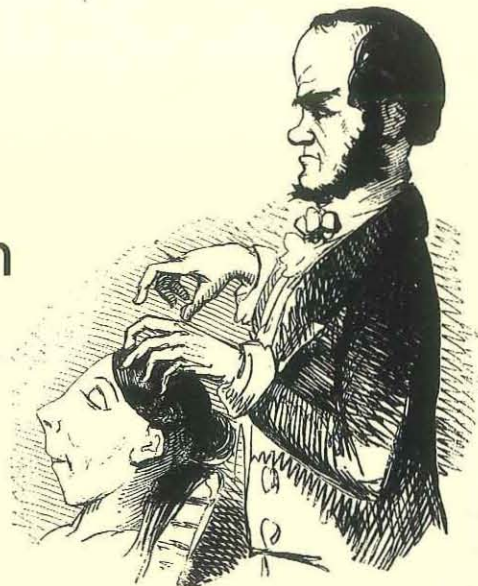


Below: In *The First Operation Under Ether* (painting by Robert Hinckley), which took place in Boston on October 19, 1846, William Morton demonstrated the anesthetic properties of ether during jaw surgery. Courtesy of the Boston Medical Library in the Countway Library of Medicine, Boston, Massachusetts.



# Mesmerism and the Introduction of Surgical Anesthesia to Victorian England



by Alison Winter

**Above:** The most famous Victorian mesmerist, John Elliotson, is portrayed in a 1943 *Punch* cartoon as a concert pianist, “playing” the head of a plebeian woman with mesmeric influences, as if her brain were a set of piano keys.

One of the most celebrated moments in the history of surgery is the introduction of anesthesia in the 19th century. During the 1840s, ether, chloroform, and then nitrous oxide were first used in surgical practice as anesthetic agents. Historians have traditionally seen this innovation as the critical moment in an age-old battle between doctors and pain. I’m going to make an argument, however, that might initially seem both ungenerous and contrary to common sense: I’ll suggest that the introduction of anesthetic techniques in the 1840s certainly had *something* to do with the alleviation of pain, but a much more important factor was the professional anxieties of Victorian doctors and their struggles for authority at a critical moment in their history. Ether was introduced as an alternative to a preexisting anesthetic technique that was threatening to many doctors—the practice of mesmerism.

In the first half of the 19th century, British physicians and surgeons were ostensibly governed by three organizations—the Royal College of Physicians, the College of Surgeons, and the Society of Apothecaries—but actually there was very little regulation. Early Victorian doctors often claimed that they were making great strides in clinical research and medical education, but they were by no means a united and powerful community: there were few legal regulations over medical practice, and a wide variety of competing healers offered their services in a chaotic medical marketplace. And Victorian patients were less impressed with the progress of medicine than doctors themselves. Medical students were caricatured in the press as drunken buffoons, and it was commonly said that doctors’ ignorance and irresponsibility made them as likely to kill as they were to cure their patients.

There were constant complaints about “quackery,” but these complaints came from so many different sources as to suggest that the problem was ubiquitous—there was no single type of practitioner one could seek out who was sure to be trustworthy. There were “quacks” with formal medical training and without it, in the metropolis and in the provinces, on the faculty of the universities, and engaged in private practice. Conventional doctors were accused of quackery, as well as people we might now identify as fringe or alternative therapists, such as homeopaths, herbalists, hydrotherapists, mesmerists, and hypnotists. But calling them fringe therapists would be anachronistic, because the situation was so chaotic in early Victorian England

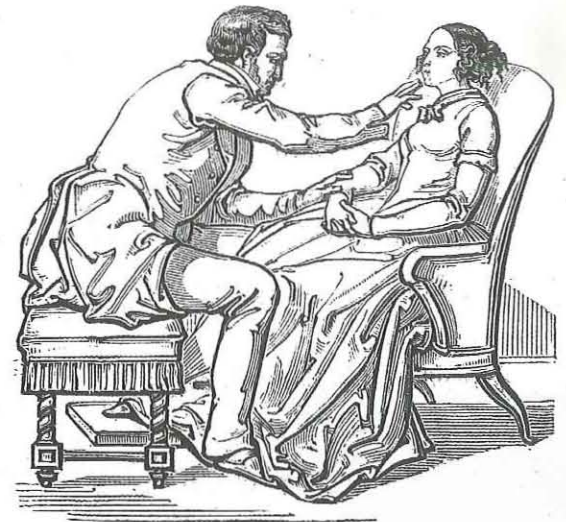
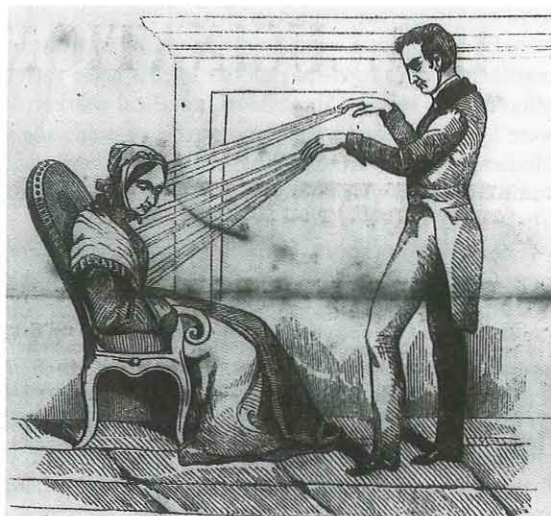
To prove that the ordinary senses were really gone, the mesmerist and members of the audience fired pistols near the subject's ears, pricked her skin with needles . . . and waved smelling salts beneath her nostrils.

**Right:** A mesmerist creates a state of unconsciousness in his subject by moving his hands closely over her. **Below:** Here the magnetic influence is rendered visible (by the imagination of the artist) as a physical force radiating from the mesmerist's body into that of his subject. (Both illustrations from Charles Dupotet, *L'Art du Magnétiseur*, 1862.)

that they were not really marginal at all—they were just part of the fray.

Among them, the mesmerists were particularly significant to the history of anesthesia. Animal magnetism, or mesmerism, was a practice in which one person claimed to influence another through the movement of his hands near the surface of the other person's body. It was invented in the late 18th century by the Austrian physician Franz Anton Mesmer, who thought that he had discovered a means of manipulating physical forces, or "magnetic fluids," in the service of health.

Mesmer and his followers thought that when the mesmerist moved his hand in front of the patient, a physical influence of some kind passed between them. The influence created physiological changes in the patient's body. Mesmerism was controversial from the very beginning, but it survived and spread throughout Europe. In the 19th century, it became a widespread form of psychological experiment and medical therapy. In the illustration



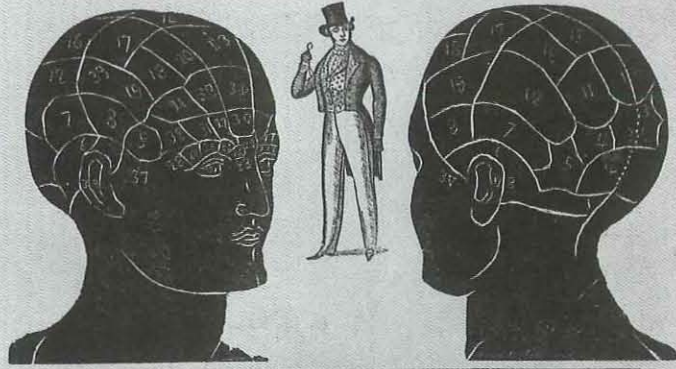
above, a mid-19th-century mesmerist moves closely over his subject, his physical proximity creating a state of artificial sleep or altered consciousness; the illustration below portrays the magnetic influence as a kind of ray, akin to light. Once the mesmeric state had been achieved, further manipulations could cure illnesses, or, alternatively, produce amazing psychical phenomena such as clairvoyance, prophecy, and the suspension of sensation.

During the 1840s, hundreds of itinerant mesmerists traveled along Britain's lecturing circuits, displaying their phenomena before paying audiences. They used public shows to attract private clients who might be willing to pay large sums for personal treatment. During the public demonstrations, mesmerists and skeptics would tussle over the question of whether the strange phenomena were real or the subject were faking. This was the first question people asked, and they went to extravagant and sometimes horrifying lengths to answer it.

To prove that the ordinary senses were really gone, the mesmerist and members of the audience fired pistols near the subject's ears, pricked her skin with needles (the stereotypical patient was always a woman, although mesmerism was practiced on both genders), and waved smelling salts beneath her nostrils. There were more aggressive tests as well: acid poured on her skin, knives thrust under her fingernails, electric shocks run through her arms, and noxious substances placed in her mouth (such as vinegar, soap, and even ammonia). Experiments sometimes provoked physical skirmishes over subjects' bodies as the mesmerist and his challengers inflicted rival tortures. If these produced a response, skeptics dismissed the experiment. If there was none, the trance was all the more plausible—or the fakery all the more skillful and reprehensible.

This was how mesmerism's anesthetic powers were discovered. After dozens of public demon-

# TOWN HALL, CHARD.



## Mr. DAVEY

Who has just concluded a Course of Nine Lectures at Tiverton, respectfully announces to the Gentry and Public generally of CHARD, and its Vicinity, that he will deliver a Course of

**THREE EXPERIMENTAL LECTURES,**  
ON THE UTILITY OF

# MESMERISM

## PHRENOLOGY, SYMPATHY & MINERAL MAGNETISM,

AT THE ABOVE HALL, KINDLY LENT FOR THE OCCASION,

On Tuesday 8th, Thursday 10th & Friday 11th December, 1846,

TO COMMENCE AT SEVEN O'CLOCK, P. M.

That all persons may have an opportunity of witnessing the greatest wonder of the age, the price of Admission will be reduced one-half, viz. RESERVED SEATS, 1s.; SECOND CLASS, 6d.; BACK SEATS, 3d.

### THE LECTURER

Will explain in his preparatory Lectures the locality, use, and abuse of the Organs, and the application of Mesmerism to human welfare, and exhibit a number of Insts, whose characters are before the Public. He will then undertake to produce Mesmeric Sleep, Rigidity of the Limbs, Power of Attraction and Repulsion, and the Transmission of Sympathetic Feelings. He will also demonstrate Phrenology, by exciting the Organs while in a state of Coma. The sleepers will perform Vocal and Instrumental Music, Dancing, Talking, Nursing, Eating, Drinking, and other feelings of mirth, imitation and independence, even up to the highest manifestations of benevolence, veneration and sublimity, while in the Mesmeric Sleep.

Mr. D. will be accompanied by Miss Henly, daughter of the late Capt. Henly, from Newton-Abbot, born Deaf and Dumb; and he feels confident of bringing into action those faculties which have been dormant from her birth, by the aid of Pheno-Mesmerism.

### "FACTS ARE STUBBORN THINGS."

AS WILL BE SEEN BY THESE EXTRACTS AND TESTIMONIALS.

From Woolmer's Exeter and Plymouth Gazette, of the 30th August, 1845—

"George Cooke (the youth lately in our Deaf & Dumb Institution, but who has now the faculties both of speech & hearing in some degree restored to him by means of Mesmerism,) was also present, and gave the audience convincing proofs that he could now both hear and speak. Several very curious and interesting phenomena were produced upon him, as well as upon some respectable individuals, inhabitants of this City, and well known here."

From the North Devon Journal, of May, 1844—

"At the close of the Saturday's Lecture, it was put by the chairman, (Dr. Jones) to the Meeting, whether or not they were satisfied as to the reality of the phenomena produced, and of the absence of any collusion between the parties, when

strations in which unconscious mesmeric subjects were unwittingly tortured, people began to think of putting anesthesia to a more constructive purpose, namely, in surgery.

The first well-publicized British operation to use mesmeric anesthesia was an amputation of a leg at the thigh. The patient was James Wombell, a 42-year-old Nottinghamshire laborer, and the mesmerist a barrister named William Topham. For several days Topham used mesmerism to put Wombell "into repeated states of diminished pain and deeper sleep." Finally, he reached a state of complete insensibility, and during the surgery he manifested none of the usual signs of pain except for a "low moaning." This sound was not influenced by the course of the operation; it did not change, and Wombell did not stir, when the major nerve to the spine—the sciatic nerve—was cut. Afterward Wombell claimed to have felt no pain, though he did say he had "once felt as if I heard a kind of crunching." He recovered and lived for 30 years.

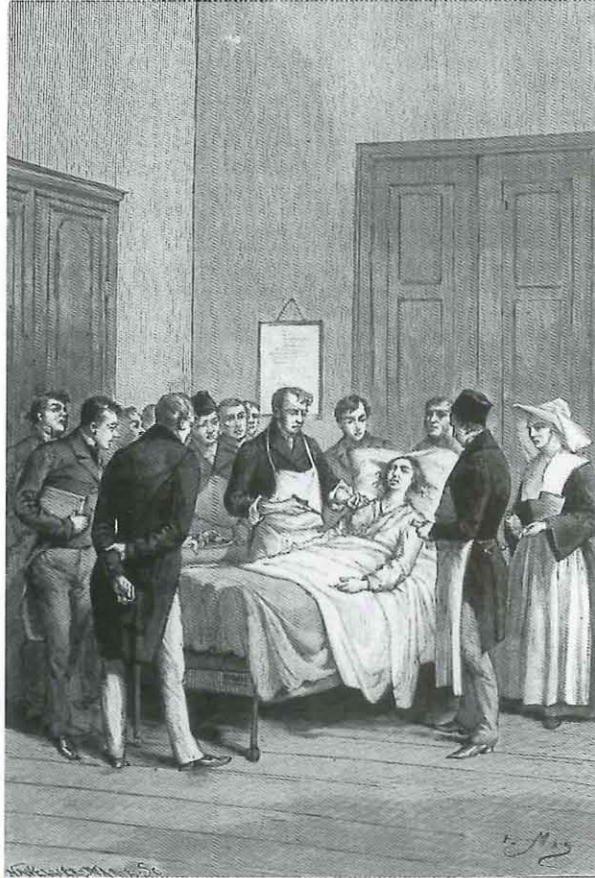
It might seem obvious that Wombell would have had no incentive to misrepresent his experiences—if he said he felt nothing, then he felt nothing. But this was violently disputed when his case was published. Doctors argued vehemently about whether he had been faking his lack of pain during the operation and lying about it afterward. Some claimed that he had colluded with the mesmerist and surgeon to pretend that he felt nothing when he had actually been conscious the entire time. That is, he had felt all the pain of the amputation but had used what muscles remained in that leg to hold it still even when the knife cut through the sciatic nerve.

To understand this skepticism, we need to get a better sense of what it meant in this period to lose sensation. Since the late 18th century, a wide range of drugs, gases, and vapors could suspend sensation, but until the 1840s, it seems that no one thought to use these agents for the relief of

pain in surgery. One might think that this inaction stemmed from the fear of side effects. But 19th-century doctors were not very scrupulous about this kind of concern. The first half of the century saw the introduction of powerful chemicals into therapeutic treatment, many of which are ranked as toxic when used in lower doses than those used at the time for therapeutic purposes. Doctors had no worries about using untried chemical cures on charity patients in hospitals. If they had wished to experiment with anesthesia in the teaching hospitals, there would have been nothing to stop them.

Nor can one attribute the delay to the ignorance of the general public about these chemicals and their effects on the body. Ether and nitrous oxide,

Above: A typical broadsheet advertises a public demonstration of mesmerism by an itinerant lecturer. The mesmerist proclaims that "facts are stubborn things" as a promise that the audience will find mesmerism's reality impossible to deny. (Courtesy of the Somerset Records Office.)



Left: The first major surgical operation on record using mesmerism was performed in 1828 in Cherbourg, France—a breast amputation on one Mme. Plantin by Dr. Jules Clocquet. When Plantin appeared to feel none of the pain of surgery, the experiment was declared a success, although the patient died soon after. (From Figuiet, *Mystères de la Science*, 1880.)

and their perception- and consciousness-altering effects (including insensibility to pain) were on show in music halls and popular scientific displays. Their effects were witnessed by virtually all ranks of society, and they could be obtained commercially. A great proportion of individuals had seen the effects of chemicals like ether, alcohol, laudanum, opium, and nitrous oxide, and had access to them.

It is extraordinary, on the face of it, that 50 years should have passed before ether and nitrous oxide were routinely used in surgery. One rather obvious point is that sensation and insensibility had a very different significance in the 19th century from what they have come to mean since anesthesia became a routine part of medical practice. The connection to surgery, once made and demonstrated, was obvious, but making this connection was not trivial. If it had been, surgical anesthesia would have been developed in the late 18th century, when natural philosophers were most interested in developing different kinds of gases and vapors and documenting their effects on the body. Instead, the deliberate suspension of pain during surgery came as an afterthought in early Victorian mesmerism research. Even after mesmerism was developed, four years passed before chemical anesthetic agents became well known (although there were sporadic, individual experiments with these agents earlier).

What may be even more surprising is that many doctors did not like the thought of anesthesia when mesmerism's powers were first demon-

strated. Some were actually horrified by the prospect. One medical editor protested that the idea of one person producing insensibility in another was too terrible even to admit into consideration. If pain could really be suspended, he threatened, "the teeth could be pulled from one's head" without one's even realizing it. He concluded that the suspension of pain would "tear down" all the "fences" in society. It was not merely the state of insensibility that was horrifying, of course, since alcohol and opium could dull pain and remove consciousness. But these were not dispensed by someone else; they were consumed by the individual concerned, and he or she controlled the dosage. For the medical editor, the thought that one person could remove from others their sensitivity to their surroundings involved a horrifying violation of the individual's agency. The disturbing nature of the hypothetical scenario he laid before his readers further accentuates the difference in bodily sensibility between the 1830s and the late 20th century.

There is no way of knowing whether the patients of such outraged doctors would have reacted similarly if the connection between the production of insensibility and its potential use in surgery had been presented to them. I am bound to suspect that they would have been less fussy than the medical editor quoted above. But either way, patients, like doctors, did not make the connections that would have given them the choice.

One factor in the changing attitude to pain was the rising power of surgeons, and their rivalry with physicians. During the early 1840s the College of Surgeons lobbied for, and in 1843 received, the Royal accreditation that had long been the sole privilege of the Royal College of Physicians. In the late 1830s and early 1840s, the surgeons' drive to lever themselves into positions of greater authority provoked resentful articles about individual surgeons, representing them as unregenerate, inhumane, and barbarous hypocrites who

talked reform but practiced barbarism. And in these portraits, pain was portrayed as something the surgeon maliciously manipulated. For instance, in 1840, the *Medical Times* ran a striking series of "portraits" of the master of the London surgical scene, Robert Liston, professor of surgery at University College London. Liston was pre-eminent for his speed with the knife and skill at manipulating it. But even Liston could be represented as a malicious, maladroit rogue within the reformist medical press. The *Medical Times* portrayed him as an example of old-fashioned surgeons' unfeeling attitudes to their patients. The way it sketched Liston's crude, cruel, and vulgar personality involved Liston's attitude to his patients' pain.

The article told a dramatic story of a struggle between him and a patient on the operating table. During a lithotomy the patient "attempted to close his limbs in a vain attempt to avoid stretching the gaping wound" and thereby suffer even greater pain. His surgeon shouted, "Slack your legs, man; slack your legs—or I won't go on." Then he "coolly relinquished the operation," and stated coldly, "No, I won't go on, . . . unless he loosens his limbs." Eventually the patient was

One medical editor protested that the idea of one person producing insensibility in another was too terrible even to admit into consideration. If pain could really be suspended, he threatened, "the teeth could be pulled from one's head" without one's even realizing it.

able to relax his legs. Liston then proceeded with the operation and, telling the patient, "here's your enemy," removed the stone from his bladder. The article concluded with a scornful summing up: "His element was blood, and he raised himself towards the pinnacle of professional renown upon the mangled trophies of his amputations and the reeking spoils of the operating theater." One could only pity the "trembling patients" who waited to "feel the temper of his knife."

Pain was traditionally a sign of surgeons' masterful status, like the clotted blood they left on their aprons. In the eyes of this journalist, however, the surgeon was a sinister figure perversely vaulting himself to greater power by making a greater spectacle than necessary of the patient's pain and his dependence on the surgeon. In this instance, *mental* control of another person's body was a greater sign of surgical power than *physical* control. At the same time, though, it facilitated an indictment of the surgeon. Pain

was treated here not as an inevitable part of a patient's experience, but as an evil that should be minimized wherever possible. This was the implicit assumption that made Liston's manipulation of his patients' pain pivotal in the *Medical Times's* attempt to discredit him.

Another factor in the controversy over mesmeric anesthesia was related to Victorians' fascination with altered states of mind. Victorians used a dizzyingly large vocabulary for suspended animation: sleep, coma, insensibility, catalepsy, suspended animation, transient death, human hibernation, and anesthesia were only a few of the terms purporting to describe different conditions. To Victorians, no single behavior could uncontroversially be termed "anesthetized." During these debates it was not easy to decide when a patient was insensible. If he moaned, critics claimed he must have been awake; he had merely forgotten the experience. If he lay still, critics took his motionless state as an indication of conscious control over his body. Similar uncertainty surrounded the question of the patient's testimony, because of course this would be one state where you couldn't remain sober as a judge to testify. At the very moment when you were supposed to be keeping track of what was going on, you became unconscious.

As the years passed, between 1842 and 1846, mesmerism became increasingly successful. One major boon to the campaign was the introduction of mesmerism to India, where a certain kind of operation was particularly helped by anesthesia. These were operations for the removal of large tumors, or hydroceles, particularly of the scrotum. Scrotal hydroceles were not uncommon in India and could grow to enormous sizes (in some cases the diseased scrotum weighed more than the rest of the individual's body). They were extremely hard to remove in the years before anesthesia, because patients usually died of shock on the operating table. When mesmeric anesthesia began to be practiced in India, it became particularly well known for its successful application to these dramatic and horrible cases. Back in Britain, Victorian assumptions about the "simpleminded" nature of India's indigenous peoples made these operations into persuasive evidence for the reality of mesmeric phenomena. According to the London journal editors, the Indian subjects were either too naive or dim-witted to fake the effects.

### Ether anesthesia

By mid 1846, mesmeric anesthesia looked poised to enter hospitals as a routine surgical technique. Then, in November, the anesthetic properties of the vapor of ether became widely known.

Ether's history was remarkably similar to mesmerism's: its powers over the body became known in the late Enlightenment, when doctors were studying the effects on the body of all kinds of airs. During the first several decades of the

Mesmerists were enraged at the welcome ether was receiving from doctors who had previously rejected the possibility of the suspension of pain. Ether effectively put paid to mesmerism's best hope for medical legitimacy.



Detail of the painting on page 30 of the first operation under ether. William Morton stands at left, holding the inhaler. Note the pale and motionless appearance of the patient and the professional solemnity of the surgeons. The scene is strikingly different from witnesses' accounts of the event itself.

19th century, ether and mesmerism were both recreational practices in popular-science demonstrations. And during the 1840s, ether was attacked as an obstacle to medical reform. Medical students' fondness for consuming the inebriating vapor in "ether frolics" was undermining their education and encouraging habits of dissipation.

It was largely through the ineffectiveness of a Boston dentist, both in mesmerism and in the administration of nitrous oxide, that inhalation anesthesia was developed in 1846. Horace Wells had been experimenting for some time with mesmerism in the hope of anesthetizing his dental patients. But Wells was no mesmerist. His every effort was an abysmal failure. Then, in 1845, he noticed that subjects "drunk" on nitrous oxide during a popular-science demonstration appeared to feel no pain. He immediately arranged a public demonstration of his own, and administered the nitrous oxide himself. He claimed that his idea would bring forth a "new era of tooth pulling." Unfortunately, the procedure did not anesthetize the patient. Wells found to his dismay that practice and skill were necessary for success. He retired in humiliation and later committed suicide when his former dental partner, William Morton, received the credit for discovering inhalation anesthesia only one year later.

Morton had been present for Wells's disastrous performance, and decided to make his own experiments using ether instead. After much practice (incidentally on someone who had asked to be mesmerized), Morton carefully arranged his demonstration of ether on October 19, 1846. Morton administered the ether, and Dr. John Collins Warren performed the surgery. The operation involved a small incision to the jaw, followed by some minor dental work. According to several accounts, the patient moaned and moved restlessly under the knife. Ether had not made him insensible, he later testified, though his pain had been somewhat dulled. The incision had felt

to him as though a "hoe" had been "scraped" across his skin. But as Warren finished the surgery, the audience went wild with cheers, throwing papers onto the stage and shouting their enthusiasm. "Gentlemen," proclaimed Warren, "this is no humbug."

Eventually, ether's debut as an anesthetic agent would be revised when it was celebrated in a famous painting of 1880, which hangs in the Boston Medical Library (see page 30). Here, instead of the uproar the audience displayed during the real event, they are sober, calm and serious; in contrast to the patient's testimony at the time, he is not conscious, and all traces of the commotion described in 1846 are gone.

### An ethereal epidemic

The London dentist Francis Boott seems to have been the first British practitioner to hear the news about ether, some three weeks later when the post arrived by sea from the east coast of America. He immediately wrote to Robert Liston, the aforementioned professor of surgery at University College Hospital. Liston was on the lookout for techniques that would enhance the powers of surgery without carrying the sort of taint that he thought mesmerism had, and he moved quickly to stage a highly publicized performance of the first operation using ether anesthesia.

Liston's operation was designed to remind his audience of landmark mesmeric demonstrations. The operation, an amputation of the leg at the thigh, was the same procedure that Topham and Ward had performed four years earlier. The setting, University College Hospital, had been the venue for Victorian Britain's very first experiments in mesmerism almost a decade before. During the operation, the patient moaned and stirred restlessly, but did not cry out.

When he had finished, Liston crowed that "this Yankee dodge beats mesmerism hollow." Later that day he wrote to his friend, Professor James

Miller of Edinburgh, exulting, "HURRAH! Rejoice! Mesmerism, and its professors, have met with a heavy blow, and great discouragement." What Liston was celebrating, it would seem, was at least as much a victory over mesmerism as it was a triumph over pain.

The next stage in the battle for control of anesthesia was extensive coverage in the press. In the first six months of 1847, the *Lancet* is said to have published 112 articles on ether anesthesia; and so intoxicated were British doctors with the new technique that one medical journal referred to an "ethereal epidemic" among the profession. The medical press stressed the "medicalness" of ether by positioning it as the opposite of mesmerism; that is, it was scientific and it was restricted to respectable practitioners. No one specified what its scientific principles were, and the claim that ether could be restricted to a select few professionals was wishful thinking. But ether's reputation as being scientific and professional, in contradistinction to mesmerism's quackery, was encouraged throughout the next several years and decades.

#### The decline of mesmerism and ether anesthesia

Mesmerists were enraged at the positive reception that ether was receiving from doctors who had previously rejected the possibility of the suspension of pain. Ether effectively put paid to mesmerism's best hope for medical legitimacy. Although mesmerism continued to be a thriving practice outside the medical community, even to the point of the establishment of several "mesmeric infirmaries" during the late 1840s, the defeat of mesmeric anesthesia was widely perceived to spell the end of mesmerism's potential legitimacy within medicine. Mesmerism was not taken into hospitals as a preparation for surgery during these years, even when first ether, and then chloroform, were deemed unsuitable anesthetic agents and exchanged for others.

The late 1840s saw the decline of both ether and mesmerism. The magnetic fluids dissipated from the surgical scene during the "ethereal epidemic": but ether's success evaporated as well a couple of years later. By the end of the decade, chloroform had superseded it as the agent of choice. According to contemporary accounts, this was because ether anesthesia was usually preceded by a stage of "exhilaration"—the state associated with ether frolics. The association of ether with drunkenness and with mesmerism could not be eradicated as long as this entertaining phenomenon persisted; nor could the surgeon demonstrate complete control over the subject. Chloroform, on the other hand, generally bypassed the stage of exhilaration. As one surgeon put it, "The time of the surgeon is saved [and] . . . the patient has not the same degree of tendency to exhilaration and talking." One moment the patient was a conscious subject, the next, he or she was a body on the operating table.

As for the longer-term effects of anesthesia,

**Dr. Robert Liston was professor of surgery at University College London and the acknowledged master of the early Victorian surgical stage.**



Victorian hospital reports suggest that it did not result in an increase of successful surgeries. Death rates for surgery were still very high from loss of blood and from infection. The assumption that anesthesia must have caused such a revolution is a sign of the success of the campaign to create a perfect profile for ether anesthesia in the pages of the *Lancet* for 1847, a veil dropped over the messy controversy surrounding the emergence of inhalation anesthesia.

The controversy over anesthesia cannot be explained in terms of a simple duel between the establishment and the fringe, since it was the construction of mesmerism as deviance that was at stake. Mesmerism, then ether, and later chloroform were seen as potentially important tools in the construction of a professional relationship between surgeon and patient; mesmerism, then ether, then chloroform were marginalized within a short space of time. One of the most general lessons of this story is that we tend to think of great scientific and medical discoveries as being independent of their original cultural and social contexts. When these contexts are reconstructed, the process of discovery can become less of a single, isolated, and sudden event, and more of a choice between competing alternatives, whose merits look very different when they are understood from the perspective of the people of the time. □

*This article was adapted from Alison Winter's Seminar Day talk in May 1998. Winter, who earned her BA from the University of Chicago in 1987 and her PhD from the University of Cambridge in 1993, has been assistant professor of history at Caltech since 1994. Her book Mesmerized: powers of mind in Victorian Britain, published by the University of Chicago Press, will appear this fall.*