

9-1-2018

A Life-Saving and Life-Taking 19th Century Medical Instrument

Edward C. Halperin
New York Medical College

Yvonne S. Thornton
New York Medical College

Follow this and additional works at: https://touro scholar.touro.edu/nymc_fac_pubs



Part of the [Medicine and Health Sciences Commons](#)

Recommended Citation

Halperin, E. C., & Thornton, Y. (2018). A Life-Saving and Life-Taking 19th Century Medical Instrument. *The Pharos*, 20-24. Retrieved from https://touro scholar.touro.edu/nymc_fac_pubs/1600

This Article is brought to you for free and open access by the Faculty at Touro Scholar. It has been accepted for inclusion in NYMC Faculty Publications by an authorized administrator of Touro Scholar. For more information, please contact touro.scholar@touro.edu.



Atlantic Publishing Advertising Co. New York.

Photo by Knapp & Co.

Theodore Gaillard Thomas

CXII



Theodore Gaillard Thomas, and his invention, the Thomas Perforator. Courtesy New York Library

A life-saving and life-taking 19th century medical instrument

Edward C. Halperin, MD, MA, and Yvonne S. Thornton, MD, MPH

Dr. Halperin (AΩA, Yale University School of Medicine, 1979) is Chancellor/Chief Executive Officer, New York Medical College and Touro College, Valhalla and New York, NY.

Dr. Thornton, Obstetrician-Gynecologist and specialist in Maternal-Fetal Medicine, New York, NY.

The Medical Society of the County of Westchester, New York, was established in 1797 and is one of the oldest physician organizations in the United States.¹ Generations of physicians and their descendants have donated medical equipment to the Society. In 2014, the collection was turned over to New York Medical College and a concerted effort was undertaken to identify and curate the material. This disorganized collection filled multiple cardboard boxes. An unusual medical instrument with a screw-shaped tip, a concealed knife which emerges from the side of the instrument's shaft when activated by a trigger, a carefully crafted handle, and decorative engraving on the trigger was found in one of the boxes. With a strong magnifying glass the word "Tiemann" can be seen on the trigger.

George Tiemann & Company has been manufacturing and selling surgical instruments since 1826. With the assistance of the company's president the instrument was identified and listed for sale in the 1879 and 1889 catalogues as a "Thomas Perforator," invented by Theodore Gaillard Thomas (1831–1903).²⁻⁴

Thomas was descended on his father's side from a British missionary sent to the American colonies to

establish a branch of the Church of England in South Carolina. His mother's family were French Huguenots. An 1852 graduate of South Carolina's Charleston Medical College, Thomas moved north to become resident physician at Bellevue and Ward's Island Hospitals in New York City. He then moved to Europe for three years to study gynecology.³ Returning to New York, he partnered with fellow southerner Dr. John T. Metcalfe (1818–1902) who, at the time, "had his finger upon the pulse of fashionable New York."^{4,5} Metcalfe was the son of a Mississippi plantation owner, and the nephew of a physician whose clinical practice included the medical care of slaves in return for fees paid by their owners.⁶

Thomas and Metcalfe were contemporaries of the most famous southern gynecologist practicing in New York City, J. Marion Sims (1813–1883). Sims developed the surgical repair of vesicovaginal fistulas using enslaved African-American women as experimental subjects. He was criticized for neither obtaining consent nor using anesthesia.

In New York City before, during, and after the Civil War Thomas and Metcalfe established a large and prosperous private practice of obstetrics and gynecology. Thomas eventually assumed the Professorship of Diseases of Women at New York's College of Physicians and Surgeons, and in 1868, published *A Practical Treatise on the Diseases of Women*, a work which went through six editions and was translated into German, French, Spanish, Italian, and Chinese.⁴⁻⁷

Thomas was particularly known for the development of the laparoelytrotomy (Greek Elytron sheath (vagina)) as "a substitute for the then very dangerous operation of Caesarean section, and the still more dangerous one of

(fetal) craniotomy. He...performed the operation a number of times with remarkable success.”⁴

Laparoelytotomy is an abdominal delivery without an incision into the uterus, but rather an incision in the vagina. This can only occur in the latter stages of labor (the second stage) when the fetal head is deep into the birth canal. After prolonged labor, when the cervix is completely dilated, a transverse incision is made in the abdomen (Pfannenstiel incision), the peritoneal cavity is entered, but instead of incising the body of the uterus, after the bladder is retracted, the vagina over the fetal head is incised and the baby is delivered through the vaginal incision.^{8,9}

The Thomas Perforator was developed to decrease the size of the fetal head to facilitate delivery. In the case of either a dead fetus or a fetus with severe hydrocephalus, craniotomy often involved puncture of the fetal skull, and evacuation of its contents. The Thomas Perforator was one of many obstetrical craniotomy devices.¹⁰

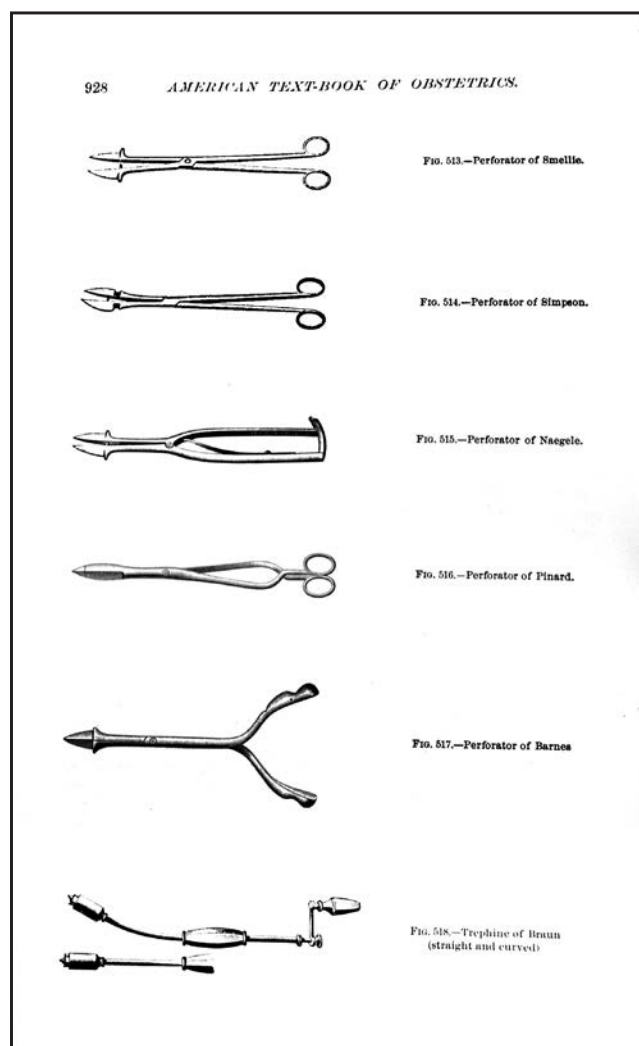
The Thomas Perforator belongs to an era in which Caesarean delivery was viewed as a highly dangerous heroic undertaking.¹¹⁻¹³ The operation was shunned by physicians and surgeons because of the high maternal death rate. The 1882 textbook *The Science and Art of Midwifery*, by William Thompson Lusk advises:

“Caesarean section belongs to the most hazardous operations of surgery, its performance is chiefly justifiable in cases in which craniotomy and delivery of the child by the natural passages involve the life of the mother in still greater peril....The duty of the physician is, however, to his patient. He is not to constitute himself either judge or executioner.”¹⁴

The 1903 edition of Williams’ *Obstetrics* states:

...if there is an obstructed labour for a considerable time [with] signs of infection, Caesarean section is not indicated, but the child should be sacrificed in the interests of the mother, inasmuch as the maternal mortality attending Caesarean section under such circumstances is in the neighborhood of 25 percent....Hydrocephalus affords a positive indication for craniotomy....In this case, spontaneous labour is out of the question, and even a successful Caesarean section will only give us a child that is doomed to die shortly or remain an idiot.¹⁵

Williams’ textbook further advises its readers that in the 80 cases performed in the U.S. up to 1878, collected by Harris, 52.5 percent of the women died.¹⁵⁻¹⁷ Harris



A variety of fetal cranial perforators illustrated in the 1895 work *An American Text-Book of Obstetrics for Practitioners and Students*.²²

stated that out of 11 Caesarean deliveries performed in New York City during the same period, only one patient recovered.^{16,17}

Complex ethical problems

The discovery of a Thomas Perforator in a cardboard box of donated instruments offers several lessons to the modern physician. First, the instrument is a reminder of an era of destructive obstetrical procedures. Vaginal surgery was the purview of the obstetrician/gynecologist, while general surgeons performed abdominal surgery. Obstetricians in the 19th century debated when and how vigorously to intervene with instruments in a difficult delivery.¹¹⁻¹³ Forceps were often employed, and, if

unsuccessful, the physician turned to *embrylucia*, forcible extraction of the whole or dismembered fetus by instruments.

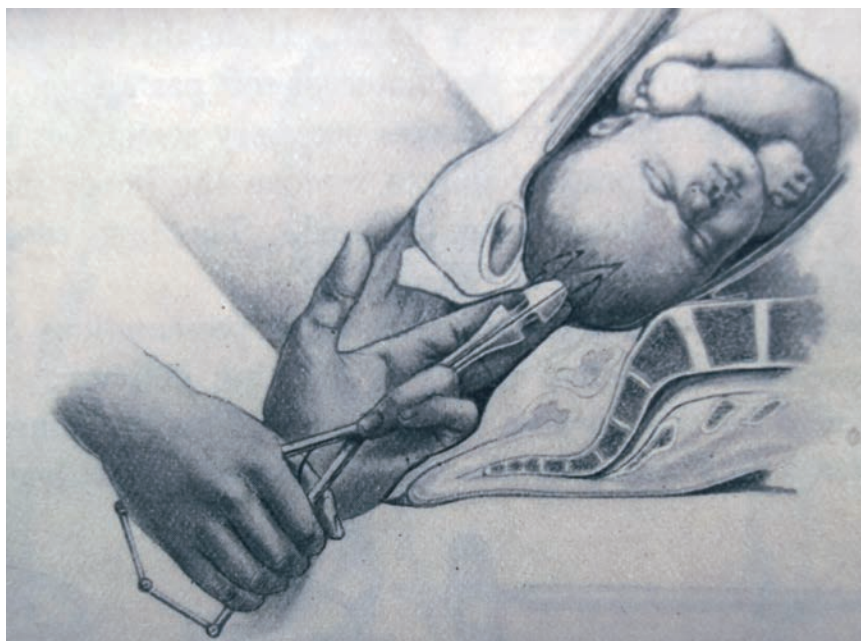
The vocabulary of *embrylucia* offends modern sensibilities but it was viewed, in its time, as an essential group of obstetrical procedures for the safety of the mother—perforation of the fetus; comminution of the fetus (reducing a solid body by grating, pulverizing, slicing, or other processes), *cephalotribes* (a device for crushing the fetal head), cephalotomes and embryotomes (instruments to cut or saw the head to reduce its size), cranioclast (an instrument for crushing the head), basilyst (an instrument for both crushing the vault and base of the skull), and extraction of the fetal parts.

The Thomas Perforator was invented after the application of anesthesia helped relieve the pain of childbirth, and just as physicians were making the transition from the frequent use of forceps or craniotomy to Caesarean delivery. While the first successful Caesarean delivery in the U.S. was either self-performed in 1822, or performed by John Lambert Richmond in 1827 and the Italian surgeon Eduardo Porro developed a Caesarean delivery technique in 1876 that involved amputating the body of the uterus, widespread use of this operation did not occur until after 1882.^{11-13,18,19} In that year, Max Säger published a treatise on the classical Caesarean section recommending aseptic

methods, opening the upper part of the uterus, and suturing it closed with silk thread separately from the abdominal wall closure.^{20,21}

The 1895 multi-authored volume *An American Text-Book of Obstetrics for Practitioners and Students* devotes many pages to the indications and performance of craniotomy and embryotomy as “destructive operations by which the volume of the fetus is reduced in order to permit delivery per vias naturales.” It is of interest to read what the text advises regarding indications for destructive procedures a decade after the improved techniques for Caesarean delivery had been described.

It is of primary importance to determine whether the fetus is living or dead. If dead, its bulk should be reduced whenever there is sufficient disproportion to make delivery difficult or dangerous. It is far better to mutilate a dead fetus in order that the mother may be delivered easily and safely than to subject her to the risks of a tedious and difficult forceps operations. Esthetic considerations and regard for appearance should not be allowed to weigh against a mother's safety. But when the child is alive the question becomes entirely different. Undoubtedly, in recent years symphysiotomy, Cesarean section, and the induction of premature labor have greatly narrowed the field of the destructive operations, but are we quite prepared to admit that craniotomy upon the living child is never justifiable? Pinard and his followers boldly take to this ground, so do a few operators who have had exceptionally good results from Cesarean section; but most obstetricians feel that the results of the conservative operations do not yet warrant such a sweeping assertion. Until it has been established that the maternal mortality after the conservative operations is not greater than that after embryotomy, it would be rash to say that mutilation of the living child is never justifiable.²²



Perforation of the fetal head as illustrated in *An American Text-Book of Obstetrics for Practitioners and Students*.²²

The widespread use of Caesarean delivery closed the era of *embrylucia*. The Thomas Perforator reminds modern physicians to avoid the sin of presentism: condemning physicians of the past for not having knowledge of the present.

Second, the Perforator reminds us of the complex ethical problems

attendant to balancing the life of the mother against the life of the fetus, and making judgments of the value of life outside of the womb of a hydrocephalic fetus. From antiquity, physicians and ethicists have grappled with whether it is permissible to conduct embryotomy prior to birth when the mother's life is endangered.

Finally, the elegant handle and engraved trigger of the instrument, far more attractive than pragmatic, recalls an era when allopathic medicine was establishing itself as a profession. Possessing attractive and distinctive instruments was one of the ways male doctors defined themselves as people of importance, and distinguished themselves from midwives. Historians have often focused on this competition between physicians and midwives, suggesting that elitist physicians with their elegant instruments undermined the credibility of the midwife in the 19th and early-20th centuries. In the U.S., midwives were often part-time health workers associated with immigrant communities. They most often provided obstetrical care to local women of similar ethnic backgrounds.¹¹⁻¹³ The scientific approach of physicians became increasingly attractive to the growing number of middle-class women who both desired the care of male obstetrician-gynecologists and could afford to pay for it. The Thomas Perforator is, therefore, also a reminder of the inability of 19th century midwives to compete in the development of a professional approach to their craft. This contributed to their decline over these years, while both medicine and nursing began to develop as professions rather than vocations. The resurgence of midwives is, in part, the result of the professionalization of their discipline.

Obstetrician-gynecologists and nurses developed as professionals by standardizing and improving education, adding practical applications of theoretical science, and developing an armamentarium of instruments—including the one we found in a cardboard box.

References:

1. Lansen T. The History of the Westchester County Medical Society. Purchase (NY): Westchester County Medical Society; 1997.
2. George Tiemann & Co. The American armamentarium chirurgicum. New York: George Tiemann & Co. 1879, 1889.
3. Worthington WC. Theodore Gaillard Thomas, M.D.: A South Carolinian's contribution to the development of American medicine. South Carolina Historical Magazine. 1998; 99: 340–357.
4. Valentine MT. The biography of Ephraim McDowell, M.D. Philadelphia: Self-published. 1894.
5. Cullum GW. Biographical register of the officers and graduates of the U.S. Military Academy at West Point, NY. Volume I. New York: D. Van Nostrand. 1868.
6. Halperin EC. Lessons from a slave doctor of 1841. The Pharos of Alpha Omega Alpha. 2013; 76(1): 10-6.
7. Thomas TG. A practical treatise on the diseases of women. Philadelphia: Henry C. Lea. 1880.
8. Isik A, Gulmezoglu M. Laparoelytrotomy: Abdominal delivery without uterine incision. AmJ Obstet Gynecol. 1991; 165: 781.
9. Goodlin RC, Scott, JC, Woods RE, Anderson JC. Laparoelytrotomy or abdominal delivery without uterine incision. Am J Obstet Gynecol. 1982; 144: 990–1.
10. Hibbard B. The Obstetrician's Armamentarium: Historical Obstetric Instruments and Their Inventors. San Anselmo, California: Norman Publishing. 2000.
11. Leavitt JW. Brought to Bed: Childbearing in America 1750 to 1950. New York: Oxford University Press, 1986.
12. Wertz RW, Wertz DC. Lying-in: A History of Childbirth in America. New York: The Free Press. 1972.
13. Borst CG. Catching Babies: The Professionalization of Childbirth, 1870–1920. Cambridge (MA): Harvard University Press. 1995.
14. Lusk WT. The Science and Art of Midwifery. New York: D. Appleton and Company. 1895.
15. Williams JW. Obstetrics: A Text-Book for the Use of Students and Practitioners. New York: Appleton and Company. 1903.
16. Harris RP. Remarks on the Caesarean Operation. Amer Jour Obst. 1879; xi: 620–9.
17. Harris RP. The Operation of Gastro-Hysterotomy (True Caesarean Section). Am J Med Sci. 1878; 75: 313–42.
18. Francis JW, Beck JB. Case of Self-performed Caesarean Section. NY Med Phys Journ. 1823; 3:40–4.
19. Lurie S. The History of Cesarean Section. Happaugue (NY): Nova Science Publishers. 2013.
20. Hem E, Børdahl PE. Max Sänger-Father of Modern Caesarean Section. Gynecol Obstet Invest. 2003; 55: 127–9.
21. Sänger M. Der Kaiserschnitt bei Uterusfibromen: Nebst vergleichender Methodik der Sectio caesarea und der Porro-Operation. Leipzig (Germany): Engelmann. 1882.
22. Norris RC, editor. An American Text-Book of Obstetrics for Practitioners and Students. Philadelphia: W.B. Saunders. 1895.

The corresponding author's e-mail address is
edward_halperin@nymc.edu.