

## AGRICULTURAL EDUCATION.— WHERE SHOULD IT BEGIN?

THE agricultural class is the largest class of citizens in every civilized country on the globe. The character of this class then, must be of the highest importance to the general welfare. Their occupation tends to regular habits and orderly industry. But, unlike the mercantile, mechanical, and professional classes, who are mostly located in towns and are brought into the closest business and social relation, farmers are scattered over the whole country—are so isolated as to have little daily intercourse with each other. Their minds are not sharpened by the friction of society, where new ideas are suggested and developed by association. They thus become, necessarily, the most conservative class, and are inclined to follow traditional routine so closely, that innovations are seldom suggested or made by those born on the farm. So widely is this true, that nearly all the machinery which so facilitates and cheapens the labor of our present agriculture, was invented and adapted to its work by amateur farmers or by those outsiders who had observed the need of such helps in farm operations. The farmer, therefore, needs some stimulant to cause him to use his brain as well as his hands. He must be educated in the principles that underlie his practice. He must become an active observer, a discoverer. He must experiment, analyze and compare his experiments. It is for the want of such observation and experiment that everything is aloft in agriculture, and nothing settled. In architecture, surveying, engineering or navigation, definite rules and instructions lead the student on to a safe knowledge of the art. But the farmer has no idea of fixed principles in agriculture. Indeed, he regards the whole business as entirely independent of rules, and not to be brought into subjection to order and reasonable certainty. Yet an examination of the subject will show that every process in agriculture is as capable of being reduced to system and order, as capable of being taught, as other applications of the natural sciences.

Where, then, shall this scientific education of the farmer begin? The writer has advocated, for ten years past, that the rudiments of agricultural science should be taught in the

### COMMON SCHOOLS.

Here the minds of the vast majority of young Americans receive their earliest and most impressive training. This is the common nursery of knowledge for the people. Here should the young mind imbibe, in the simplest forms, the elements of chemistry, geology, mineralogy, meteorology, entomology and botany.

Some object to this because the young mind is not capable of understanding such instruction; but the elements of these natural sciences are no more beyond the comprehension of young minds than geography, arithmetic, or grammar. They can mostly be taught with objects to aid the understanding. In this way the child comprehends technical terms as easily as the philosopher. His mind should not be crammed with technical terms without a presentation of the objects to which they are applied. Children readily comprehend the facts of nature, when illustrated with the objects, much more readily than abstract ideas. All of these sciences may thus be taught to the young. This theory is already in practical operation in Germany. The German system is, common schools, middle schools, and academies; and the last step is from the academy to the agricultural course in the university. The common school gives theoretical or practical lessons in agriculture; veterinary lessons and demonstrations, and surveying. The middle schools, beside the ordinary branches, give chemistry, physiology, botany and zoology; agricultural management in general, with lectures on veterinary treatment, drawing, building, and agriculture laws. These two schools are designed to give the best practical education to those who are not able to take the higher schools, but are to become small farmers or overseers of small farms. In the latter class of schools they are required to practise all kinds of farm work, under the direction of qualified teachers, that they may acquire practical judgment and skill for the same themselves, or for directing others.

According to late statistics, it appears that there are 150 of these first two classes of schools distributed through the empire, some of them limited to teaching the local specialities, such as vine and fruit culture, horticulture, bee-keeping, &c. I think, in our country, we should unite these two classes of schools in the common school. Our common schools take the pupil at the start and finish him for the active duties of life, in about forty-nine cases out of fifty. The period of education extends from five to twenty-one years, a period sufficiently long to give instruction in the rudiments of these sciences. The school to benefit the farmer must be in his own neighbourhood; the knowledge must be brought to his own door. The routine farmer is wont to impress upon his son's mind that farming consists merely in the practical manipulations which he sees and assists on the farm. The son thence infers that farming is mere drudgery, and nothing else, and he longs for something to sharpen up his wits—something which shall call out his mental energies,

and thus he escapes from the farm into anything that will gratify this desire. But when the rudiments of agricultural science shall be introduced into the common school—when the farmer's son finds that agriculture is an intellectual pursuit—that it is of such importance as to be taught him at school—that the natural sciences are his servants—that the most clever professors may here find scope for all their learning—this changes the whole picture. What was mere drudgery becomes a manly exercise directed by science, and the advanced farmer becomes a savant! When he learns that all the processes on the farm should be governed by definite knowledge, and conducted under as exact rules as mechanics or engineering, his respect for his father's calling increases,

He will then learn that the breeding and rearing of stock successfully, requires a knowledge of the laws of life, both vegetable and animal. He studies into cause and effect; learns that the intelligent feeder requires a knowledge of the structure and functions of the animal he grows; that the food must be adapted to the purposes intended; that as the animal has no power of transforming one element of food into another, but can only appropriate what it finds ready made for use, the food must contain just such elements, and in the proportion required to build up the frame, the muscle, and lay on the fat; that the starchy parts of food supply animal food, and that if the animal is exposed to a low temperature it will require just so much more food to keep it warm than if in a stable of uniform and moderate temperature. The study of the vegetable will greatly awaken his interest when he learns that it, like animals, must be fed, and that the food must be exactly adapted to its wants; and, on surveying the whole routine of agriculture, he finds it an intellectual process.

The interest of the children will also excite the interest of the parent and farmer himself. It will soon cause him to revise his opinion of "book farming." He will begin to see that books and newspapers are as necessary to the farmer as to the doctor and lawyer. The introduction of the elements of scientific agriculture into the common school will also be the beginning of success for the agricultural college. These studies in the common school will develop the aptitude of the boys for the college course. Thousands, who would not otherwise have their attention turned to it, would here find great delight in the study of these sciences. When a boy shows an aptitude for this course he will be pointed to the agricultural college as a place where this taste can be gratified.—*Country Gentleman.*