

“The Autograph of an Electric Spark.” *Boston Sunday Journal: Fifth Section—Photographic News and Music Portfolio* (Boston: October 23, 1899), pp. 1, 3.

THE AUTOGRAPH OF AN ELECTRIC SPARK.

Discovery of Electrography, a New Art That Upsets Some Notions Concerning the Character and Conduct of Lightning—The First Pictures of the Kind Made.

Before a few weeks ago no such pictures as those published on this and the first page of this section had ever been made. The making of them was the discovery of an art hitherto unknown. They are not photographs because they are not produced by the action of light striking upon a plate, though the distinction may be so fine as to be almost Imperceptible to anyone other than a photographer or an expert.

They were produced by forcing a spark of electricity upon the sensitive film that covers a photographic plate, either wet or dry. The making of the white and curiously entangled lines was effected by the electrical action of the current, not by the action of the light from the current.

They are called electrographs, as distinct from photographs.

They were made in the Elmer Gates Laboratory at Chevy Chase, Maryland, and the publication of them is bound to attract the attention of scientists and electricians as well as of photographers.

Included in the number reproduced herewith is the first electrograph ever made. It was produced Aug. 6, last, while pursuing researches in the Elmer Gates Laboratory upon the influence of electricity upon the weather and the planets. Since the discovery considerable attention has been devoted to electrography at the laboratory and some striking results have been produced.

An interesting point to consider is that these electrographs are made without a camera. The electric current is turned directly upon the sensitive film and permitted to follow its own course.

The sparks of electricity were made by either a static machine or an induction coil, but the discharges of the current varied in size and power.

In description of the method by which the electrographs were produced Prof. Gates says: "They are made without a camera and without the light-action required for photography. The electrostatic current on striking the film travels through it because it is a conductor and because the glass plate upon which it is placed is not a conductor. The current selects a number of special and

mutually divergent paths, precipitating the silver as it goes; the result is a picture produced by the electrolytic action of the current and not by the light of the spark.

“Any amateur can make an electrograph with an ordinary dry plate, a light-proof envelope, and either a static machine or an induction coil, and, as the results are often of great beauty as well as of scientific interest, I can imagine that many photographers will make one or more electrographs of their own.

“Put a sensitive plate inside a light-proof envelope or paper, or between two sheets of black paper with the edges folded so as not to admit the light; or better still, take an ordinary X-ray plate, and leave it in the envelope in which it is sold. Hold the plate thus protected from the light between the terminals of a static machine or an induction coil, and allow one single spark to pass between the terminals so as to strike the envelope near the centre.

“It will rupture the paper, strike the film, and in distributing itself in the directions of least resistance through the film will produce an electrograph whose area will vary with the potential of the current, being larger as the potential is higher. It will also vary with the resistance of the film, being smaller as the resistance is greater. The amount of detail will depend on the quantity of the current.

“Placed in the developing solution, delicate tracings of the current shown in the accompanying pictures turn black, while the film is cleared from the surface of the plate unaffected by the current.

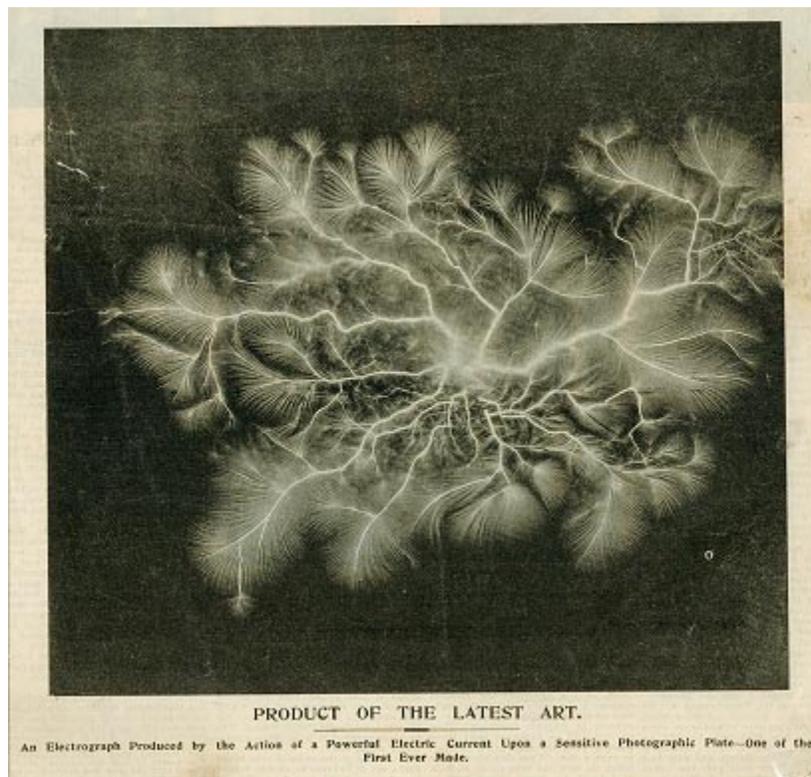
“This discovery is destined to aid in unraveling some of the mysteries of electricity. It had been believed by electricians that the electric current distributed itself uniformly throughout the conductor. The autobiography of the current here reproduced upsets that theory, for it shows that the current selects a number of separate and diverging paths.”

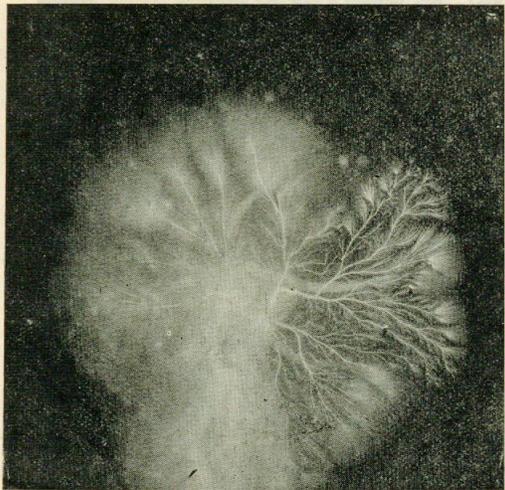
Prof. Gates’s experiments have upset some popular impressions. It was supposed that the course of a lightning flash was not crooked as it appears to the eye, but straight; that the crooked effect was produced by the irregular background of the clouds. That this is likely to be a fallacy is shown by a picture of the course of an electric spark, made by Prof. Gates using a camera as in the making of an ordinary photograph.

In some sections of this country the belief obtained that a bolt of lightning will make a photograph upon the body of the person whom it strikes. One instance in which this was apparently proven occurred in Washington not long ago, when the body of a man killed by lightning was found to bear one of those peculiar marks.

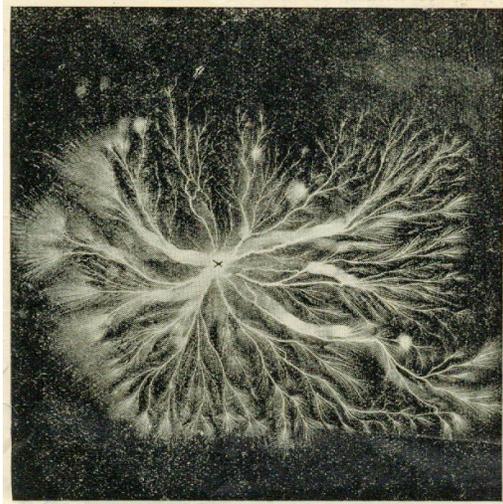
In form it resembled a tree. In consequence the story was given circulation that the picture of a nearby tree had been

photographed upon the body of the man by lightning. How easily the mark of the lightning in striking the body could have been mistaken for a tree is illustrated in the picture published on the first page of this section.

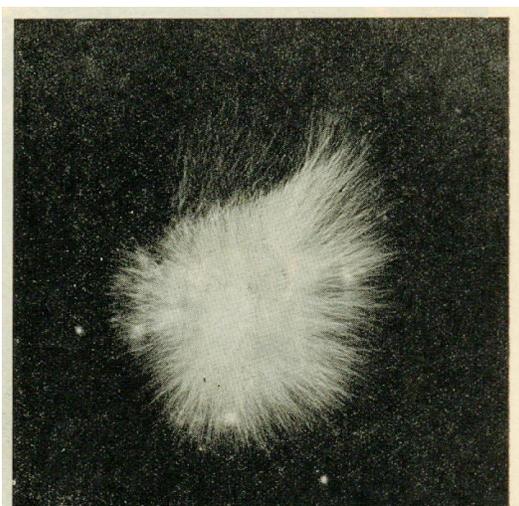




FIRST ELECTROGRAPH EVER MADE.
Accidental picture produced during researches
anent the influence of electricity upon the
weather.

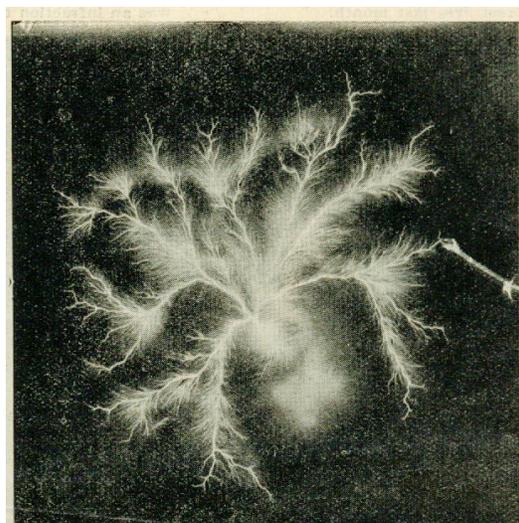


MADE BY A SIX-INCH SPARK.
This is one of the most beautiful effects of elec-
tric current on a sensitive photographic plate
—Anyone might make a similar picture.



IT CAUGHT THE FLASH.

To make this picture the discharge from the brush of a static machine was allowed to strike a sensitive photographic plate.



NEW ELECTRICAL WONDER.

Effect of a two-inch electric spark forced into a photographic plate—Shows the influence of a small spark.