

of cultivation, predicated on the analysis of these particular subsoils. Men of the highest knowledge and education bear testimony to their value; men of the surest practical knowledge have become converts to a system of cultivation opposed to their former usage, and unsanctioned by any custom of which they were cognizant.

The products of these lands in their first crop have been greatly increased, and will, if the rules laid down by the teachings of science be followed, give as large crops as when they were first cleared. There has been besides, as one of the fruits of this office, and by no means the least important, a spirit of enquiry and investigation set on foot, which, carried on by men who know "no such word as fail," will confer great benefits on practical Agriculture.

I have also analyzed and determined, the value of many specimens of bog iron ore: there is a prejudice against the iron made from this ore, amongst farmers, who say, that the iron from it is always very "brash." This is owing, I am certain, to the carbon, (charcoal,) in the iron, and not to any intrinsic quality of the ore from which the iron is made. This charcoal is to be destroyed by more skilful preparation of the iron. This not being in the strict line of my duty, I did not follow up my investigations on this most interesting subject. I am satisfied however,—other things being equal,—that the *specific gravity and tenacity* of iron is in direct ratio to the quantity of charcoal which it contains.

Farmers have been directed to the true sources of knowledge, and when sufficient time elapses for its application, fruits will be seen in more improved lands, and happier homes, than yet have blessed many sections of our State. I have been informed by one of the largest booksellers in the State, that he has sold more scientific works on Agriculture since the existence of the present law, than have ever before been sold in the city where he lives.

The community, too, have been saved much in avoiding nostrums, which, under the guise of manures made on scientific principles, are frequently based on ignorance of the first principles of science, are false in theory, and even have not always the merit of being compounded in accordance with that theory.

These truths are the best evidence of the necessity of this law, and I can refer for their evidence, to every county of the State where I have been. The testimony is living, present, and unimpeachable, and I may safely say, will be given from more numerous sources as its practical operations develop it.

We can confidently look forward, as the fruits of this office, to a system of Agriculture founded on sound principles of induction. The facts collected by it, when systematised, will make the culture of the soil as certain, as any of the arts which depend on the exact sciences for aid.

It will settle, in reference to the soils which may be investigated, the following questions:—*The best kind of manure; the best time, and form, for its application; and the quantity to be used; so as to produce the greatest yield at the least cost.*