

Unitarian minister, named Joseph Priestley, who was very fond of making chemical experiments in his spare time, particularly with gases and things that would yield gases; and someone, knowing his fondness for examining new substances in this connection, sent him a sample of this red calx of mercury, or red precipitate, as it was called. On the 1st of August, 1774, a very important date in the history of chemistry, he heated some of it in a vial, and what was his amazement to see little drops of mercury produced on the sides of the vial just above the heated part and an invisible gas bubbling off from a tube fitted to the vial and dipping under water. He had broken the red precipitate up into the original mercury and the something else from the air which it had combined with when "burned," and the most striking property of the gas he found to be that it would cause a glowing splinter of wood, when plunged into it, to burst into flame and burn with great brilliancy.

EXPERIMENT.—In a hard-glass test-tube place a gram or two of mercuric oxide (red precipitate), and heat carefully. Note the appearance of drops of mercury on the upper part of the walls of the tube where they are not very hot. Introduce into the tube immediately after heating a glowing splinter (not flaming) of wood. What happens? Is the gas coming off combustible, or does it support combustion? How does it compare with air in this regard?

In accordance with a theory held at that time, Priestley called the gas "dephlogisticated air," but it was afterwards named oxygen by the great French chemist Lavoisier, who also showed that the weight of the red precipitate exactly equalled that of the mercury plus that of the oxygen:

Calx of mercury = mercury + oxygen.

This same sort of thing has since been shown to be true in the cases of the other calces and water and carbon dioxide, as we shall see later.