

July 22, 1842

"RECORD OF EXPERIMENTS"

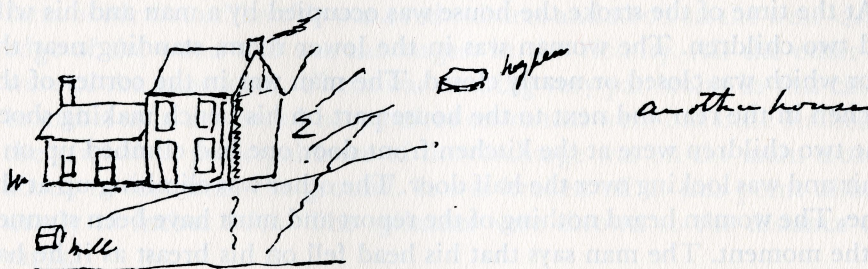
Henry Papers, Smithsonian Archives

July 22nd 1842

Account of House struck by

Lightning July 9th 1842¹

Visited this afternoon in company Arch^d Alexander M D² a house struck with lightning near the plain Tavern about 4 miles south east or perhaps nearly east of Princeton on the morning of July the 9th at about 10 o'clock. I regret that I did not go soonner to inspect the building <since> because the house has been since partially repaired although the greater effects are still visible.



The house is a tall narrow two story one with a kitchen on the west side. It stands on the road with a small court yard in front nearly east and west. The lightning struck the chimney of the house part of the lightning passed into the chimney and down it about 3 feet and then burst through to the front <corner> edge down which was a tin water conductor. The principal part of the discharge passed down the corner post of the frame of the building and almost completely destroyed it, throwing some parts of it into the yard to the east to the distance of 20 yards and even pieces of the clap boards were thrown off with such force as to fall on the house to the east at the distance of 35 yards. The principal part of the discharge passed down the corner post and perhaps along the gutter and then appears to have scattered in every direction along the surface <which> of the ground which was flooded with water at the time. Around the house, in every direction, to the distance of 20 yards, marks on the vegetation of its passage were visible. At the distance of about 22 yards to the NE of the house, two pigs

¹ This heading has been moved from the top of the following page of the entry.

² A resident of Princeton, Archibald Alexander, Jr. (d. 1882) was the son of the Reverend Archibald Alexander (*Henry Papers*, 2:437n-

438n). He had received his medical degree from Jefferson Medical College in 1836, the same year that Princeton granted him an honorary Master of Arts. *Princeton Catalogue*, p. 415; *Hageman*, 2:348.

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were killed out of seven in a pen. A part of the discharge passed along the ceiling of the garret or rather of the floor of the garret of the main building and then through the garret of the kitchen—in which some pieces of stove-pipe were placed at the time—to the chimney of the kitchen. In its passage it threw off *<all the>* a great part of the plaster from the ceiling of the upper room.

Either the explosion of the main discharge or the part which passed to the kitchen excited such an expansive influence on the air in the small garret that the whole roof was lifted from its place and all the rafters unloosened the shingles were torn up and the whole effect resembled the operation of a quantity of confined gun-powder. Nearly all the panes of glass in the house were broken.

At the time of the stroke the house was occupied by a man and his wife and two children. The woman was in the lower room, standing near the door which was closed or nearly closed. The man was in the corner of the kitchen in the rear and next to the house part on his bench making shoes. The two children were at the kitchen front door one had climbed up on a chair and was looking over the half door. The other was climbing up at the time. The woman heard nothing of the report and must have been stunned at the moment. The man says that his head fell on his breast as if he had suddenly lost the power of sustaining it. He thinks that he raised it immediately but cannot be certain. When he looked up the children were both jumping up and down on the floor but did not exhibit any signs of having been affected by the lightning. The woman did not complain of any effect and the man was affected so slightly as to suffer but little inconvenience although he thinks his head has not been as steady since the time of the accident.

A small part of the discharge passed down the well since a small hole was observed on the crib.

There was a stove in the fire place of the kitchen, with a pipe reaching up about a foot into the flue of the chimney. There probably was fire in the stove at the time but the heated air from this must have been very small and overpowered by the falling rain. A small quantity of plastering is knocked off in the inside of the kitchen chimney opposite the top of the stovepipe.

The most surprising part of this exhibition of the electrical discharge, is the fact that the corner post of the buiding was destroyed although the tinned iron gutter which was parallel to it *<and>* was at the distance of less than a foot. I am not sure however that that part of the post was as much injured which was opposite the gutter as that above and below the extremities of the metal. The gutter was burst open at top in a hole of about $\frac{3}{4}$ of

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an inch in diameter with a large bur outward. The white paint on the tin was not disturbed on the foreside of the tube but appeared to be a little blackened on the back side or that nearest the house.

The discharge appears to have been *<an>* exceedingly powerful and to have spread in every direction over the surface of the ground. A small quantity entered the cellar but not as much as in the cases of the house I examined last summer.³

The people in the next house perceived the lightning on the hearth in the form of a ball as large as a water pail according to the account of the shoemaker

We also visited a tree which was riven by electricity about a week after the house was struck. It was about a mile from the Plain Tavern on the farm of Mr Grundiker.⁴ It was a red oak tree and stood on the west *<side>* edge of the wood and was the largest in the vicinity. All the other trees were of the same kind. There was nothing very particular in this case the branches as in the trees I have before examined were but little scathed and the *<whole>* principal force of the discharge was on the main trunk, at about 12 feet from the ground. It was broken off at this point although nearly 18 inches thick. The splinters were thrown to the distance of 75 yards.

For an account struck with lightning see *Edinburgh Phil Jour* vol VI 379.⁵

³ See the "Record of Experiments" entries of July 15 and 16, 1841, printed above.

⁴ Not otherwise identified.

⁵ A reference to an account of the effect of lightning upon a house in Geneva. *Edinburgh Philosophical Journal*, 1822, 6:379-380.

Henry subsequently added two additional paragraphs to this entry, summarizing the account of lightning striking the Cathedral of

Strasbourg on July 10, 1843, published by A. Fargeaud under the title "Note sur les coups de tonnerre qui ont frappé la cathédrale de Strasbourg le lundi 10 juillet 1843, à une heure et demie après midi," *Comptes rendus*, 1843, 17:254-260. He had read this account on October 28, 1843. See the "Record of Experiments" entry of that date, below.