

and shrubs is the hot days of February and March.

The earlier grapevines are tied up, in April, the better, as they then become inured to the cold nights, and if the buds start they stand harder frosts than if left covered until May.

### THE POWER TO OBSERVE ESSENTIAL TO A FARM EDUCATION.

At one of the meetings of the State Board of Agriculture of New Jersey, several of the speakers advocated a change in the methods of educating farm children. Their earliest instruction should be from objects rather than from books, with the view of training them to be observing. With young children the chief work of the teacher and parent should be to train natural powers of investigation.

One writer says: "There are very few farmers who have ever learned to see well. They may be shrewd in business and quite able to see a point in trade; they are not able to observe what is going on about them. Buying some honey the other day of a farmer, we discussed the short apple crop. I suggested to him that it was possibly largely due to the premature hatching out of insects that bear pollen from flower to flower, and then their killing off by the cold May. He at once added that his bees fertilized his own orchard of close-set trees, but were unable to fly to other orchards to render similar service. The consequence was that he had a fine crop while others got next to none. This man knew how to see; and what he saw was this—that bees not only make honey, but that they make our apple crop as well. Is it at all likely that a man who can see as well as that will not see a good many other things that his neighbors fail to see?"

Let us consider in how many ways this cultivated observing power may be of advantage. Of course the first point to be generally considered is the financial—not the

highest or most valuable, but first to be looked after. The power to observe well enables a farmer to comprehend the money values of his soil, and his crops, as no one else can. He is sure not to overlook the possibilities under his feet.

I have seen a man beat out of his home on the ground that the soil was too poor to support his family; but his successor, a man of different make-up, found a marl bed and grew rich."

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"Trained to keen inquisitive mental action a man feels his power and dignity, and is less liable to waste himself in vicious habits. But, perhaps, best of all, the boy has by this sort of culture learned to love his home. Everything is intensely interesting on the farm. A bug is not a mere insect, and nothing more; but, more than any book ever opened, it is a volume to be studied. Every leaf becomes eloquent to him. The trees are companionable. He understands what he is surrounded by, and for that reason loves the land."

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"What then would you do about it? I would for the first seven years of a child's life consider it my sacred duty to open his eyes to Nature. It is a matter of no importance that he shall learn to read before eight. With his first acquisition of letters he should begin a more elaborate study of things on the land and about his home. He should have very little use for books that send his mind roaming over the world. I would begin with the study of soil, plants, bugs, animals—of the home sort. It is far more important that he shall understand the plum curculio than the African lion. But the bottom difficulty with our farmers is that they have never been taught to distinguish one bug from another. In a square fight the bugs beat and destroy our crops and trees. The anthracnose and black rot dealt deadly blows to our grapes and vines before it was possible for the observers to inform the vineyardists what to do. I cannot find one farmer in ten who can tell the codling moth from the tent caterpillar."

"How shall we proceed with our children to secure the end specified? It is a very simple matter if set about persistently. I take my little ones by the hand as soon as they can walk and make it my business to answer questions, and to ask them. "What tree is this, Phil?" "It is e'm," or "it is ash," or "it is cracker-nut," as the case may be. Let him have his own names, which will always be descriptive. Cracker-nut stands for butter-nut, which is our way of describing the same tree. "But why is it e'm"(elm)? "Don't you see, Papa? See, the leaf is rough and the bark is too." But the pear has a shiny leaf, and the bark of the linden is easily distinguished. He will pick out the specific peculiarities. You are teaching him the important habit not only of seeing but of telling, and of afterward being able to recall and define. This plan must be pursued for years, from two or three up to seven years of age. By that time the child has learned to explore, to discover, and very likely to invent. You will be astounded to find how much he sees before you do. He begins to be your teacher.

Remember this, that you can never have a wisely educated child by any possible system of proxy. You cannot turn over all responsibility in the case to other parties. Home education must cover a good share of the best culture of the earliest years.

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"But after our own persistent and patient work comes the public school. There we must insist on the same general principle as we have previously applied ourselves. This will not be difficult when the farmers are well waked up to what they need. I venture to believe that it will not take ten years to introduce the study of vegetable and animal life into our common schools for boys and girls of eight to eighteen. These studies are no more difficult than geography and grammar and arithmetic. The same grade of teachers can quite as easily master botany and entomology. But our reliance must be placed on a broadened normal school system. We must refuse with persistence to accept any teachers with picked up educations. An untrained teacher cannot wisely train pupils."