

Story of Air

Back in the 1700's there was a whole lot of important stuff going on, a bunch of colonies were becoming states, France was chopping people's heads off¹, and Isaac Newton just figured out about gravity and was dropping that on the science world². Ben Franklin was busy being brilliant making glasses and playing with lightening³. Charles Darwin was evolving some big ideas as he was floating around the Galapagos Islands⁴.

So, if you missed this story I will have to forgive you, but it's too bad because this is a really good one. And it's 90% true.

It's about this guy named Priestly; Joseph Priestly. Which is a funny name because he was kind of a priest. He was a minister in the Church of England. So, Pastor Priestley's a fun guy and almost everyone likes Joseph, he's smart he's gregarious, he's funny. Joe gets posted to a community church in England that has two qualities that will make it very important to pastor Joe. One the church is small so there is not a lot to do. Second, there was a brewing house or tavern just across the street.⁶

Now not much to do meant that Pastor Priestly could spend plenty of time on his hobby; Science. More specifically, scientific observation.⁷

Watching stuff happen and writing it down, then watching what doesn't happen and writing that down, then writing down his thoughts about what happened and what didn't happen.

He played with electricity for a while and wrote down what happened when you electrocuted stuff.⁸

He played with flame and fire a bit trying to make good guesses about why different stuff makes different colored flames. Then he wrote down what guesses were good and why and what guesses were bad and why.⁹

Basically he was a grown-up that played around with science stuff the way most kids want to, he just also wrote everything down.

Like anybody else that is willing to put serious time and energy into something Joe gets to be good at that science stuff and other sciency types respect that and read some of that stuff he's writing. He writes letters back and forth with several very impressive scientists.

Now is when things start to get a little hinky because in Mr. priestly start to play with air.

He puts mice in jars and watches them, then he writes down what he saw. They died.

The he realizes his stupid mistake and he corrects it and trys again, this time he drops the mouse and a scrap of bread in the jar and seals it up all nice and tight and watches... it died too.

Joe makes a strong well thought out theory. Mice are allergic to glass.

So... on to frogs.

He puts frogs in jars and watches them, then he writes down what he saw. They died.

Then he realizes his stupid mistake and he corrects it and tries again. This time he drops the frog in the jar with some flies and seals it up all nice and tight and watches... it died to, along with the flies.

Then the parson Priestly makes another strong reflective logical deduction. It's not about the glass.

He is stumped. He is stymied and stupefied. So he does what any smart person does when he is stuck.

He asks for help. In fact he asked good friend and pen pal Benjamin F. Franklin or his BFF...BFF¹⁰

He did not stop trying, he knew he was missing something so he tried again, carefully writing everything down. He noted that bigger animals died faster than smaller ones,

He thought about light... he noted that putting them in the sunlight did not change anything over keeping them in the closet.

He thought about water: wet animals did not last longer than dry animals (except for frogs of course)

He tried fire. He put a little bity candle in with the mouse.

That was really hinky because the mice died faster. In fact, they died as soon as the flamed died.

He wrote that down, thought about it, and asked questions that made others think about it too but mostly they just agreed that it was hinky.

He lit candles in the jars to burn off, clear out, or unmojo them, he let the candle burn out completely dephlogesticating the jar and the air inside it.

Then he held the jars upside down underwater and put the animals in. A little wet maybe but, whatya-gonna-do.

Okay now here is where we lose people because this next part is going to sound crazy and stupid and confused all at once so you will want to give up on me...

In the 17th and 18 century people believed in this thing called phlogiston, they thought it was what made stuff burn.¹¹

PHLOGISTON is this thing... what everyone thought was this thing that made stuff burn. If something was phlogisticated it burned if it was dephlogisticated it did not burn.

So what the honorable Mr. Joseph Priestly did was dephlogisticate the air.

Now with this new question rolling around and bumping into the other one about why glass jars kill small animals things start to happen. Priestly is still not at all clear what is happening, but he keeps writing everything down and he keeps thinking and questioning.

He start all the experiment over with jars of dephlogisticated air. Things are exactly as he, and probably you, predicted. They all die just faster than before.

He wrote about how frustrated and annoyed and angry he was that he could not understand this.

Dearest BFF

“EVERYTHING I put in a jar dies.”

He pulled up a start from a mint plant in his wife’s garden. Sets it in a jar to try that.....

He waits. Because plants do not die as quickly as mice. But while he waits you know what he does ... He writes...

But here is the thing. The mint did not die.

Now he was getting somewhere.

He had absolutely no Idea where he was getting but he was definitely moving.

Questions and ideas and theories and writings are popping up all over the place. This phlogiston theory is falling apart but Priestly is building his own theory about something he likes to call oxygen.

Joe learns that animals placed with mint plants don’t die.

Priestly will play with his oxygen ideas for several more years.

The good Reverend Priestly and Ben lose contact because around 1774 England and the US are not exactly BFF’s.¹² But other scientist read his work and add their ideas.

- The idea that air is made up of different things, at least one of which is oxygen
- Animals need that part of air to live.
- Plants somehow make that part.

But thinking about air, something that you can’t see can’t touch, or taste, or even smell is tricky and trying to break that into parts... that is some brainy stuff.

JP changed the way we look at and understand the world.

He was curious and tenacious, and maybe a little weird about trying to kill mice.

But maybe that is what it takes to change the world

Being curious and tenacious ... and weird.