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**The young man's book of amusement**

**Halifax, 1848**

To Shew the Combustion of Zine in Oxygen Gas

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*To Exhibit the Combustion of Phosphorus in Oxygen Gas.*

Place a piece of phosphorus about the size of a small pea in a copper cup, about the size of a button, fastened to a thick iron wire, the other end of which is fastened to a cork. Take a bottle capable of containing a quart, and after having filled it with oxygen gas, set fire to the phosphorus, and immediately plunge it into the jar, suspending it by the cork; the light will be so excessively brilliant, that it will be impossible to look at it. This is one of the most beautiful experiments it is possible to exhibit, and the light is the most brilliant that can be produced by art.

*Interesting Experiment on Glow-Worms.*

Place a glow-worm within a jar of oxygen gas in a dark room. The insect will shine with much greater brilliancy than it does in atmospheric air. As the luminous appearance depends on the will of the animal, this experiment probably affords an instance of the stimulus which this gas gives to the animal system.

*To Shew the Combustion of Zinc in Oxygen Gas.*

Take some turnings of zinc, form a ball of it, and affix it to a wire; insert a small bit of phosphorus

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into the ball, set fire to it, and introduce it quickly into the bottle filled with oxygen gas. The zinc will take fire, and burn with a beautiful green flame surrounded by a white one.

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*Another way.*

If a current of oxygen gas be conveyed to filings of the metals, they will burn with great rapidity. For this purpose, fill a large bladder with oxygen gas, and adapt it to a tube; by pressing the bladder, and throwing the gas on a piece of ignited charcoal, on which filings of metal have been put, they will burn rapidly. The filings of metal which exhibit the most brilliant appearances, are those of zinc, copper, antimony, iron, and steel.

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*Astonishing Heat of the Flame of Oxy-hydrous Gas.*

On projecting the flame issuing from the compound blow-pipe, against the outside of a small tinned iron cup, full of cold water, the outside of the cup will become red hot, and at length assume a white heat, not only on its outside, but within, in contact with the water: and in an instant afterwards the flame will break through the side of the cup, and enter the water without being extinguished. The