stance around the tree trunks in October to catch the Fall species, and about April to catch the Spring species. The wingless females walk up to the band, and if there is no way to get over or under it they either get stuck in the sticky substance on the band, or never get up the tree.

T. Very good. The tar must be kept soft and sticky by mixing with oil; and the bands must fill the crevices of the bark or else the small caterpillars hatched from eggs at the root of the trees might get up to the foliage. But spraying with the Paris Green water recommended for the Codling Moth in our last lesson (one ounce to about fifteen gallons of water) is sure death to the young caterpillars. When should the spraying be done?

S. When the eggs commence to hatch.

T. When is that?

S. When the buds commence to open.

T. Very good. Spray the trees for the Canker-worm in May just before the buds open. Then again in June, just as the petals have fallen from the flower. Then the two great enemies of our apple trees, the Canker-Worms and the Codling Moth, can have but little chance for life or for mischief doing.

FERNDALE NOTES.

No. IV.—The First Map.

Side of the school-room in the direction of the rising Sun—East. Opposite side—West. Face the Sun at noonday—South. Opposite—North. People agree to have the North at the top of a map. Let us make a map or plan of the school-room—that is, a drawing to show just what the room is like.

Here is a foot rule. Measure the North end of the room. How many feet? It measures 30 feet. Can I draw a line this long on the board? No. How long? Thirty inches. Well, we draw a straight horizontal line, and make it 30 inches.

Now, Jessie, you measure the East side of the room. How many feet? Thirty-two. How does the East side join the North side? Look down at the floor. It makes a square corner. Well, we shall draw a line from the end of the one on the board making a square corner. Is that like it? Yes. But from which end should I draw it? We don't know. Well, face the North end. At which hand is the East? At the right. Well, face the line drawn for the north end on the board. From which end should we draw the line for the East side? From the right-hand end. Very good, from the right-hand end we shall draw it. And how long? Thirty-two inches.

Now, Lena, will you measure the West end? Can anyone tell how long she will find it to be? Yes, 32.

feet. How do you know? It appears the same length. It would have to be the same length or the room wouldn't look square at the corners. Lena says you are right. We shall draw it like the other side.

Who will measure the South end? We needn't. It must be the same as the North end? Must it? Go and try. Yes, thirty feet. What kind of corner shall we make? Square. Drawn, but not at right angles and does not meet the end of the other side. Oh, it is not a square corner. Why? Because it would meet the other end. Why? The South end of the room meets the two ends. Very good.

Measure the platform. Six feet wide and all across the room. How far from the North line shall I draw it? Six inches.

How far are the seats from the wall and platform? Measure. Three feet from the wall and four from the platform. How far from the lines in our drawing shall I make them? Three inches, and four inches.

Complete in like manner. Mark cardinal points on the plan of school-room. What direction is teacher's desk from such a desk? In which seat is four sitting? John, please walk round the passages through which I am drawing this dotted line.

This is a plan of the school-room. If the trustees somewhere else wished to build a school-room like this, would this plan show them how to do it? Yes, if they knew how much an inch meant. How much? One foot. But could not the same thing be shown without so large a drawing? Yes, make half an inch stand for a foot. Couldn't it be made still smaller? Yes, a quarter of an inch for a foot. Which drawing would be on a large scale? The first. Which on the smallest scale? The last. What is the scale? I don't know. Well, in the first it is *one* inch to the foot. You can now tell me the scale of the others. A half an inch to the foot, and a quarter of an inch to the foot. Correct. If we wish to draw a map or plan of the school grounds, what must we first do? Measure it. Well, you shall do so, and I shall draw the plan for you on the board, according to your measurements. But will the board be big enough? Yes, if we draw it on a smaller scale than the school-room.

We learn from the London *Schoolmaster* that the introduction of shorthand into Rugby School, England, has proved a great success. There are nearly one hundred boys in the shorthand class, and all of them are most attentive and eager to learn. Dr. Percival, the head master, says "the boys are delighted with the lessons," and he thinks that shorthand will become a very popular subject among them.