

the school at Moeglin. We know that Thaer was not renowned as an agriculturist, but as a doctor; he was a man who had received a deep scientific education, and all his merit consisted in his being the first to apply the knowledge he had gained in science to practical agriculture. No agriculturist would confirm his agricultural calculations on the net cost and gain, or carry out the idea of net and gross produce, without a knowledge as deep as Thaer's of political economy. Without possessing the philosophical education of Thaer, it would be impossible to draw out certain rules for guidance by the help of agricultural facts as innumerable as incomprehensible. It would be still more difficult to apply the natural sciences to agriculture without a knowledge of natural history. The lessons of Thaer were so useful, not merely because he was a practical, but more because he was a scientific man.

In the time of Thaer a young man could acquire no knowledge of physics, chemistry, botany, geognosy, or mathematics, without a university course. Thaer, who saw the great service all these sciences would be to agriculture, was obliged to introduce a part of each theory into the plan of studies he traced for Moeglin. These are the accessory circumstances which caused the annexation of a rural estate, serving as a means of instruction in practical agriculture, and a school where all the accessory sciences could be taught under the able direction of Thaer, who knew so well how to preserve a proper relation between theory and practice. This double direction given to the studies was useful, but it became the source of great evil to agriculture itself, because it was kept up in all the agricultural colleges subsequently founded: the result being, that the direction of these establishments was given to men possessing a knowledge of the practices necessary for the conductor of rural improvements.

Unfortunately, as it was impossible to find men possessing practical knowledge of all parts of agriculture, the choice was confined to those who were capable of managing the culture of wheat or artificial meadows. But the society exposed itself by committing serious errors in measuring the ability of a man by the superiority which he manifested in one special thing; because his exceptional abilities depended upon the care, order, and activity which he displayed, on the fitness or composition of the soil—in fact, a thousand things which cannot be taught in a school.

It is true, the culture of wheat and fodder is the principal aim of agriculture, because bread and meat stand before all other produce—such as beetroot, oats, flax, tobacco, and the vine; as the development of commerce does not permit them to be considered of any significant value. For the same reason, one has a right to say that the making of sulphuric acid includes all manufactures not mechanical. However,

the culture of wheat does not constitute the whole of agriculture any more than the fabrication of sulphuric acid constitutes the whole of chemical arts. It would be as absurd to appoint as director of a school of practical chemistry and chemical arts a manufacturer of sulphuric acid because he had distinguished himself in his trade, as it would be to place at the head of an agricultural academy men whose whole talents consist in being able to raise wheat and clover.

As we have to confide these institutions to men devoid of all the qualities which have rendered the influence exercised by Thaer at once so powerful and beneficent—as we have to choose them amongst men who possess other talents of which, in one point of view, Thaer was inferior to many practitioners, these schools have lost their scientific character; and their influence and their position have shown in an incontestable manner that practice alone—that is to say, without the aid of science—is quite incapable of making progress. Hence, we can comprehend the remarkable phenomenon of academies, often richly endowed by the State, not assisting during half a century in the development of agriculture. We certainly cannot accuse them of having left the theory and practice precisely at the same point to which Thaer brought it; but it is certain they did not comprehend the aim that great man had in view, and that it is impossible for them to learn it.

These academies lost much of the faculty of ascertaining and comprehending the importance of a scientific result, when the pressure of the want was felt for experimental institutions (*versuch stationen*) taken from the heart of agricultural societies, and even recruited from the circle of practical agriculture for the purpose of experimenting on the practical results of science, and thus enabling them to connect theory with practice. The existence of these experimental stations showed how little the agricultural academies were in a state to put the forces and means at their disposal to the service of progress, which is the most important of all causes. In fact, if from the commencement the schools had kept up their character, no one would have thought of building other institutions, half scientific and half practical. It is not, then, to be wondered at that opposition against the new scientific doctrines manifested itself in these schools, where the directors should at least have shown themselves friendly to them. But it is impossible for them to shine in their schools, nor even to keep pace with the scientific discoveries of the age, whilst they have a career open before them for giving proofs of their ability, of their agricultural knowledge, and acquiring for themselves reputation and honour in the estimation of their superior officers, by augmenting each year the produce of the establishment entrusted to their management.

A director, animated by a true scientific spirit,