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PRIESTLEY, SEER OF AIR

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EVERY physician who administers oxygen, every dentist who gives a whiff of laughing gas, every layman who takes a sip of soda water in midsummer, owes something to Joseph Priestley, scientist and odd genius.

Chemists always have something to say about him in August, and this year they are talking more than their wont, because on the first day of the eighth month, 1774, he discovered oxygen. So 1927 A. D. marks the 153rd anniversary of that epoch making event.

Priestley was most happy when he was in a fight. His temper was ever a fiery one. If it had not been, the world might have missed many things which he gave it. He tried to be a preacher, but his theology was so radical that he could not enter any formal church and started an independent congregation in Birmingham.

His views on politics and social matters were just as pronounced. He brought on himself the rage of his fellow citizens by his much too frank opinion of them in a little book called "Familiar Letters on the Inhabitants of Birmingham", and followed that up with an attack on kings and their ways. He was leading all competitors for the unpopularity contest, when July 14th, 1791, the anniversary of the French Revolution and the fall of the Bastille, he had a real housewarming party. A mob burned down his little church, and also his home, in which were his library, his apparatus, and the records of his researches.

Then he sailed for America where he arrived after a stormy voyage of two months, and found peace for a time in Philadelphia. Priestley knew Benjamin Franklin whom he had met through their common interest in electricity, and through him came in close touch with the American Philosophical Society "Old Ben" had founded. Through that learned organization he communicated some of his most important discoveries.

Declining the presidency of the University of Pennsylvania, Priestley retired to the little town of Northumberland, Pa. It was in Northumberland that Priestley died and there he was buried in an old churchyard. A movement was recently started to move his house to the campus of the Pennsylvania State College.

It will be remembered that in 1776, Priestley discovered nitrous oxide, or laughing gas, which soon was used as a mild anaesthetic. He made hydrochloric acid and ammonia known to the world and told it, for the first time, what carburated hydrogen was. To him also goes the credit for the discovery of carbon monoxide. His researches indicated that nitric acid is formed by passing of electric sparks through the air, and thus he was the pioneer of "air mining", for he made possible the fixation of atmospheric nitrogen.

To this great leader in the realm of pneumatics, we owe the beginnings of many industries which depend upon the use of gases. His analyses of the air started the investigations which resulted in others finding rare elements, such as the helium, which, almost as light as the inflammable hydrogen, but as flame proof as nitrogen, enables the airship Shenendoah to be proof against lightning and fire. He pointed the way to the use of the so-called poison gases in chemical warfare and for medicine and industry. Year by year, Priestley is getting more and more up-to-date—not only in his chemistry, but in his politics and theology.

His discovery of oxygen, by which he is best known, demolished a time-honored theory over which scientists puzzled so many years. In order to account for the burning of things, Stahl, the noted chemist and physician, assumed that there was a subtle fluid which combined with ash in inflammable bodies, and escaped when combustion occurs. The flame and the heat was, according to this view, the effort of the phlogistin, as Stahl called it, to free itself from an affinity. In fact, Priestley called oxygen "dephlogisticated air" at first. The investigations of Scheele, the Swedish chemist, and of Lavoisier, the French scientist, who were also working on the theory of combustion, swept aside the picturesque but unsound ideas of Stahl and showed that burning was due to the effect of the oxygen in the air. Of course, their views were bitterly opposed by prejudiced followers of the old idea. The controversy of the "pros" and the "antis" over phlogistin was in fact one of the bitterest which marked science in the eighteenth century. The upholders of the Stahl theory were called phlogistians; the opponents anti-phlogistians, and both names are in modern lexicons.

The name phlogistin, derived from the Greek word, meaning to burn, or to be inflamed. In these days there has come into the dictionary, antiphlogistine, the designation of a mineral poultice in inflammation. The remedy in itself is a protest against an unsound practice which research has proven harmful—blood letting. At one time, even learned men maintained that phlebotomy was justified. Modern science has shown that the congestion due to too much fluid can be relieved without recourse to the lancet—and out of that discovery a new term has come into the vocabularies of many nations.

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A smile might lighten the failing heart,  
A word may soften pain's keenest smart,  
A touch may lead us from sin apart  
How easily either is given.

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The oldest architectural ruins in the world are believed to be the rock cut temples at Ipsambul, on the left bank of the Nile, in Nubia.

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By a patient loving endurance of annoyances are we preparing ourselves gradually for the discipline of trials.