

Photographs of Early Ether Anesthesia in Boston

The Daguerreotypes of Albert Southworth and Josiah Hawes

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PUBLICATIONS on the history of anesthesia may have an image of a photograph, engraving, or painting of early ether anesthesia in Boston, Massachusetts. Closer inspection of the photographs in various publications reveals that there are five known photographs that were taken in the original amphitheater (now called the Ether Dome) at Massachusetts General Hospital (MGH). Four photographs (figs. 1–4) were reproduced in a book on the daguerreotypes of Southworth and Hawes.¹ No publication on the history of anesthesiology has reproduced more than three of the five known photographs. Richard J. Wolfe's book on Robert C. Hinckley (1853–1941) and his well-known painting of the first demonstration of ether at MGH contains three of the photographs (figs. 2, 3, and 5) taken at MGH.² Wolfe's later book on William T. G. Morton, M.D. (1819–1868), contains a different set of three photographs (figs. 1–3).³ The five photographs, all believed to have been taken by Southworth and Hawes, have not been published together in any previous publication in the field of anesthesiology or photography.

Albert Sands Southworth (1811–1894) and Josiah Johnson Hawes (1808–1901) were partners in a photographic studio in Boston, Massachusetts, that specialized in the production of daguerreotypes, an early type of photograph. They photographed surgery on several occasions at MGH. They also produced portraits of individuals associated with early ether anesthesia in Boston. Their photographs are unique records of the momentous events in Boston in relation to the administration of ether by inhalation.

Four of the five photographs were probably taken in April 1847, nearly 6 months after Morton's first demonstration of ether anesthesia at MGH. Ether was by then being used else-

where in the United States and in Europe. However, there are no earlier known photographs of ether anesthesia. Therefore, the photographs of Southworth and Hawes are the earliest known photographs of ether anesthesia and among the earliest known medically related photographs.

This article will discuss the history and technique of the daguerreotype, the partnership of Albert Southworth and Josiah Hawes, and all five known photographs taken by Southworth & Hawes in the Ether Dome at MGH. The five photographs are published together for the first time. Their incorrect descriptions in previous publications are also documented. Many of the published interpretations were by photo-historians who may not have been familiar with the history of ether anesthesia or the physicians involved in early ether anesthesia.

The Daguerreotype

The daguerreotype was the first commercially successful photographic process. It was described before the French Academy of Sciences in Paris in 1839 and named after Louis-Jacques-Mandé Daguerre (1787–1851). Daguerre was also a painter and the inventor of the Diorama (a theatrical show using painted landscapes).

Joseph Nicéphore Niépce (1765–1833), Daguerre's partner from 1829, also deserves some credit for the development of the daguerreotype. Niépce had tried for many years to produce permanent images by photochemical means. His early attempts resulted in images that soon faded. Niépce's 1825 photograph of an engraving is regarded as the world's oldest known photograph. In 1826, Niépce produced the earliest known permanent image from nature. The photograph, a view from an upstairs window of his country home, *Gras*, in Saint-Loup-de-Varennes, was produced on a pewter plate coated with bitumen of Judea (a tar-like material that hardens on exposure to light) and exposed in a camera obscura* for approximately 8 h.†

The daguerreotype is a direct positive image on a metal plate; there is no accompanying negative. A silver-coated copper plate is polished and then made sensitive to light by exposure to iodine vapor. The plate is exposed to light in a camera obscura and then developed by exposure to mercury vapor. The image is fixed by washing it with a solution of sodium thiosulfate (also known as hyposulphite of soda) and toned with a solution of gold chloride. The first daguerreotypes were exposed to light for

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* A camera obscura is a darkened chamber (box or room) with a pin-hole in one side. Light enters through the pin-hole and an upside-down color image of the outside is seen in the box or the room.

† Web page of Harry Ransome Center. Available at: <http://www.hrc.utexas.edu/exhibitions/permanent/wfp/>. Accessed January 19, 2009.

up to 60 min. Two- to 3-min exposures were routinely used within the first year of its introduction. Exposure times of less than 5 s became possible when it was discovered that bromine and chlorine increased the photographic speed of the plate. The image on the copper plate is horizontally (or laterally) reversed (*i.e.*, the image is reversed left-to-right) unless a prism or mirror is used. The plates were sometimes colorized or tinted by hand. The plates were usually mounted in decorative frames or cases with the surface protected by glass.

The patent for the process was acquired by the French government and declared “free to the world.” In contrast, William Henry Fox Talbot’s (1800–1877) technique of paper negatives and paper prints (the calotype or talbotype), which was invented at roughly the same time as the daguerreotype, was patented and had significant start-up costs. The disadvantages of the daguerreotype were the labor intensive process, the lack of negatives, and the delicate nature of the image. Daguerreotypes were popular in the United States during the 1840s. They became less popular in the 1850s as other techniques of photography were introduced.

Oliver Wendell Holmes, M.D. (1809–1894), the acclaimed physician, poet, and author, who suggested the term “anaesthesia” for the state of insensibility produced by ether, called the daguerreotype a “mirror with a memory.”⁴

Southworth and Hawes

Albert Sands Southworth (1811–1894) was born in West Fairlee, Vermont. He established himself as a “druggist” in Cabotville (now Chicopee), Massachusetts. Joseph Pennell (1812–1868), a school- and roommate of Southworth, invited him to New York to learn the technique of producing daguerreotypes under Samuel F. B. Morse (1791–1872). Morse had been in Paris in 1839 to promote his invention of the telegraph. While there, Morse had learnt the technique of daguerreotypes from Daguerre himself.

Southworth and Pennell set up their first studio in Cabotville in 1840. In 1841, Southworth moved to Boston, Massachusetts. The studio of A. S. Southworth and Co. was located in the top floor of the Scollay Building at 60½ Court Street, Boston, Massachusetts. From 1842, the studio was listed as being at 5½ Tremont Row. Pennell left in 1843, and from 1844, the business was listed as “Southworth & Hawes.”

Josiah Johnson Hawes (1808–1901) was born in East Sudbury (now Wayland), Massachusetts. He gave up work as an apprentice carpenter and became a self-taught portrait painter. He learned about producing daguerreotypes from Francis Fauvel-Gouraud (also known as François Gouraud) (d. 1847), who lectured and demonstrated the technique in Boston in 1840. Hawes was initially in business on his own. He became a partner of Southworth in 1843. In 1849, Hawes married Nancy Niles

Southworth (1820–1895), the sister of Albert Southworth. Southworth and Hawes were partners in the firm Southworth & Hawes for 19 yr (1843–1862). It is not clear why the partnership ended—it may have ended because of the decline of the daguerreotype. Southworth remained in the field of photography (there are no known examples of his postdaguerreian work) and was later involved in the use of photography in handwriting analysis.¹ Hawes continued working in the photographic studio in Tremont Row until his death in 1901. Late in his life, he was said to be the world’s oldest living professional photographer.⁵

From 1857, the listed address of Southworth and Hawes was 19 Tremont Row. The change in address occurred because the properties in Tremont Row had been renumbered. Coincidentally, this new address was the same as the old address of William T. G. Morton. This has led several historians to incorrectly state that the studio of Southworth & Hawes was above Morton’s dental rooms.^{1,3,6} The Wikipedia Web page on Southworth & Hawes also states that the studio of Southworth & Hawes was above Morton’s rooms.[‡] David Kruh stated in his book on the history of Scollay Square that Morton and Wells’ rooms were at 19 Tremont Row above the studio of Southworth & Hawes.⁷

The renumbering of Tremont Row took place in 1857. Morton’s rooms had by then been closed. The Southworth & Hawes studio, which was at 5½ Tremont Row, was renumbered as 19 Tremont Row. The studio was at the junction of Tremont Row and Brattle Street and looked down Brattle Street. The road where Morton’s rooms had been was now known as Tremont Street. Morton’s rooms had been above the music store of George P. Reed and opposite the Boston Museum.³

Southworth and Hawes were highly regarded for their technical and artistic skills and are now generally acknowledged to have been the most accomplished daguerreotypists in the United States. Their daguerreotypes are now in the collections of several major art museums. In 2005, *Young America*, a major exhibition of the daguerreotypes of Southworth and Hawes, was jointly curated by George Eastman House, Rochester, New York, and the International Center of Photography, New York, New York. § The accompanying book, *Young America*, has approximately 2,000 images of daguerreotypes produced by Southworth and Hawes and is the most comprehensive catalog of their work.¹

In 2002, the work of Southworth and Hawes was commemorated in a stamp issued by the United States Postal Service. The stamp was one of a set of 20 stamps (“Masters of American Photography”) on the 20 most influential American photographers.

The Daguerreotypes Related to Ether Anesthesia

The catalog by Romer and Wallis of the daguerreotypes of Southworth and Hawes has 11 images known to be related to ether anesthesia at MGH.¹ Four images are of daguerreotypes produced in the Ether Dome (figs. 1–4). There are six portraits of three of the physicians associated with early ether anesthesia at MGH. The three physicians are Oliver Wendell Holmes, M.D., John Collins Warren, M.D. (Hersey Professor of Anat-

‡ Wikipedia Web page on Southworth and Hawes. Available at: http://en.wikipedia.org/wiki/Southworth_&_Hawes. Accessed November 6, 2008.

§ Young America Exhibition. Available at: http://museum.icp.org/museum/exhibitions/southworth_hawes/. Accessed November 3, 2008.

omy and Surgery, Harvard University, Cambridge, Massachusetts; 1778–1856), and Augustus Addison Gould, M.D. (1805–1866). The author has also identified Gould in two daguerreotypes that were classified as “unidentified” (no. 798, p. 355 and no. 1709, p. 448–9).¹ Solomon D. Townsend, M.D. (Surgeon, Boston, Massachusetts; 1793–1869), Jacob Bigelow, M.D. (Physician and Botanist, Boston, Massachusetts; 1786 or 1787–1879), and George Hayward, M.D. (Surgeon, Boston, Massachusetts; 1791–1863) can be seen in a group photograph (no. 1721, p. 451) of 12 Boston physicians.¹

Previously unknown images of ether anesthesia may still be discovered, because multiple images were usually taken with each commission. Southworth and Hawes also sold copy daguerreotypes (a new daguerreotype was made by photographing an original daguerreotype) and paper prints of daguerreotypes (a daguerreotype was photographed to produce a glass negative, which was then used to make paper prints). No copies of the daguerreotypes taken in the Ether Dome are known to exist.

Daguerreotypes Produced in the Ether Dome

There are currently four known daguerreotypes that were produced by Southworth and Hawes in the Ether Dome at MGH (figs. 1–4).^{||} Three daguerreotypes belong to MGH Archives and Special Collections and have been on loan to the Fogg Museum, Harvard Art Museum, Cambridge, Massachusetts, since 1979 (figs. 1–3). One daguerreotype belongs to the J. Paul Getty Museum, Los Angeles, California (fig. 4). All four daguerreotypes are whole plates (approximately 16 × 21 cm in size). The daguerreotypes will be referred to as Ether Dome daguerreotypes to distinguish them from other daguerreotypes of patients at MGH.

In addition, the Francis A. Countway Library of Medicine, Boston, Massachusetts, has a paper print of a daguerreotype plate that is not known to exist (fig. 5). This image was not reproduced in the *Young America* exhibition catalog.¹

The five images are all horizontally (or laterally) reversed. The right side of the image is the left side of the room, as observed from the seating area of the amphitheater. In Ether Dome daguerreotypes 2, 3, and 4 (figs. 2–4), John Collins Warren, M.D., appears to be standing on the left side of the patient. He is actually standing on the right side of the patient. In figure 5, the patient has been turned prone and John Collins Warren, M.D., is standing on the patient's left side. This is clearly demonstrated when figure 5 is flipped horizontally (fig. 6). The statue of Apollo (the Apollo Belvedere or Pythian Apollo), part of which is seen in the upper right corner of the daguerreotypes (figs. 2–5), is actually on the left side of the amphitheater when observed by the audience. The different positions of the right

and left lower limbs of the statue provide the best evidence for horizontal reversal of the images. A hand-written note (reproduced in a book by Wolfe²) that is attached to the print of Ether Dome daguerreotype no. 5, ends with the following statement: “The arrangement of the room is reversed in the photograph.” Wolfe also reproduced a photograph of the interior of the Ether Dome showing objects arranged to resemble the daguerreotypes.² However, the horizontal reversal of the images had been overlooked, and the objects were incorrectly placed. The photograph was taken in 1896 for the semicentennial commemoration of Morton's first demonstration of ether at MGH.

It is not clear why the daguerreotypes were produced. They were not used to promote ether anesthesia because the earliest known publication of any of the daguerreotypes was 1897. Photography, like anesthesia, was in its infancy, the preparation of plates was time consuming, and the process required good lighting and stationary subjects. It was not easy to take quick pictures because the photographer had to be summoned to the hospital and had to have several plates already prepared. The daguerreotype was more suited to photography in a well-lit studio or an outdoor setting. Its potential to document events was not yet realized. The Ether Dome daguerreotypes do not record any unusual medical conditions or new types of operations. They may have been made as personal records. There is further discussion of the importance of the daguerreotypes in the sections on the individual daguerreotypes.

Young America, the companion book to the exhibition of the same name, contains a chapter by Lowry and Lowry⁸ on the esthetics, provenance, and publication history of the images produced in the Ether Dome. This chapter is the only known published account of all the Ether Dome daguerreotypes. The discussion of the production of the daguerreotypes is speculative and detracts from some useful information on the daguerreotypes.

The author has identified 37 English language publications (books, journals, newsletters, and magazines) containing a total of 57 reproductions of the Ether Dome daguerreotypes. Books produced in multiple editions were counted only once. Twenty-three of the publications were photography related (35 reproductions), whereas 11 publications were on the history of medicine or dentistry (19 reproductions). There were three publications related to general history (three reproductions). More than 60% (23 of 37) of the publications contained errors in describing or dating the daguerreotypes (table 1).

An attempt was made to identify the individuals in the daguerreotypes. The author found it easy to identify the two senior surgeons, John Collins Warren, M.D., and Solomon D. Townsend, M.D. Also easily identified were Augustus A. Gould, M.D., and two of the recently appointed staff surgeons, Jonathan Mason Warren, M.D. (1811–1867) and Samuel Parkman, M.D. (1816–1854). The author could not identify the junior doctors with certainty. The names assigned to the junior doctors by other authors are listed in the discussion of the individual daguerreotypes. A question mark is placed before some of the names as this author is not convinced of the accuracy of the names. The information provided in this article regarding the possible dates of the photographs

^{||} Mike Robinson (Toronto, Ontario, Canada), a modern daguerreotypist, made two quarter-plate daguerreotypes at Massachusetts General Hospital, Boston, Massachusetts, in 2001. One image was made in a modern operating room, and the other image was made in the Ether Dome. Robinson M: The Making of Twenty Daguerreotypes: A Chronological Account. The Daguerreian Annual. 2000, pp 239–67.

and the patients' histories should be regarded with caution as they are based on conclusions by Lowry and Lowry⁸ that could not be verified. The lack of contemporary documentation of the dates, patients' details, and the people present has resulted in many incorrect interpretations of the daguerreotypes.

Was Josiah Hawes at MGH on October 16, 1846?

Hawes was said to have been invited to MGH on October 16, 1846, to record the momentous day when William T. G. Morton administered ether to Edward Gilbert Abbott (1825–1855) for an operation on the left side of his neck by John Collins Warren, M.D. The earliest account that the author has located is a report of the Ether Day commemoration at MGH on October 16, 1906.⁹ It contains the following anecdote by Albert N. Blodgett, M.D. (1848–1923): “At the time of the first operation Mr. Hawes was invited to be present for the purpose of photographing the scene of the operation. He was, however, unfortunately, not accustomed to the sight of blood, became nauseated and was obliged to leave the amphitheater with the picture still untaken. At the conclusion of the operation, which had been entirely successful and had demonstrated the efficiency of ether, Dr. Warren sought out Mr. Hawes and presented him with the scalpel and probe used at the operation, together with his card.”⁹

According to Viets,¹⁰ “Josiah J. Hawes, a daguerreotypist, is thought to have been present, but the sight of blood so unnerved him, he was obliged to retire, thus missing the chance of a lifetime.” The Wikipedia Web page on Southworth and Hawes states that Hawes could not stand the sight of blood, and the historic moment was not recorded.† Leroy Vandam, in his article on Robert C. Hinckley's painting, dismisses Hawes in one sentence: “However, the daguerreotypist, Josiah J. Haines [*sic*], is said to have had a change of heart and failed to appear at the proceedings.”¹¹

There is a third possibility, unlikely in the author's opinion: that Hawes took photographs at MGH on October 16, 1846, that are not known to have survived. Photographs of the operation on Abbott would be highly treasured and very valuable to the photographer. In 1857, Southworth and Hawes copyrighted a photograph of Rufus Choate (1799–1859), a lawyer, politician, and orator.¹ They would probably also have copyrighted any existing photograph(s) of the operation on Abbott. Copies of the photograph(s) would have been sought by the individuals who had been present at the operation. Furthermore, there was no mention of any original photograph(s), either existing or lost, in the published correspondence of three physicians who wrote individ-

ually to Hinckley in 1883.² The three physicians, Henry Jacob Bigelow, M.D. (1818–1890), Charles Frederick Heywood, M.D. (1823–1893), and Charles Hosea Hildreth, M.D. (1825–1884), were present at the operation on Abbott. Two of the three letters to Hinckley discuss the likenesses of people in Hinckley's painting, but they do not refer Hinckley to any photographs of the event.²

Hawes was interviewed in 1897 for a newspaper article (“A Famous Boston Studio,” *Boston Weekly Transcript*, July 30, 1897, p. 3). According to the reporter, “He shows the picture he made of the first operation of ether ever given at the Massachusetts General Hospital, and also of the well-known doctors who represented the Harvard Medical School long ago.” It is not known which photograph was shown to the reporter.

In the author's opinion, the available information is not reliable enough to determine whether Hawes was invited but failed to appear at MGH, or if he attended the demonstration on October 16, 1846, but was unable to photograph the event. The only known photograph that has some resemblance to the operation on Edward Gilbert Abbott is a reenactment (fig. 1).

Warren's Scalpel, Probe, and Calling Card

It is also not clear when John Collins Warren, M.D., presented his scalpel, probe, and calling card to Hawes. Warren, who was immediately aware of the historic nature of the October 16 demonstration of etherization, would be expected to have kept the scalpel and probe for his personal collection (soon to become the Warren Anatomical Museum). The Ether Day account from 1906 states that Warren presented the instruments after the first demonstration of ether at MGH.⁹ Edward N. Bates, M.D. (b. 1867), in correspondence to Albert N. Blodgett, M.D. (dated May 8, 1906, in possession of the Boston Medical Library), states that he received the scalpel, probe, and calling card from Hawes. No earlier reference to these instruments has been found. The scalpel, probe, and calling card were then acquired by E. R. Squibb and Sons (now Bristol-Myers Squibb Company, New York, New York) and placed on permanent loan to the Boston Medical Library (now part of the Francis A. Countway Library of Medicine) in 1908 (Jack Eckert, Public Services Librarian, Francis A. Countway Library of Medicine, written communication, September 5, 2009).

Ether Dome Daguerreotype No. 1

Ether Dome daguerreotype no. 1 (fig. 1) is owned by MGH and is on loan to the Fogg Museum (Object no. 3.1979). It is now attributed to Southworth & Hawes. However, in 1979, it was incorrectly cataloged by the Fogg Museum as the work of St. Clair (and was called the St. Clair daguerreotype).^{8#} The error occurred because the handwritten inscription on the verso of the daguerreotype states that it was “Photographed by Mr. St. Clair 3/28/47.” Richard St. Clair, a photographer at MGH, took photographs of the daguerreotype on March 28, 1947.⁸

The daguerreotype shows the reenactment of the first administration of ether at MGH on October 16, 1846. The date of the reenactment is not known. It has been stated to

Phyllis L. Doucette. A Study of the Massachusetts General Hospital Daguerreotypes Depicting the Initial Operations Performed under Ether Anaesthetic. Honors thesis. Department of Art, University of Massachusetts, Boston, Massachusetts, 1994. This thesis contains images of all five daguerreotypes. However, the reenactment daguerreotype was attributed to St. Clair, and the location of the daguerreotype that is now owned by the Getty Museum was stated to be unknown.

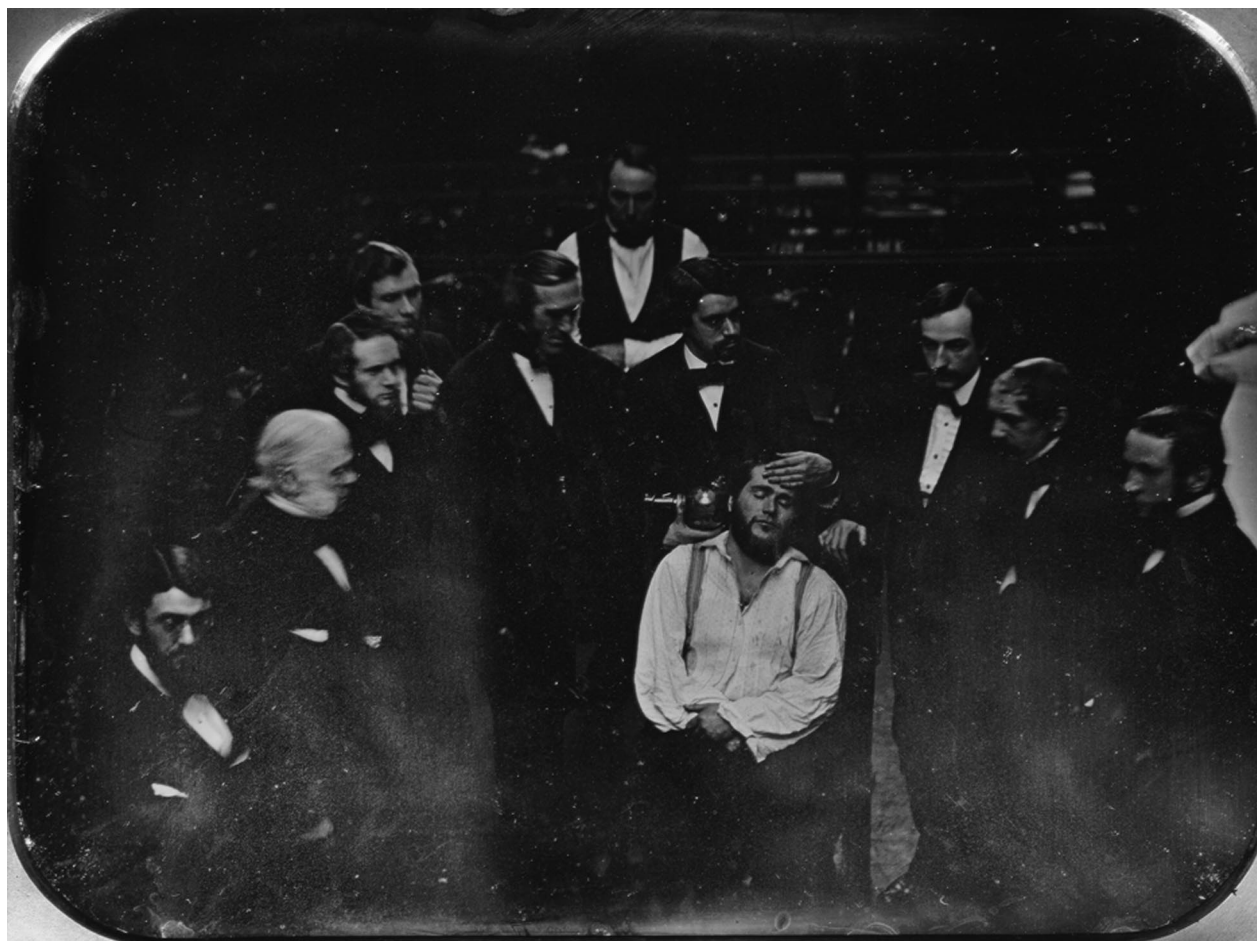


Fig. 1. Ether Dome Daguerreotype No. 1. Reenactment of the first demonstration of ether anesthesia at Massachusetts General Hospital (date of reenactment is not known). Whole plate daguerreotype (object no. 3.1979) in the Fogg Museum, Cambridge, Massachusetts, on loan from Massachusetts General Hospital, Boston, Massachusetts (reproduced with permission).

have been “within a few days of October 16, 1846,”¹² “in December 1846,”⁸ or in “late March or early April 1847.”³ No supporting evidence was provided for any of the three widely different dates. The author has reviewed documents that belonged to Southworth and Hawes (Southworth & Hawes Manuscript Collection, Richard and Ronay Menschel Library, George Eastman House, Rochester, New York) and John Collins Warren, M.D. (John Collins Warren Papers, Ms N-1731, Massachusetts Historical Society, Boston, Massachusetts), and found no indication of the dates when the Southworth & Hawes daguerreotypes might have been made in the Ether Dome.

The patient in the photograph looks healthier than would be expected from known descriptions of Edward Gilbert Abbott. The MGH records of Abbott state that he was “tall and slim . . . has always been weak and sickly.”¹³ The name of the person representing Abbott is not known.

There are 10 people standing around a seated patient. They are listed below in order from left to right.

1. (?) John C. Dalton, M.D. (1825–1889), the “house apothecary.”⁸
2. Solomon Davis Townsend, M.D.⁸
3. (?) Charles Frederick Heywood, M.D.⁸ Heywood, a house surgeon at MGH, wrote to Morton on October 14, 1846 (at the behest of John Collins Warren, M.D.), to invite him to administer his preparation to “diminish the sensibility to pain.”
4. Unknown man.
5. Augustus Addison Gould, M.D.⁸ Morton and his wife, Elizabeth, were lodging with Gould at the time of the first ether demonstration at MGH. Gould suggested that Morton add valves to the ether inhaler to be used on October 16, 1846. Gould and Morton copatented an inhaler in 1847. Gould was later appointed as a visiting physician at MGH. He was also a noted conchologist.
6. Attendant.
7. (?) William T. G. Morton.⁸ Unknown person—the author has seen no similarity with known photographs of Morton and doubts that this person is Morton.
8. (?) Henry Jacob Bigelow, M.D.⁸
9. Jonathan Mason Warren, M.D. The author believes that this person is J. Mason Warren, M.D. J. Mason Warren, M.D., testified in 1852 that he was not present at MGH on October 16, 1846 to witness Morton’s demonstration of

ether anesthesia.¹⁴ He was very interested in photography and may have commissioned the reenactment daguerreotype, hence his presence in the photograph. Wolfe³ has also identified this person as J. Mason Warren, M.D. However, according to Lowry and Lowry, this person was “Dr. John Collins Warren, clearly identifiable by his gaunt face and flattened curl of hair.”⁸

10. (?) Eben Frost.⁸ According to Lowry and Lowry, the “figure in the right foreground, is probably Eben Frost.”⁸ Ebenezer H. Frost (1824–1865) was the first patient that Morton rendered insensible using ether (for a dental extraction performed in Morton’s dental rooms on September 30, 1846) and was present at MGH for the October 16 demonstration of ether anesthesia.

The earliest known publication of this image is in an article by Norris¹⁵ on the Whitridge brothers. The three Ether Dome daguerreotypes held by the Fogg Museum (figs. 1–3) were reproduced, and all three were described as “reenactments.”¹⁵ According to Norris, Joshua Barker Whitridge, M.D. (1789–1865) observed the administration of ether at MGH in 1846, but there was no evidence that he was in any of the three “reenactments.”¹⁵ This daguerreotype was then

published in books by Lowry and Lowry,¹⁶ Banta,¹⁷ Wolfe,³ and in the Young America catalog.¹

It is not clear why the reenactment daguerreotype (fig. 1) was made. It has obvious historical relevance in portraying the first public demonstration of ether anesthesia. However, its date of production is unknown, and no copies of the daguerreotype, or paper prints of it, are known to exist. It does not seem to have been used to promote ether anesthesia given that its earliest known publication was in 1997.¹⁵ The identity of the person holding the ether inhaler is not known, and the surgeon, John Collins Warren, M.D., is absent.

Ether Dome Daguerreotype No. 2

Ether Dome daguerreotype no. 2 (fig. 2) is owned by MGH and is on loan to the Fogg Museum (Object no. 2.1979). Lowry and Lowry called this daguerreotype the “young seamstress daguerreotype” and stated that it recorded the first occasion (April 3, 1847) when a sponge was used at MGH to administer ether.⁸ It is not clear how they came to these conclusions. If the date provided by Lowry and Lowry is correct, the case history obtained from MGH can be linked to the patient in the daguerreotype.

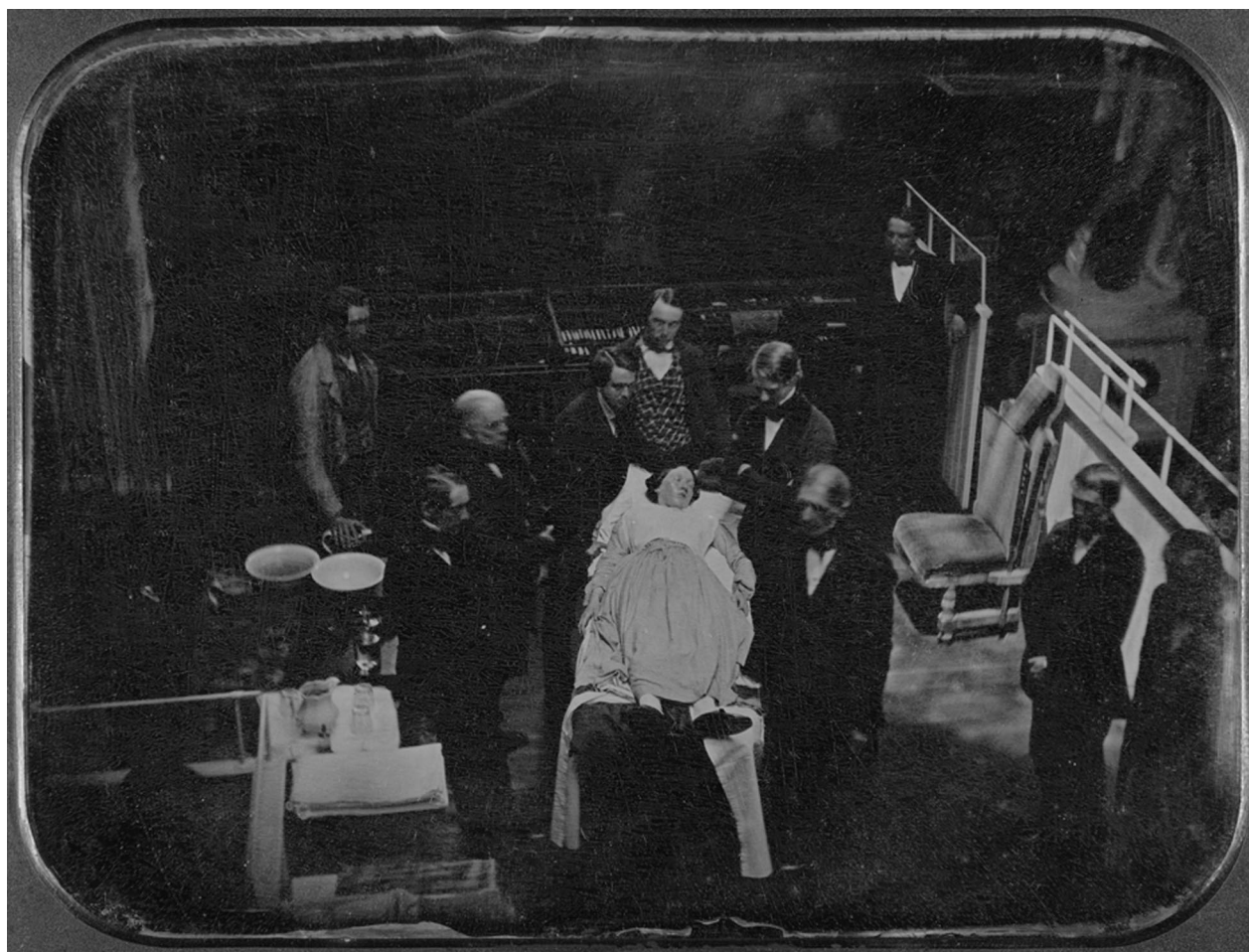


Fig. 2. Ether Dome Daguerreotype No. 2. Young woman receiving ether from a sponge (date unknown, spring of 1847 or later). Whole plate daguerreotype (object no. 2.1979) in the Fogg Museum, Cambridge, Massachusetts, on loan from Massachusetts General Hospital, Boston, Massachusetts (reproduced with permission).

The MGH surgical records of April 3, 1847, contain the earliest recorded use of the sponge at MGH. However, earlier uses of the sponge at MGH may not have been documented. The author found a brief diary entry by John Collins Warren, M.D., for March 30, 1847, that states “Public visit to the Hospital. Administered Ether on a Sponge—without apparatus” (diary in Massachusetts Historical Society, Boston, Massachusetts). No other details are provided in the diary. It should also be noted that the first reported use of the sponge in the United States was at an unknown location in Boston, Massachusetts, in March 1847.^{14,18,19} Independently, in England, the first reported use of the sponge was in February 1847.^{20,21} This daguerreotype does not document the first ever use of the sponge, but documents an early use of the sponge at MGH.

The following information was received by the author from Jeffrey Mifflin, Archivist and Curator, MGH (written communication, May 29, 2009). A 25-yr-old woman (name withheld) was operated on by John Collins Warren, M.D., on April 3, 1847. She had been admitted to MGH on November 2, 1846. She suffered from a 2-yr-old injury (puncture wound by scissors on her thigh 3 or 4 inches above the knee) that occurred in the course of her work as a dressmaker. Her symptoms were “contraction of extensors of toes and stiffness of knee and ankle joints.” She “inhaled ether from a sponge” and the nature of the operation was identified as “actual cautery.”

There are 10 people standing in the Ether Dome around a female patient (fig. 2). They are from left to right:

1. Unknown person.
2. J. Mason Warren, M.D.⁸
3. Solomon Davis Townsend, M.D.⁸
4. The etherizer. (?) Charles Frederick Heywood, M.D.^{8,19,22}
5. (?) William T. G. Morton.^{23,24} Two publications named the person with the “checkered vest”²³ or “fancy waistcoat”²⁴ as Morton. This author believes that the person with the “fancy waistcoat” could be Henry J. Bigelow, M.D. Bigelow was well known for his fashionable dress.¹⁷ However, the lack of contemporary images and records makes it difficult to be certain that the person is Bigelow.
6. Samuel Parkman, M.D.⁸
7. John Collins Warren, M.D.⁸
8. Unknown person—probably an attendant (with his arm on the railing).
9. Unknown person.
10. Unknown person (blurred image).

A photogravure of this daguerreotype was first published in 1897 as a frontispiece in an account of the Presidential address by John Collins Warren, Jr., M.D. (1842–1927), at a meeting of the American Surgical Association.¹⁹ John Collins Warren, Jr., the son of Jonathan Mason Warren, M.D., and grandson of the elder John Collins Warren, M.D., stated

that the daguerreotype belonged to the Warren family from the time it was taken.¹⁹ The image was also published in 1906, together with additional illustrations, in a book that recorded the Presidential address.²² Other publications that used the photogravure were the 1907 Annual Report of MGH, Duncum,²¹ Burns,²⁵ Buckland,²⁶ and Wolfe.^{2,3}

According to Lowry and Lowry,⁸ a photographic image of the daguerreotype was first published by Barger and White²⁴ in 1991. Barger and White described the daguerreotype as a “reenactment of one of the first surgical operations performed using ether anesthesia” and stated that the person in the “fancy waistcoat” was Morton.²⁴ An image of this daguerreotype was also reproduced by Norris,¹⁵ Banta,¹⁷ and in the Young America catalog.¹

Ether Dome Daguerreotype No. 3

Ether Dome daguerreotype no. 3 (fig. 3) is owned by MGH and is on loan to the Fogg Museum (Object no. 1.1979). The backing board of the daguerreotype has a label stating that it was loaned (presumably to MGH) in 1942 by Joseph Warren. Joseph Warren (1876–1942) was a Professor of Law at the Harvard Law School and the son of John Collins Warren, Jr.

Ether Dome daguerreotypes no. 3 (fig. 3) and no. 4 (fig. 4) were said to have commemorated one of the last Anatomy lectures by John Collins Warren and were called the “Anatomy Lesson Daguerreotypes.”⁸ The Getty Museum’s Web page states that it was Warren’s last anatomy lecture.^{**} Mifflin called it Warren’s last lecture in Surgery.²⁷ (The legend in Mifflin’s article refers to the MGH’s daguerreotype; however, an image of the Getty Museum’s daguerreotype has been reproduced.) However, according to Edward Warren²⁸ and a report in the *Boston Medical and Surgical Journal*,²⁹ John Collins Warren, M.D., gave his last lecture to the medical class on March 2, 1847. John Collins Warren, M.D., discusses his last lecture in his diary entry for March 2, 1847, and does not mention any lecture in his diary entry for April 24, 1847 (diary in Massachusetts Historical Society, Boston, Massachusetts).

This daguerreotype has not been dated previously. The use of the sponge to administer ether indicates that this daguerreotype could not have been made before the end of March or early April 1847. According to Lowry and Lowry, Solomon D. Townsend, M.D., had just finished washing his hands when Ether Dome daguerreotype no. 5 (fig. 5) was taken.⁸ If it is accepted that Townsend performed the procedure, the likely date of the series of three photographs (fig. 3–5) is April 24, 1847 (see patient details in the next paragraph). This was the date of Townsend’s only operation at MGH in the spring of 1847. However, in figure 5, the dressing has been applied to the patient’s left leg (it should be remembered that the daguerreotype images are horizontally reversed), whereas the patient’s history describes disease of the right tibia. This discrepancy cannot be resolved at present—it may be resolved by a study of all the surgical records of MGH for that period.

The following information was received by the author

^{**} Web page of the J. Paul Getty Museum. Available at: <http://www.getty.edu/art/gettyguide/artObjectDetails?artobj=39407>. Accessed December 17, 2008.



Fig. 3. Ether Dome Daguerreotype No. 3. Young man receiving ether from a sponge (date unknown, spring of 1847 or later). Whole plate daguerreotype (object no. 1.1979) in the Fogg Museum, Cambridge, Massachusetts on loan from Massachusetts General Hospital, Boston, Massachusetts (reproduced with permission).

from Jeffrey Mifflin, Archivist and Curator, MGH (written communication, May 29, 2009). Solomon D. Townsend, M.D., performed only one operation at MGH in the spring of 1847. The operation was performed on April 24, 1847. A 21-yr-old male patient (name withheld) suffered from necrosis of the right tibia. The duration of the operation was 50 min. He was “rendered insensible by ether.” The ether was probably administered with the conical sponge.

There are 10 people standing in the Ether Dome in daguerreotype no. 3 (fig. 3). There is an inner group of eight people (listed as number 1 to 8, from left to right) standing around the patient. The two persons (number 9 and 10) in the background may be attendants.

1. J. Mason Warren, M.D.
2. (?) Henry Grafton Clark, M.D.⁸ This person was identified as Henry G. Clark, M.D. (d. 1892), in the written inscription on the verso backing of daguerreotype no. 4.
3. (?) Samuel Parkman, M.D.²
4. The etherizer, holding a sponge. This person may also be the person administering ether in Ether Dome daguerreotype no. 2.

5. Unknown person. He is not present in Ether Dome daguerreotype no. 4 (fig. 4).
6. Solomon Davis Townsend, M.D.
7. John Collins Warren, M.D.
8. Unknown person. This person has been variously identified as Chas. H. Hildreth, M.D. (according to the inscription on the verso backing of daguerreotype no. 4), James Johnson (?) (according to Richard B. Holman³⁰), or Oliver Wendell Holmes, M.D.^{12,31,32} Holmes was appointed as a staff physician at MGH in 1846 (at the age of 37). The person in the daguerreotype seems to be younger than that, and he may also be the person standing near the railing on the bottom right section of Ether Dome daguerreotype no. 2.
9. Unknown person. This person (standing in the background, on the left side of the image) may be an attendant. He is present in Ether Dome daguerreotypes no. 3 and no. 4 (figs. 3 and 4), but he is not present in Ether Dome daguerreotype no. 5 (fig. 5).
10. Unknown person. This person (standing in the background, on the right side of the image, with one hand on the railing) may be an attendant.

The earliest known publication of an image of this daguerreotype (fig. 3) is 1980.³¹ It was incorrectly referred to as the “Third Operation Using Anesthesia at the MGH . . . mid-October 1846.”³¹ Another publication dated it as October 1846.³² It was reproduced, together with Ether Dome daguerreotype no. 4, in 1990 and described as the “First Photographed Ether Operation . . . 1846.”³³

The author has examined a print of this daguerreotype in the Countway Library. A handwritten inscription on the back of the print states (incorrectly) that it was “taken from daguerreotype made at second operation performed with the use of ether anesthesia, 17 October, 1846.”

Ether Dome Daguerreotype No. 4

The Ether Dome daguerreotype no. 4 (fig. 4) was first published in 1903³⁴ while it was in the possession of Josiah B. Millet (b. 1854), the son of Asa Millet, M.D. (1813–1893), a Boston surgeon. It then passed through several other own-

ers before being acquired by the J. Paul Getty Museum, Los Angeles, California in 1984.

The J. Paul Getty Museum describes this daguerreotype (fig. 4) as follows: Southworth & Hawes, 1847, “Early Operation Using Ether for Anesthesia” (Accession number 84.XT.958) Whole plate daguerreotype. Image size: 14.6 × 20 cm.

There are two inscriptions on the verso of this daguerreotype. The first is in ink and states that “This belongs to/ Josiah B. Millet/88 Garden St./Cambridge.”¹

The second inscription is in pencil and has been re-traced in ink. It accompanies a diagram with numbered persons from left to right. “1. J. Mason Warren/2. Henry G. Clarke [*sic*]/3. [illegible]/4. [illegible]/5. Freeman J. Bumstead/6. [illegible] Townsend/7. John C. Warren/8. Chas. H. Hildreth.”¹

There are nine people standing in the Ether Dome in daguerreotype no. 4 (fig. 4). In comparison with Ether Dome daguerreotype no. 3 (fig. 3), the two attendants have changed positions, and one person (number 5 in the list of persons in



Fig. 4. Ether Dome Daguerreotype No. 4. Young man receiving ether from a sponge (date unknown, spring of 1847 or later). Whole plate daguerreotype (accession number 84.XT.958) in the J. Paul Getty Museum, Los Angeles, California (reproduced with permission).

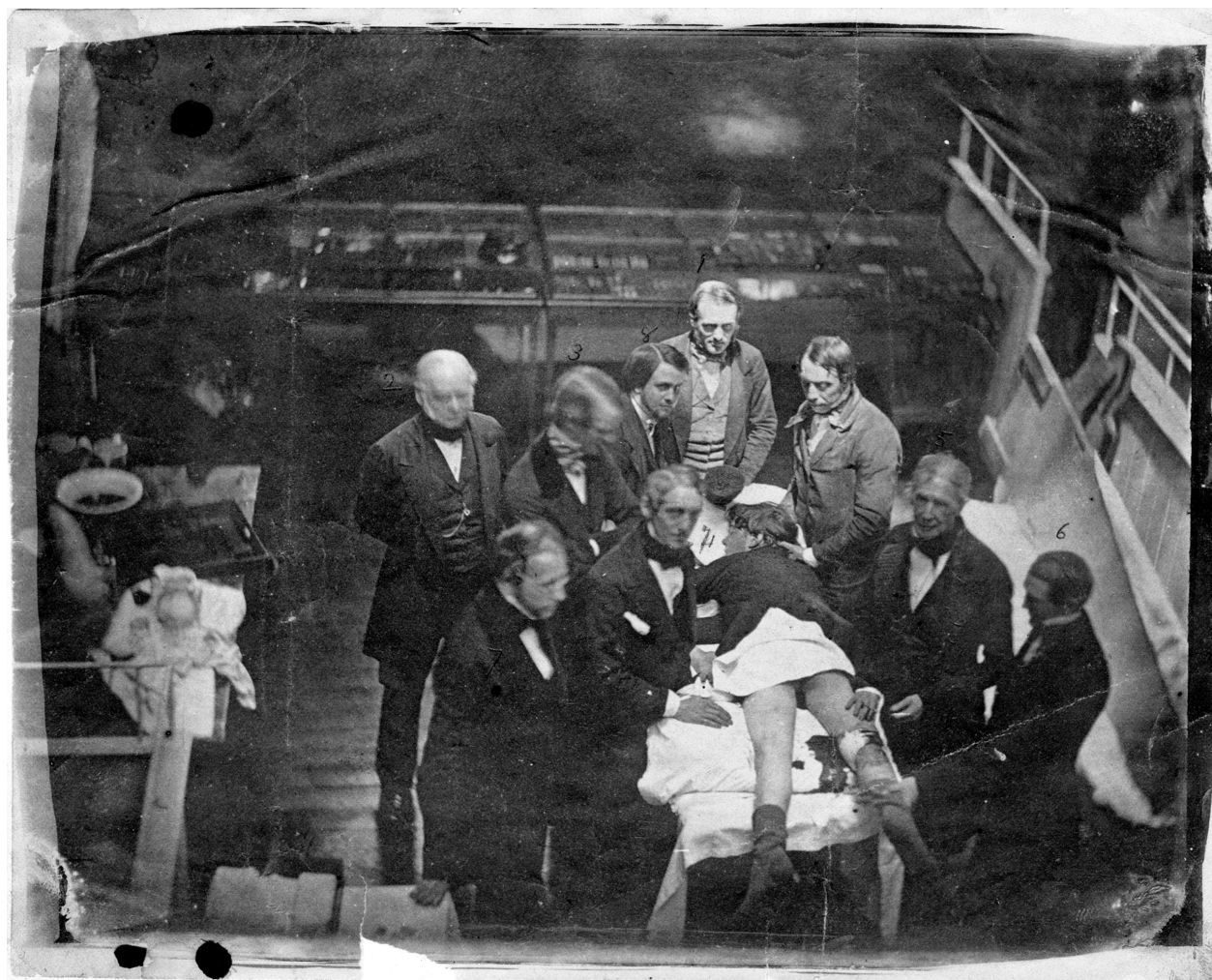


Fig. 5. Ether Dome Daguerreotype No. 5. Young man receiving ether from a sponge (date unknown, spring of 1847 or later), postoperative scene. Image of a paper print (uncataloged) of a daguerreotype. Print in the Harvard Medical Library in the Francis A. Countway Library of Medicine, Boston, Massachusetts (reproduced with permission).

daguerreotype no. 3) is no longer present. The remaining people are in the same positions as in Ether Dome daguerreotype no. 3. A list of the people in figure 3 has been provided in the discussion of Ether Dome daguerreotype no. 3.

One published identification of the persons in the daguerreotype was said to be by "Beaumont Newhall *via* Richard B. Holman."¹ In fact, Newhall states (in the first edition of his book) that the persons were identified by Richard B. Holman as: "left foreground, John [*sic*] Mason Warren, M.D.; extreme left, George Hayward, M.D.; with left arm akimbo, Solomon D. Townsend, M.D.; with hands on patient's thigh, John Collins Warren, M.D.; at extreme right, James Johnson, M.D. The figure administering ether is not Dr. Morton, but a stand-in. The patient is also a substitute."³⁰ Richard B. Holman (1903–1984) was the son of Louis A. Holman (1866–1939), the owner of Holman's Print Shop, Boston, Massachusetts. In 1934, Louis

Holman began selling Josiah Hawes' daguerreotypes, photographic negatives, and prints on behalf of the Hawes family.

The image of this daguerreotype (fig. 4) is the most widely published image of the five known images from the Ether Dome daguerreotypes. Vandam¹¹ referred to it as "probably the earliest known actual photograph of an operation performed with the aid of ether anesthesia." This daguerreotype was incorrectly described as a "reenactment,"^{30,35–41} as "the first operation under anaesthetic,"⁴² and as "possibly second use of ether as anesthesia."⁴³ The Wikipedia Web pages on Southworth and Hawes† and John Collins Warren†† have an image of the Getty Museum's daguerreotype with the legend "Re-enactment of the October 16, 1846 ether operation; daguerreotype by Southworth & Hawes." Several authors stated that this daguerreotype was from 1846.^{32,44,45} One author has dated it "circa 1850,"⁴³ whereas another author has dated it "as late as the fall of 1856."³⁷

Welling³⁷ and Burns²⁵ stated that a copy of this daguerreotype existed, but it did not provide any details of

†† Wikipedia Web page on John Collins Warren. Available at: http://en.wikipedia.org/wiki/John_Collins_Warren. Accessed November 1, 2008.

it. No other reports of a copy daguerreotype have been found. Both Welling³⁷ and Burns²⁵ may have mistaken the daguerreotype in the Fogg Museum (fig. 3) as a copy of this daguerreotype.

Ether Dome Daguerreotype No. 5

The Harvard Medical Library in the Francis A. Countway Library of Medicine, Boston, Massachusetts, has a paper print (uncataloged) of a daguerreotype that has probably been lost (fig. 5). The print and other historic photographs and documents were collected by Henry Knowles Beecher, M.D. (Henry Isaiah Dorr Professor of Research in Anaesthesia, Harvard Medical School, Boston, Massachusetts, 1904–1976), and left to the Harvard Medical Library after his death.

The numbers on the bottom of the print correspond to the identifications made on an attached paper.² There is also a different set of numbers (with no known list of identifications) on the image itself.

The photograph (fig. 5) shows the scene in the Ether Dome after the operation on the young man in Ether Dome daguerreotypes no. 3 (fig. 3) and no. 4 (fig. 4). The patient has been turned prone, and a bandage has been applied to his leg. The stretcher used to transport the patient back to the ward has been brought in and placed on the surgical chair. There are nine people standing around the patient. The differences in the people present in this photograph (fig. 5) and in Ether Dome daguerreotypes nos. 3 and 4 are discussed. The person that the author has listed as number 5 in daguerreotype no. 3 (fig. 3), who was absent in daguerreotype no. 4 (fig. 4), is back in the picture. One of the attendants present in daguerreotypes nos. 3 and 4 is not present in this daguerreotype. J. Mason Warren, M.D., and John Collins Warren, M.D., look toward the camera.⁸ Solomon D. Townsend, M.D., is now on the other side of the room, near the water bowls and some crumpled towels. He may have just finished washing his hands.⁸

According to Lowry and Lowry, "For the first time in the history of photography an act carried out over a space of time



Fig. 6. Ether Dome Daguerreotype No. 5. The image has been flipped horizontally to show that the operation was on the patient's left leg. Image of a paper print (uncataloged) of a daguerreotype. Print in the Harvard Medical Library in the Francis A. Countway Library of Medicine, Boston, Massachusetts (reproduced with permission).

Table 1. Publications with Incorrect Descriptions of the Ether Dome Daguerreotypes

Author(s) or Publication	Year	Page	Figure or Plate	Description
<i>Young Woman (fig. 2), Daguerreotype in the Fogg Museum (2.1979)</i>				
Life (November 22, 1948) ²³	1948	93	Unnumbered	"Ether was introduced by a Boston dentist, Dr. William T. G. Morton, who wears checkered vest."
Burns (reprinted in 1983) ²⁵	1979	Title page	Unnumbered	"Operation under ether . . . during the winter of 1846–1847."
Buckland ²⁶	1980	36	Unnumbered	"Soon after, daguerreotypes of the reenactment of the earliest operations performed using anesthetics were taken."
Barger and White ²⁴	1991	82	Fig. 6.9	"A reenactment of one of the first surgical operations performed using ether anesthesia."
Norris ¹⁵	1997	36	Fig. 5	"Reenactment of the first operation under ether" "1847."
<i>Young Man (fig. 3), Daguerreotype in the Fogg Museum (1.1979)</i>				
Robinson ³¹	1980	61	Unnumbered	"Third Operation Using Anesthesia . . . mid-October 1846."
Glenner <i>et al.</i> ³³	1990	17	Unnumbered	"First Photographed Ether Operation" dated "1846."
Carlebach ³²	1992	38	Unnumbered	"Daguerreotype made . . . in October 1846 showing a surgical patient under ether."
Norris ¹⁵	1997	36	Fig. 4	"Reenactment of the first operation under ether" "1847."
<i>Young Man (fig. 4), Daguerreotype in the J. Paul Getty Museum (84.XT.958)</i>				
DeWolfe Howe ³⁴	1903	327	Unnumbered	"One of the First Operations under Ether."
Newhall (first edition) ³⁰	1961		Plate 56	"A re-enactment of the demonstration of ether anesthesia" "The patient is also a substitute."
Life (December 23, 1966) ³⁵	1966	38	Unnumbered	"Surgeons re-enact for daguerreotype their first operation using ether in 1846."
Moore ⁴³	1975	626	Plate 205	"Possibly the second use of ether as anesthesia" dated "Circa 1850."
Sobieszek and Appel ³⁶	1976	121	Plate 102	"A re-enactment of the first public operation performed on October 16, 1846."
Welling ³⁷	1978	54	Unnumbered	"A reenactment . . . as early as November 1847 . . . as late as the fall of 1856."
Gernsheim ⁴²	1982	107	Fig. 59	"The first operation under anaesthetic . . . 1847."
Shakley ³⁸	1983	55	Unnumbered	"Reenactment of ether anesthesia operation . . . 1846."
Fox and Lawrence ⁴⁴	1988	129	Fig. 3.75	"An early operation under ether, taken . . . in 1846."
Glenner <i>et al.</i> ³³	1990	17	Unnumbered	"First Photographed Ether Operation" dated "1846."
Frizot (English edition) ³⁹	1999	54	Unnumbered	"The First Operation under Anaesthetic . . . rephotographed circa 1847." The credit for the photographer is "anonymous."
Esteve ⁴⁰	1995	668	Fig. 1	"Dr. W. T. G. Morgan [<i>sic</i>] Recreating the First Use of Ether for Anaesthesia in a Surgical Operation, Oct. 16, 1846."
Naef ⁴⁵	1995	89	Plate 84	"Use of Ether for Anesthesia . . . October 16, 1846."
Esteve ⁴¹	2003	105	Fig. 1	"Dr. W. T. G. Morgan [<i>sic</i>] recreating the first use of ether for anaesthesia in a surgical operation, 16 October 1846."
Mifflin ²⁷	2007	42	Fig. 1	"Dr. John Collins Warren gave his final lecture about surgery . . . in the spring of 1847."

was recorded by the camera."⁸ It is probably impossible to establish if this statement is true. Daguerreotypes and calotypes had been widely produced for over 6 yr, and it is likely that other events were also photographed over a short period of time.

A photograph of this print has only been published twice. It was first published in 1993 in a book by Wolfe on Robert C. Hinckley's painting "*First Operation Under Ether*."² It was then reproduced in 1998 in "The Silver Canvas" by Lowry and Lowry.¹⁶ The photograph was

briefly discussed in the chapter by Lowry and Lowry⁸ in the Young America catalog,¹ but it was not reproduced in the chapter⁸ or in the catalog.¹

Conclusion

Albert Southworth and Josiah Hawes are widely regarded as having been the finest daguerreotypists in the United States. It is fortunate that they practiced in Boston, Massachusetts, because they were able to document early ether anesthesia at the MGH. There are currently five known images that were produced by Southworth and Hawes in the Ether Dome at the MGH. Four of the images are from daguerreotypes that are now in museums in Boston, Massachusetts, and Los Angeles, California. The fifth image is from a paper print of a daguerreotype that has probably been lost. The daguerreotypes were often incorrectly described and dated. Possible dates for the daguerreotypes and brief histories of the patients are provided. The author found it easy to identify the two senior surgeons (John Collins Warren, M.D., and Solomon D. Townsend, M.D.), Augustus A. Gould, M.D., and two of the recently appointed staff surgeons (J. Mason Warren, M.D., and Samuel Parkman, M.D.). The author could not identify the junior doctors with certainty. Southworth and Hawes also produced portraits of some of the physicians associated with early ether anesthesia in Boston.

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