

water, and pass two glass tubes through the stopper, one extending to the bottom of the bottle and the other just passing through the cork. Suck through the short tube.

The pupils should feel throughout the foregoing set of Experiments that they are carrying on an investigation, namely, to find out the different constituents of air and to study these constituents as to their properties. The last two constituents will be investigated later.

### WATER AND ITS CONSTITUENTS

Lead the pupils to understand that they are about to conduct an investigation to find out (a) the constituents of water, (b) the properties of these constituents, (c) some properties of the water itself.

The methods of procedure should be first discussed. Let each pupil first of all evaporate a single drop of rain water, of well water, and of river water on a watch glass over a very small flame; each drop will leave a stain on the glass, showing that it contains some solids. Explain that these are impurities in the water.

As we started our investigation of air by trying to burn magnesium in it, we might begin in the same way with water; but water, instead of supporting combustion, is generally thought of as extinguishing a flame. However, if we use water in the gaseous state, so that the conditions will be more nearly like those of the air experiments, results may be more satisfactory.

Let the pupils place some water in a flask and boil it vigorously until all air is expelled from the flask. Wind magnesium ribbon in a spiral about a lead-pencil, take off and fasten on the end of a wire, ignite by the flame of a match, and plunge down into the flask; the magnesium