

For the REVIEW.]

Mud—I.

Mud! Mud! What's mud?
 Nothing else to Johnnie Grubb.
 Pies! Pies! Mud pies!
 And much more to Johnnie Wise.

T. Which Johnnie are you?

S. Don't know.

T. Oh well, I am afraid it's nothing more than mud to you. But just come out for a few minutes and have a look at the pool on the road made by the rain shower. We shall find plenty of very fine mud on the bottom of it. Now do you think the mud just grew there?

S. No; it came down the road there.

T. Why did the mud come down while the little stones didn't?

S. Because it was finer and lighter?

T. Now here is a little pool which has been dried up. Let us cut the mud through with a knife to see if it is all alike. Now tell me what you see?

S. It is very, very fine over at this edge; but near the upper end and the middle it is very much coarser. There is quite a bank of sand here, and one side of it spreads out finer than the other side. But over all the top there is a very fine layer.

T. Now if this pool should be allowed to dry up quite hard, what would happen?

S. Oh! I know. I have seen it often. The dry mud would crack into a sort of squarish, irregular pieces, sort of honeycomb like.

T. Well, what would happen if another rain shower came on to fill the pool?

S. There would be another layer of coarse sand and very fine mud laid down on the top of the older one.

T. Now, do you find anything else in the mud and sand?

S. There is an old leaf buried up in it here. I think it is a birch leaf.

T. Do you think the leaf grew there?

S. No. A leaf couldn't grow there. It must have grown on a birch tree.

T. And do you think the birch tree is anywhere?

S. It must be. And it cannot be very far away either; for the wind might blow it for a small distance, and the little stream couldn't carry it from farther than that little rise on the road.

T. Very true. Although the leaf is buried up in the mud now, it came not very long ago from some birch tree within sight of us. But as this little pool will have all the mud in it mixed up by carriage wheels or feet passing through it, we shall leave this point for another day, for another pool by the roadside,

which will not have its layers of mud and sand and leaves mixed up or disturbed by anything passing through it. Let us now trace the mud to its source. Where did it come from?

S. It must all have come down from the ground on that gentle slope. It could not have come from any greater distance, as then the water would run the other way.

T. Well then, let us go up the bank from which you think the most of it has come. What do you find here?

S. Ground with stones, some big and some very small.

T. And what is "ground?" Let us pick up a handful or two and a few of every different looking kind of stone or pebble you see, and return to the school house. I am going to put a handful of the ground into a bowl of water, and stir it up to see what the ground is made of.

S. Oh do. Hurrah, hurrah.

T. Now that we are in the school room, you must sit very still and I will give all a chance to see what is done. This bowl of water after I stir the ground into it becomes very—

S. Muddy.

T. I pour the muddy water into this tumbler where it will be allowed to stand. I now add more water to the remainder and stir it up well. What difference is there between the remainder and the original "ground?"

S. The most of the fine stuff has been washed off by the water into the tumbler, and all the little stones and the sand and some muddy water remain.

T. I stir this around well and decant the water rapidly into another tumbler. What remains?

S. Nearly all little stones and coarse sand.

T. I will wash this remainder again and decant the the stirred water rapidly into still another tumbler. What is left now?

S. Nearly all little stones and coarse sand.

T. When the water is allowed to settle a little, and is poured out gently, what portion of the ground was carried away in the water?

S. The very, very fine mud, and all the heavier stuff was left behind.

T. And when the water was agitated strongly and poured rapidly?

S. Coarser mud and sand were carried in the water.

T. Now you see that the mud is settling to the bottom of each of the tumblers; and by to-morrow all the water above will be clear so that we can pour it off. We shall then have a closer look at the finer and coarser thing which make up the "ground." But we