

will lie on a ten-cent piece; transfer the powder to the bottom of a *hard glass* test-tube, by holding the test-tube in a horizontal position and sliding the paper into it; then turn the tube upright and withdraw the paper. Make a test-tube holder by folding a sheet of paper into a narrow band and doubling it over the tube; place the paper band near the open end and hold between the thumb and finger of the left hand. Now, holding the tube in a horizontal position, heat at first gently, and then strongly, gently rotating the tube with the right hand, and always keeping well in the flame the end containing the solid. Occasionally thrust a long pine splinter, glowing at the end but not blazing, well down into the tube, until there is evidence of something besides air in the tube. When this stage is reached, insert a rubber cork with a delivery tube and collect, in the ordinary way over water, a test-tube full of the gas which comes off. Let this stand over water and continue heating the mercury oxide until the red powder has almost completely disappeared. Then scrape out some of the contents of the tube with a knife and examine it on paper. Examine the gas in the test-tube as to colour and smell. Is it very soluble in water? Place the thumb of the left hand over the mouth of the test-tube full of gas, lift from the water, turn with the mouth up, and plunge into it a long glowing (not blazing) splinter of wood. What is the metallic liquid left in the tube? Is the gas collected ordinary air? How does it differ from air? If this gas came off the red powder and left mercury behind, and the red powder was formed by heating mercury in air, is this gas a constituent of the air?

Now the class should see that one of the constituents of air has been isolated. Inform them that the name of this constituent is oxygen, and when other substances, as