

available tree upon their farms under the theory that they can better raise wheat and buy their fuel. This is absolute and inexcusable theft from the next generation.

We have lauded Michigan as a State in which to build homes, and still a large proportion of us are trying by our actions to remove the favorable conditions which render the State attractive as a country to live in.

We have no sympathy with the fear expressed that with the rapid destruction of our timber there will be at no distant day a dearth of lumber for manufacturing purposes. Substitutes will be found as soon as needed. But where will we find a substitute for lost climatic conditions that are the formulation of agricultural success?

We can not make too much of this matter, and we can not study too carefully the methods of restoring favorable climatic conditions already lost. Forestry, wind screens, and all subjects connected with timber planting and preservation should occupy a prominent place in the discourses of our clubs, institutes and societies devoted to the interests of agriculture.

Newspapers should keep the subject before the people, and publish everything that will throw light upon such matters.

The facts which are now confined to scientific circles should be commonly known among the people. And, if necessary, the State and government should take more active measures to protect those who will not protect themselves.

**WHAT THE PEOPLE EXPECT OF A BOTANIST AT AN AGRICULTURAL COLLEGE.**

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First, they suppose he teaches classes in botany how to learn the names of plants, how they climb, how the flowers are fertilized, how they grow, how to examine these with a compound microscope, and many other things. Perhaps they think he collects interesting things for an herbarium, a museum, collects plants and keeps up an arboretum and a botanic garden, where ponds include some fine aquatics. Besides these, the writer does many other things,

and is prompted by a list of questions asked for several years past. A great many of these are of a general nature, and do not pertain to botany, horticulture, or even to agriculture. I will not here mention such questions.

One of the most frequent, and one requiring much work, is a call for "copy" from papers which are wholly or in part agricultural, horticultural, or botanical. Agricultural and horticultural societies of Michigan and other States, clubs, institutes, lyceums, granges, scientific societies, want lectures or papers. Some member of a grange wants help or information to prepare for a paper. The botanist is called on to collect forest products and grasses and other things for a State fair, a horticultural meeting, or a national show at Philadelphia and New Orleans.

Editors ask all sorts of questions, individuals ask them by letter and in person. People want to know the name of a poisonous plant which is supposed to kill sheep. They ask names for all sorts of weeds, grasses, wild plants, native or foreign, usually sending an imperfect specimen, as one leaf, a seed or a flower, often requiring from one to three hours of close study.

One man wants to know the name of a new plant which he thinks is very promising for producing an essential oil.

They not only want to learn the names for weeds, but how to get rid of them; just as though there might be some royal or easy plan.

In Europe, as well as in this country, it is the custom for the botanist of an agricultural school to name the grasses and to note the qualities of each for meadow, pasture and lawn, on all soils and for all climates.

All plant monstrosities and puzzles are referred to the botanist. Editors and farmers send specimens supposed to prove that wheat turns to chess, and want an explanation. One man had heard that the writer has a standing offer of \$400 for proofs that chess comes from wheat; he (the farmer) has always believed it, and thinks he has the specimens to win the reward. He remains a couple of hours, sees every move made in dissecting his specimens, and departs quietly and good

naturedly, without claiming one cent of reward.

A botanist in a college like this often tests, or is expected to test, seeds to learn their purity and vitality, especially seeds of vegetables, grasses and clovers.

He is called on to explain, if he doubts, that potatoes mix in a hill, or that hybrids may be produced by splitting the buds or scions.

He is asked for a list of books suitable for a grange or farmers' club. Questions come about a course of study or the work at the College. One man wants to know how many kinds of maples we have and how to distinguish them. A nurseryman is offered five dollars for a young native mulberry tree, when neither one knows what it is. The man regrets that he refused to sell after learning the name. Leaves, fruit or bark are sent to learn names for the coffee tree, hackberry or red bud. Several want to know about collecting tree seeds and how to ship them, also when and how and what trees to plant.

Why is it that a solitary chestnut tree will blossom freely and not bear fruit, although both sorts of flowers are present?

To help decide a case in law, leaves are sent in to know if they are smeared with blood. One farmer sues a neighbor for selling clover seed which proved to contain seeds of rib grass or lame-leaved plantain. The writer is called on to speak of the nature of the plantain. A man in a distant State quotes the opinions of Dr. A. Gray, Peter Henderson, and Gregory, of Marblehead, each different, and asks me to what extent vines of melons, squashes, cucumbers, etc., will mix. How can wood be made more durable, and when should trees be cut that the timber may last longest?

Please examine this bad drinking water and see what life it contains. It takes a good half day's work. What botany books shall I get or read?

Several inquiries are made and suggestions asked for by managers of experiment stations.

Scabby potatoes are sent in, to be told that in this case some worm or insect is the leading cause.

Plum trees drop their leaves prematurely and are full of small round holes.

They are troubled with a fungus septoria. Pears and apples blight; peach trees have the yellows; quince bushes blight, or the fruit is troubled with a fungus. Roestelia plums rot; grapes rot and mildew; several fungi are the cause. Is corn smut a plant, and will it spread? It is a fungus. What is a remedy for red rust, a fungus, on raspberries and blackberries? What can we do for scab on apples and blight on leaves of strawberries, and black knot on plum trees? All are fungi or parasitic plants. Celery or lettuce die off in immense quantities very suddenly; rot attacks tomatoes; the heads of wheat blight; smut and rust attack wheat. The last lot of questions deals with fungi, about which too little is known. We lack experiments. Botanists are now agitating the question, and were the means of having a man for this special study placed in the Department of Agriculture at Washington. Several experiment stations are at work on these low plants, but we need many of the closest students, who can make a long line of experiments. Wouldn't it be worth while for granges, clubs, and horticultural societies to think of these things, and talk them over, and try to do something, or have more done with a view to mastering these knotty problems of horticulture?

#### RECENT LITERATURE CONCERNING PEAR BLIGHT.

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Nothing has interested me more as connected with the subject of horticulture recently than the discussion upon pear blight. A valuable contribution to the literature of this subject was recently made by Prof. J. C. Arthur, at the Ann Arbor meeting of the American Association for the Advancement of Science, from which I gathered facts that may be of interest to the readers of the MICHIGAN HORTICULTURIST.

Some years ago Prof. T. J. Burrill, the genial and enthusiastic botanist of the Illinois State Industrial University, announced the discovery of a bacterium in the blighted twigs of pear and apple trees. To this minute, one-celled plant he gave the name of *micrococcus amyliovor*. Professor B. pushed his experiments far enough to ren-