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### What every Farmer should Read.

The introduction of commercial fertilizers marks a new epoch in the history of agriculture. Their general acceptance in common farm practice is equivalent to a new force. They have revolutionized the mode of agriculture as thoroughly as steam and electricity has revolutionized transportation and commerce. A barren soil can be changed into one of exceptional productiveness through the judicious application of those elements of Plant Food which are wanting in it. Fields not only can be brought to their maximum producing power, but what is more still, they can be kept there, so that year after year abundant harvests may be removed from them; for, thanks to commercial fertilizers, what is withdrawn by one crop from the soil can now be replaced into it before the rising of the next, thus ensuring the conditions on the existence of which remunerative harvests depend. Acres which the plough had abandoned in hopeless despair have been again added to the area, on the products of which nations live and thrive and prosper. The tiller of the soil who, fifty years ago, earned by the sweat of his brow a scanty subsistence for himself and his family, returns to prosperity, if not to wealth. The self-same acres which hardly supplied food and raiment for the peasant proprietor and his children, now furnish him the means of educating his offspring, of purchasing improved agricultural implements, of adorning his home, of living in comfort at his fireside, and of laying aside, by thrifty management, a penny for rainy days. The marvellous ease and rapidity with which France paid off the enormous war indemnity of five millions of francs has justly taken the world by surprise. Yet, in a large measure, it was due only to the wealth which the sons of France knew how to derive from the land they live on, by a generous and intelligent method of farming. Nearly all European countries show a marked increase in the fertility of land worn out by centuries of cultivation, and often poor by nature.

To what else can this be ascribed, if not to a practical recognition of the value of artificial manures?

The importation of guano into Great Britain has increased from 2,881 tons in 1841, to 152,961 tons in 1861, while contemporaneous with it, grew up an enormous demand for superphosphates and other fertilizers, reaching an annual aggregate of 250,000 tons. These figures should convince the most skeptical mind that the phenomenal growth of this industry was caused by a no less phenomenal, though perfectly legitimate, demand on the part of the cultivators of the soil for its products.

In the United States the development of the fertilizer industry began at a later date than in Europe. The almost unlimited extent of territory in the North and North-West enable this country to draw resources which were not open to the densely populated countries of the Old World. Besides, the vast stretch of land brought for the first time under the ploughshare, was then possessed of almost boundless fertility, and gave at first enormous returns. Rich soil

placed there by nature, yielded very remunerative crops, and the necessity of parting with a policy of waste, incident to every new country, and of adopting one of strict economy in its stead, was not felt for some time. These and other reasons retarded somewhat the progress of scientific agriculture in this country. Nevertheless, the laws of demand and supply, with regard to the soil, apply here with the same inexorable force as everywhere else, and thus the day arrived when the New England States found themselves compelled to abandon the primitive ways of agriculture, which had exhausted the land for well-nigh two centuries, and to resort to a more rational, more intelligent, more scientific method of raising crops. Appropriating the accumulated experience of the European countries, the use of commercial fertilizers was there inaugurated, and soon spread over all States on the Atlantic seaboard, so that the consumption in 1875 has been estimated at over 100,000 tons of superphosphates alone. Since then rapid strides onward have been made, yet, as will be seen, much remains still to be done in that direction.

As far back as 1797 a recommendation of President Washington emphasizes the position which agriculture in this country occupied, in his estimate, in the following words: 'That the encouragement of agriculture is an object highly worthy of public attention, as it constitutes the most useful employment of our citizens, is the basis of manufactures and commerce, and is the richest source of national wealth and prosperity.' Again: 'On a view of the state of agriculture in the United States, it will be found that though it has made considerable progress in some parts, yet there are many important principles and valuable improvements, known and practised in other countries, to which most of the American farmers and planters are utter strangers. It may also with propriety be remarked, that the science of agriculture is in its infancy, and is susceptible of much greater improvement than it has yet received in any country. To introduce into our own the improvements of other countries, and to lay the foundation for discoveries which shall essentially contribute to the happiness of mankind, is an object worthy the attention of the legislature of a free people.'

Here is clearly expressed, with a strange foresight into the future, that the United States is, above all, an agricultural country, whose main resources lie in the broad acres scattered with such liberal profusion over the length and breadth of the land. The mineral wealth, great as it is, loses much of its significance when held up against the wealth for which no laborious and expensive digging down into the very bowels of the earth is required, but which can be gathered in profusion right on the surface.

It will thus be seen that abundant and remunerative crops are beyond question the main source of wealth and prosperity. They are the means of bringing the money of all nations into the country, to be reinvested in manufacture, in commerce, and in whatsoever promises a profitable employment for capital. A prosperous condition of agriculture is the condition without which no prosperity in manufacturing industries can last. What the harvest sucks from the willing bosom of mother-earth, that, and nothing else, constitutes in all countries, and at all times, the most solid, the most reliable, and the most unfailing, because the only true source of a nation's welfare and advance. However, it is not enough to give merely mental assent to the correctness of this universally recognized axiom; it is necessary to go further and to carry out

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