increase her produce one hundred per cent. This we have on good authority.

May not Mr. H. have been led astray by his calculations? The history of the world, past and present, gives no support to his dark forebodings. The population of England may increase with the rapidity he says, but there is a different state of affairs in other countries. We need but look to the continent of Europe, and to France as a nation, where, if there has not been a falling off in the numbers of the people, there has been, to say the least, no increase; and in some of the United States the increase has been, not from families of