JOSEPH SAXTON: PENNSYLVANIA INVENTOR AND PIONEER PHOTOGRAPHER

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As photography enters into its second century of existence it finds us regarding its past achievements as commonplace. Nor do we give much thought to its future, for such marvelous developments in the past have caused us to accept any later perfections with no surprise whatever. When we view the motion picture of today with its beauties of technicolor, as well as the voice which has been given it during the past two decades, we are inclined to believe that perfection has been reached. Little did the Frenchman, Louis Jacques Mande Daguerre, inventor of photography, dream of the possibilities when he made his great achievement known on January 7, 1839.

When his secret was announced in America, months later, photography in this country at once started on its way of development. During these years of notable accomplishments, many Americans have played a part in the development of this wonderful art. A native of Huntingdon county, Pennsylvania, Joseph Saxton stands secure in his claim to the title of "Father of American Photography."

When the hundredth anniversary of American photography was observed some months ago, however, little attention was paid to Saxton's great accomplishment in making the first photograph on this side of the Atlantic. This Pennsylvanian has been described as one of the greatest of American inventive minds. When a list of the inventions which he had given to the world is reviewed, one is amazed, not only at his notable achievements, but that such a famous person should be practically forgotten.

On October 15, 1839, the *American Daily Advertiser* acquainted the citizens of Philadelphia with the process of Daguerre. The time necessary to take a picture was reported as being over an

hour. This announcement met with a certain amount of ridicule, as well as much unbelief; many doubted that such an accomplishment was possible. By Joseph Saxton the announcement was received far differently. At that time he was an employee of the United States Mint in Philadelphia. Setting to work at once, he evolved a crude apparatus from the meagre description given from Paris of Daguerre's method in transferring the image of an object on to a polished metal plate for future preservation. That this experiment was highly successful has been attested by that able historian of other days, Julius Sachse. It is also indicated by a double-page advertisement of the John Wanamaker store which appeared in the press of Philadelphia more than a half century later.[1] This read as follows:

> The first photograph made in America was a view taken on a sheet of polished metal from an upper window of the U. S. Mint, by Joseph Saxton, October 16, 1839 —the day after the different accounts of Daguerre's process were published in Philadelphia. A seidlitz powder box, with a few flakes of iodine, answered for a coating box; while a cigar box and burning glass were improvised for a camera. An iron spoon served to heat mercury to develop the plate. The result was a picture showing a portion of the State Arsenal and the Philadelphia High School which then stood on the site now occupied by Wanamaker's.
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> A copy of the original picture, made for us by Julius F. Sachse, editor of American Journal of Photography, is shown today with Photographic Goods, Juniper Street side; which by a strange coincidence are on the exact spot whereon stood the buildings shown on that first picture.

The genius of Saxton is here apparent. One day after the account of the Daguerre process was published, he had produced a picture with the contraption which had been hurriedly arranged. Crude it was, but highly successful. The *United States Gazette* on October 24, 1839, told of this experiment in the following manner:

> There was on Tuesday (the 22d) exhibited to us a photographic plate of the Central High School taken by

[1] October 7, 1895.

> Joseph Saxton. It is the first attempt, and is sufficiently successful to demonstrate the beauty of the art when perfected; and we add that the success also shows the art to be quite susceptible of great and immediate improvement.

This historic old plate is now in the possession of the Historical Society of Pennsylvania. Saxton lost no time in contributing his share toward "great and immediate improvement," as the following early facts on photography from the *Encyclopedia of Philadelphia* will show:

> Joseph Saxton (1799-1873) an employee of the Philadelphia Mint, made the first heliograph (Daguerrotype) in America, October 16, 1839.
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> Robert Cornelius, a Philadelphia lamp manufacturer, obtained the first picture of a human face ever taken by the Daguerre process, November, 1839. In February, 1840, he opened the first photograph studio in the world at the northeast corner of Eighth and Ranstead Streets.
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> Dr. Paul Beck Goddard (1810-1866) of the faculty of the University of Pennsylvania, discovered the use of bromide as an accelerator in photography, December, 1839, and was the first person in the world to obtain instantaneous pictures by this process.
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> In December, 1839, William G. Mason (1797-1872), made the first perfect picture by aid of artificial light.
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> In 1841, Joseph Saxton produced the first photo-mechanical reproduction for use with printer's ink. It was used to illustrate the book by Eckfelt and DuBois, entitled, "Manual of Gold and Silver Coins."[2]

The source just quoted not only shows Saxton to be the leader of these early pioneers, but should establish the fact that Philadelphia was the birthplace of American photography.

We are also told of Saxton's part in early photography by J. Simpson Africa, historian of Pennsylvania's famed Juniata Valley. Mr. Africa was born in Huntingdon, Pennsylvania, which was also the birthplace of Saxton, in 1832. In his "Local History of Free Masonry," Africa states:

> Joseph Saxton, one of the most distinguished men of "old" Huntingdon, a son of James Saxton, was born in

[2] *Encyclopedia of Philadelphia* (Harrisburg, 1933), IV, 998.

> the home No. 426 Penn Street, yet standing. He learned the silversmith trade in his native town. He became an employee of the U. S. Government, first in the Mint at Philadelphia and later in the Coast Survey office. He was the first man in America to produce a daguerrotype. The writer, then in his early boyhood, distinctly remembers Saxton taking a daguerrotype plate of the Juniata, looking eastward from the old Academy building at Allegheny and Second Streets. Joseph Saxton was a grand uncle of Ida Saxton McKinley, wife of President William McKinley, who now occupies the White House.[3]

Saxton was born March 22, 1799, and before he had left his native Huntingdon in 1817 various opportunities had been afforded him to display his inventive inclinations. His father was the owner of a nail factory which is claimed to have been the first within a wide radius of that section of Pennsylvania. Here Joseph began his labors at an early age, and in a short time found methods to improve the nail making machinery which greatly added to the efficiency, as well as financial earnings of his father's establishment. John and Joshua Saxton, Joseph's brothers, learned the printing trade on the Huntingdon *Gazette* and afterwards went to Ohio, which then offered flattering inducements to settlers. John established the Canton, Ohio *Repository* in 1815.

Joseph Saxton soon tired of the position in the nail factory and was later apprenticed to a watchmaker of the town. During his spare moments in this new occupation occurred an event which was to have world-wide effects. He had become the possessor of a new rifle. On loading it for the first time, he was surprised to find upon pushing down the ball with the ramrod that it sprang back in one instance with such velocity as to project the ramrod from the barrel. Determining to force down the ball he placed the rod against the trunk of a tree, and with the momentum acquired by the weight of the gun, gave a powerful push. The ball was indeed forced in, but in overcoming the resistance, an explosion took place which shattered the ramrod and prostrated young Saxton, almost lifeless, upon the ground. This episode furnished the young inventor much food for thought which led

[3] This study appeared serially in the Huntingdon (Pa.) *Globe,* during 1898.

him, years later, to evolve the metallic cartridge, thereby revolutionizing the world's weapons.[4]

Having reached the age of eighteen, in 1817, Saxton decided that other fields offered greater opportunities, so in a boat of his own construction, and accompanied by two companions, he embarked from Huntingdon and floated down the Juniata until the broad expanse of the Susquehanna was reached. Continuing down this stream as far as Harrisburg, he disposed of the boat for ten dollars. From this point the party continued on foot to Philadelphia, where Saxton and his companions separated. Armed with a letter of recommendation, Saxton called upon a jeweler on Chestnut Street and was immediately employed.

The Juniata Valley youth had been in Philadelphia but a short time when his new friends became aware of his wonderful genius. After being employed as a watchmaker he gave this up to become an engraver. In this employment he learned to draw with facility, and to sketch from nature with considerable effect. While there he invented a machine for cutting the teeth of wheels, the outlines of which were true epicycloidal curves.

He next became associated with Isaiah Lukens, a celebrated Philadelphia machinist, and constructed an astronomical clock with a compensating pendulum, and an escapement on a new plan devised by himself. He also constructed the town clock for Philadelphia, which was placed in the belfry of Independence Hall.

With the reputation acquired in Philadelphia, Saxton was elected a member of the Franklin Institute, an establishment just beginning its career. Desiring to increase his field of knowledge, he resolved on a visit to England, which was made possible by carefully hoarding his income. Upon his arrival in London he deposited his funds in a banking-house of that city. This institution failed but a short time later, leaving Saxton stranded in a strange country, without friends or means of support. He soon made himself known at the Adelaide Gallery of Practical Science, by exhibiting scientific novelties. Here he constructed several toys which amazed the London populace, and followed with a compound steel magnet which sustained the weight of 525 pounds. This was

[4] Joseph Henry, "Biographical Memoir of Joseph Saxton," in *Biographical Memoirs, National Academy of Sciences* (Washington, 1877), I, 291.

succeeded by a magnetic needle several feet in length with a mirror on its end, which exhibited for the first time by the movement of a reflected beam of light on a magnificent scale the daily and hourly variations of the magnetic force of the earth.

Saxton's fame in England grew by leaps and bounds and he was soon acquainted with the leading engineers and mechanicians of the day, and by them introduced into the meetings of the Royal Institution. Here he met and became a friend of the world-renowned Michael Faraday. He was soon to construct a magneto-electric machine which was to be the ancestor of the present day generator. This machine is now on exhibition at the Franklin Institute in Philadelphia.

> This apparatus, one of the first two or three magneto-electric machines constructed by their inventor, Joseph Saxton, is to be part of the permanent exhibit in the electrical power division in the new Benjamin Franklin Memorial now being built on the Parkway.
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> This modest piece of mechanism, the result of countless experiments, not merely by Saxton, himself, but in fact of many men from the time of Thales of Miletus, in the Sixth Century before Christ, was, in itself, a forerunner of the gigantic super-electric generators of this day.[5]

Saxton had been in England for some years; he now felt the urge for his native America and decided to return. Many flattering offers were made to keep him in England, but they were useless against the call of his homeland. He returned in 1837, to accept the office of constructor and curator of the standard weighing apparatus of the United States Mint in Philadelphia. His flow of inventions continued, many of them created for the national government.

It would require too much space to list the further notable achievements of this genius until the time he was seized with partial paralysis, about fifteen years before his death, which occurred in Washington, D. C. on October 26, 1873. There can be little question but that Joseph Saxton was one of the outstanding inventive minds of the nineteenth century. It is unfortunate that his achievements have been overlooked. It is especially deplorable that the various historical accounts provoked by the centennial of photography uniformly neglected to mention his original services to that art.

[5] *Philadelphia Inquirer,* November 29, 1931.