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*ARGON: A NEWLY DISCOVERED CONSTITUENT OF THE ATMOSPHERE.

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Our first knowledge regarding the chemical constitution of the atmosphere may be said to date from Priestley's time. In 1774 this English chemist discovered Oxygen by the experiment, now historical, of heating the red oxide of mercury by means of the sun's rays, collected and focussed by a burning glass. He worked out somewhat its chemical properties and made known its essential characteristic as the great supporter of animal life and of combustion. He termed it "*Dephlogisticated air*," because, as he said, "it is so pure, so free from phlogiston,"—the hypothetical principal of inflammability of an obsolete theory.

Two years previously, Rutherford, Professor of Botany in Edinburgh, had experimented with the residual gas produced by respiration of animals in closed vessels containing air. He found it to contain a gas (carbonic acid) that could be absorbed by caustic potash and further a colourless gas, which could not thus be absorbed, that extinguished the flame of a candle and did not support animal life. This was the discovery of phlogisticated air or Nitrogen.

Scheele, a Swedish chemist, was, perhaps, the first to recognize clearly that the atmosphere consisted of these two gases. He confirmed the results of Priestley and Rutherford, bringing them together and establishing from them the dual character of the atmosphere.

So far, however, all the work was of a qualitative character. Cavendish, another English chemist (1731-1810), was the one who established by careful, thorough and skilful quantitative work the com-

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