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The young man's book of amusement

Halifax, 1848

Pure Flame

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a few pieces of zinc, or small iron nails; on this pour a mixture, of equal parts of sulphuric acid, (oil of vitriol), and water, previously mixed in a tea-cup, to prevent accidents. Replace the cork stopper, with the piece of tobacco-pipe in it; the hydrogen gas will then be liberated through the pipe into a small stream. Apply the flame of a candle or taper to this stream, and it will immediately take fire, and burn with a clear flame until the hydrogen in the phial be exhausted. In the experiment, the zinc or iron, by the action of the acid becomes oxygenised, and is dissolved, thus taking the oxygen from the sulphuric acid and water; the hydrogen (the other constituent part of the water) is therefore liberated and ascends.

To Fill a Bladder with Hydrogen Gas.

Apply a bladder, previously wetted and compressed, in order to squeeze out all the common air, to the piece of tobacco-pipe inserted in the cork stopper of the phial, (as described in the experiment above). The bladder will thus be filled with hydrogen gas.

Pure Flame.

Hydrogen gas furnishes the purest flame that can be exhibited; for the flame of bodies that emit much light derive that power from solid bodies intensely

ignited, and diffused through them, and which, in ordinary flames, as of gas, tallow, wax, oil, &c. consists of finely divided charcoal.

Inflamed Soap Bubbles.

With a pair of bellows, half fill a bladder, having a stop-cock, with common air, and fill the other half with hydrogen gas: screw a brass tobacco-pipe to the stop-cock, and dip it into a basin of soap-lather. When the bladder is pressed, bubbles will rush out, to which apply the flame of a candle; and they will explode with great violence. Let the bubbles be detached from the bowl of the pipe, before they are inflamed, or else the flame may rush into the pipe, and burst the bladder.

Exploding Gas Bubbles.

Put a small quantity of phosphorus and some potash, dissolved in water, into a retort; apply the flame of a candle or lamp to the bottom of the retort, until the contents boil. The phosphuretted hydrogen gas will then rise, and may be collected in receivers. But if instead of receiving the gas into a jar, you let it simply ascend into water, the bubbles of gas will then explode in succession, as they reach the surface of the water, and a beautiful white smoke will be formed,

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