

II. *A Letter concerning a Colliery that took Fire, and was blown up near Newcastle, killing 69 Persons, on August 18, 1708. Communicated by the Reverend Dr. Arthur Charlett, Master of University College in Oxford.*

Chester Le Street, October 8, 1708.

ON *Wednesday* the 18th Day of *August* last, at *Farefield*, in the Parish of *Chester Le Street*, about Three of the Clock in the Morning, by the sudden Eruption of a violent Fire, which discharged it self at the Mouths of three Pits, with as great a noise as the firing of Cannon, or the loudest Claps of Thunder, threescore and nine Persons were destroyed in one instant. Three of them, *viz.* two Men and a Woman were blown quite up from the bottom of the Shaft, fifty seven Fathom deep, into the Air, at a considerable Distance from the Mouth of the Pit. One of the Men with his Head almost off, and the Woman with her Bowels hanging about her Heels.

The Engine, by which the Coals were drawn up, and is of a great weight, was removed and cast aside by the force of the Blast; and what is more wonderful, the Fish, which were in the Rivulet, that runs twenty Yards under the Level, and at as a great a distance from the Mouth of one of the Pits, were in great Numbers taken up dead, floating upon the Water, by several of the Inhabitants. Now whether this happen'd by the violent Concussion of the Air, or they were choaked with the Sulphur, that, to be sure, in abundance dispers'd it self abroad, I must leave to you and the Ingenious Gentle-

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men of the *Royal Society* to determine ; only I shall tell you, that for several Days a very strong and noisome Smell continued to come out of the Pits.

And that I may give you, Sir, the fullest Account I can of this Fire, I shall endeavour to make the best Conjecture of the Cause of it, that I can draw from the Report or Experience of the Men entrusted with the Management of the Colliery, who being above Ground that Morning, shared not in the common Calamity. In order to which I must acquaint you with the Nature of Coal Mines, which are in general subject to Stith or Sulphur.

Stith, as vulgarly so called by the Pitmen, I think corruptly from Stench, or Stink, is a want of Air, or rather such a Foulness in the Air, that overcomes the Spirits of the Men, and so suffocates them, as well as extinguishes the Candles.

Sulphur differs in this, that as the other suffers not the Candles to burn, this makes them burn too fast ; and the Flame by the impulsive Quality of the Air, or attracted by the Sulphur, extends it self upwards into a prodigious length, and, as a Match lighted for the Discharge of a Cannon, as speedily sets on Fire that Vapour, equally destructive.

Now to prevent both these Inconveniences, as the only Remedy known here, the Viewer of the Works takes the best care he can to preserve a free Communication of Air thro' all the Works ; and as the Air goes down one Pit, it should ascend another ; but it happen'd in this Colliery, that there was a Pit which stood in an Eddy, where the Air had not always a free Passage, and which in Hot and Sultry Weather was very much subject to Sulphur : and it being then the middle of *August*, and some Danger apprehended from the Closeness and Heat of the Season, the Men were with the greatest care and caution withdrawn from their Work in that Pit,
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and turned into another ; but an Overman, some Days after this Change, and upon some Notion of his own, being induced, as is supposed, by a fresh, cool, frosty Breeze of Wind, which blew that unlucky Morning, and which always clears the Works of all Sulphur, had gone too near this Pit, and had met the Sulphur just as it was purging and dispersing it self ; upon which the Sulphur immediately took Fire by his Candle, and so he proved the occasion of the Loss of himself and so many Men, and of the greatest Fire that ever was known in these Parts.

III. *An Account of the Success of an Attempt to continue several Atmospheres of Air condensed in the space of one, for a considerable time. By Mr. Fr. Hauksbee, F. R. S.*

March 30, 1708.

Injected with my Siringe into a very thick Flint-Glass Bottle, (which I had procur'd to be made on purpose for the Experiment) between four and five Atmospheres of Air, as the included Gage demonstrated, which continu'd in that State till about the 7th of *August* following ; when looking on't, (as usually once in four or five Days) I found that the Air Injected at the prementioned time, had made its Escape, the Weather for a Week before (or thereabouts) having been very hot ; especially one Day I observ'd the Spirit in the Thermometer had ascended one hundred and twenty Degrees above the Freezing Point. And notwithstanding the Bottle was continually kept under Water, yet the Ce-
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