

beautifully characteristic of young children than the desire to know the why and wherefore of everything they see, I fear that there can be little doubt that it is one of the main results of our present school system that the natural spirit of inquiry, inherent to a greater or less extent in every member of the community, should be thus stunted in its growth, instead of being carefully developed and properly directed.

To maintain and develop that natural spirit of inquiry we must work with Socratic questioning and heuristic exercises mixed or alternating.

To exhibit this alternation a lesson was given by the lecturer to an intelligent school-boy from a neighbouring elementary school.

Experiment and question by the lecturer, followed by the answer of his "victim" constituted the lesson, and here and there a little heuristic problem was interposed to be worked out by the students individually. It is impossible to convey the whole effect, but the following sketch of the lesson will indicate the method :

LESSON.

What is this?—A pair of scales.

What am I doing with it?—

Weighing.

Why are the scales now steady?—

Because the weights balance.

That word of yours gives a name to all appliances for weighing.

What can we call them all?—Balances.

What part of the balance is this?—The beam.

When I shake it what does the beam do?—Moves up and down.

Yes ; we say, it "oscillates."

Look now at this U tube. What does it contain?—Water.

I shake it. What does the water

do?—It oscillates.

What does it remind you of?—

The beam of the balance.

It is one ; but tell me what is above it?—Air.

On which side?—Both sides.

What balances the air pressure on the right?—The air pressure on the left.

What forms the beams of this balance?—Water.

[Here is the place for a problem or problems to prove and give a general idea of the magnitude of the air pressure.]

PROBLEM.—Take a wide mouthed bottle, such as is used for preserving fruit ; also take a hard-boiled egg with the shell removed. Drop a burning piece of paper into the bottle, and keep the fire burning for a minute or two by adding other bits of paper. Then place the egg on the mouth of the bottle so as to act as a stopper. Wait and see what happens, and then explain it.

[The egg is forced into the bottle by air pressure. After some questions on the problem the lesson is resumed.]

I tilt the tube. What is driven out on the left?—Air.

And let in on the right?—Air.

I close the end on the left with the finger, and place the tube upright. Show me the beam of the balance now. What presses on the right?—Air.

And on the left? Air and water.

On which side is the air pressure greater?—The right.

How do you know?—Because water is added to that on the left to balance that on the right.

What is this?—A glass U tube.

And this?—A foot rule.

Take the foot rule, and measure the arms of the tube.—One is fourteen inches ; the other rather less.

What do I pour in?—Mercury.

What length of tube does the