

FERNDALE SCHOOL.

No. V.. AN APPLE TREE BORER.
(*Saperda Candida*. Fabr.)

T. Position *First*, and observe what I am showing you. This is a portion of the stem of a fine young, and at one time a promising, apple tree. Without any visible cause, this summer, it commenced to droop and then died. Here is the root and stump, with some sections sawn across. What do you see?

S. Why! there are holes going right through the heart of the stem of the tree.

T. You are right; but now look closely at this part of the stem, just above the root, about on a level with the surface of the ground around the stem.

S. It is mostly all eaten around under the bark and the vacancy is filled with a dirty kind of sawdust stuff.

T. Look closely to see if there is any opening in the bark which could admit an insect into these cavities.

S. No, there's none. Yes, here is a hole—a very small one—with a little of the sawdust stuff coming out. Is it there the insect got in? If so, it must be a very small one.

T. No, it is not so very small. Perhaps we can find it.

S. I don't see how anything big could get in. Nobody could tell

there was anything wrong with the wood, the bark looks so sound; unless one was expecting to find something by looking very closely for it.

T. Yes, tap the bark over the cavities. It sounds hollow, does it not?

S. Yes, but you wouldn't notice that unless you expected something wrong.

T. Very good. But now look at these sections of the tree a little higher up. Large holes are bored towards the heart of the stem. The borers are probably in this upper piece yet, because you see the upper section is solid. I shall strike it so as to make whatever is in the holes fall out. What is coming?

S. Some of the sawdust stuff.

T. Keep watching, as we must soon shake something more out.

S. Oh! there is an ugly white maggot—a grub—come out.

T. Perhaps we may find more than one of them. You are quite right in calling it a grub, as it is the larva of a beetle, and is called by gardeners the

Round Headed Apple Tree Borer. Let us examine it, and make a large drawing of it on the blackboard. See that our drawing will be a true one now. Here we have it at (a).

T. How large is it?

S. About an inch.

T. Its color?

S. White; but its head is brownish, hard and shining.

T. Its jaws?

S. Black and very hard. They move sideways like the caterpillar's jaws. But it has no feet like the caterpillars.

T. But here from another cavity we have got something else—more like a beetle asleep. What do you suppose it to be?

S. The beetle.

T. No. Let us draw it at (b). You see it is midway between a grub and a beetle. It is the pupa, or, as some call it, the chrysalis.

S. What is the beetle like?

T. Here it is pinned in our collection. Jack

caught several of them last June one evening about some apple trees. Let us figure it at (c).

S. Who would have thought such a pretty beetle could have been so ugly once and have done so much mischief? How pretty the two broad white stripes look on its pale

brown back. See how long and curved its antennae are! Will you give us its life history?

T. I will. This pretty beetle's mother came out of the stem of an apple tree, or perhaps of a thorn bush, mountain ash, or some other tree nearly related to the apple tree, just three years ago this summer. Early in July, 1884, it deposited the egg which developed into this beetle in June, 1887. It selected the place with care, on the bark of the apple tree stem just above the ground. In a fortnight the egg was hatched and the young grub with its sharp jaws eat a small hole through the bark to the juicy wood upon which it fed. It grew larger and cleared a small space under the bark, larger than a cent, which was filled with its castings. These castings were pressed out of the small entrance hole and would have betrayed its presence if one should have examined the tree. The color and the sound made by the bark when tapped would also reveal the secret of its hiding-place in the cool days of autumn. In winter it becomes passive, reviving with renewed energy in the

