History of Anesthesia
Thatcher
HISTORY OF ANESTHESIA
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With Emphasis on the Nurse Specialist

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22 Illustrations
TO THE WOMEN

WHO MADE ANESTHESIA AN ART

THAT IT MIGHT BECOME A SCIENCE
Preface

A goodly number of histories of anesthesia have already been published: *Triumph over Pain* by Rene Fülöp-Miller, *Victory over Pain* by Victor Robinson, *The History of Surgical Anesthesia* by Thomas Keys, *Man against Pain* by Howard Raper, and *The Development of Inhalation Anaesthesia* by Barbara Duncum are outstanding examples of recent years. With the exception of Duncum's work, these histories try to isolate man's search for relief from the pain of surgical operations from the media in which the search was conducted. And a characteristic of all of them seems to be a tendency to emphasize the place of the physician and the dentist as relievers of pain, with the result that the authors have overlooked philosophic, historic, anthropologic and legal implications that deny to medicine and dentistry exclusive rights in this province.

The purpose of this work is to extend the knowledge of anesthetists about themselves beyond the framework of personal reference and of already published histories. If the place of the nurse as an anesthetist receives special emphasis in this history, it is because in the others she has been derogated or ignored.

The plan of the work is to look at the administration of anesthesia as an historic development, rather than at the discovery of agents and methods as being of primary historic significance. Since history treats of the way in which man, individually and collectively, uses his energy and the energy of nature, the men and the women who were the instruments of collective man in his search to conquer the pain of surgical operations are the heroes and the heroines of our story.

While of necessity the name of an author appears on the title page of any book, no book, and particularly a history, is the work of one person. The material of this story has been drawn from many published sources and from many persons, all of whom have spared no effort in helping to unearth from old records heretofore unpublished facts. I am very grateful to all of them for their help. At the same time I wish to make special mention of the assistance of the members of the History Committee of the American Association of Nurse Anesthetists—Gertrude L. Fife, R.N., formerly Director of
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Virginia S. Thatcher
Introduction

Any difference between the methods and the results of relieving physical suffering in the pre-Christian era and those in the early nineteenth century we can see, from the vantage point of the twentieth century, to have been only a matter of degree. While a hundred years ago the tendency of the time was to slough off old authoritarian restraints and patterns of thinking, the usual approach to an understanding of disease and the care of the sick lay along the same old paths. In 20 centuries the business of coping with human ills had changed little, for the simple reason that men's ideas about disease, for the most part, had continued to flow along the same conduits of thought. Consequently, the discovery of surgical anesthesia had significance not only for its own sake but also as a sign of the coming of a new day.

Medical practice in the mid 1800's was a scientific anachronism. On every side the practical benefits of science gave convincing testimony of what could be accomplished by an objective study of nature. For 200 years the interests of students of nature had ranged from "the decay of meat to the composition of the stars." But, while the professional descendants of the alchemists, the chemists, learned how to apply the principles of quantitative analysis and to express results theoretically in approximately mathematical form, while Italian and French anatomists reveled in the relaxation of restraints against human dissection, while the microscopists turned their attention to the microcosm and the astronomers to the universe, and while men generally became interested in science for its own sake and founded societies for the promotion of scientific knowledge, the physician continued to purge and bleed—practices whose rationale extended back to schemes of world organization of the Greek philosophers.

In some respects the physician erred inexcusably; in others there was good and sufficient reason. The delivery of the new concept toward nature as elucidated by Sir Francis Bacon in 1620—that "man could conquer nature by observation and experimentation and that the conquest of nature was more important than pro-
ficiency in the speculations of the schoolmen”¹—was slow and painful with regard to the relief of physical suffering. The tedious business of disproving prior speculations about the human body, its structure and its function, the causes of disease and the rationale for therapy had to go hand in hand with a fresh inquiry into the causes of phenomena. Although the two centuries from the seventeenth into the nineteenth saw the clinical identification of specific disease entities (Thomas Sydenham, 1624-1689), the correlation between clinical observations and pathologic findings on postmortem examination—gross pathology (Giovanni Battista Morgagni, 1682-1771) and tissue pathology (Marie-François-Xavier Bichat, 1771-1802)—and the use of mathematics to prove or disprove the efficacy of therapy (Pierre-Charles-Alexandre Louis, 1787-1872), the practical effect of the new learning and investigation was to confuse practitioners. The props of their old systems had been pulled out from under them, and the processes of science, being so arduous, were able to offer them nothing in their place. At the same time, it was most difficult to convince practitioners that methods must be found to bring forward incontrovertible proofs and that theory had to be supported by experimental evidence.

Not only were the investigations in physiology, anatomy, pathology and microscopy more destructive of old concepts than constructive of new, but practitioners ignored the developments that would have been useful to them. Percussion was fought even by the pupils of its proponents (Leopold Auenbrugger, 1722-1809, and Jean-Nicholas Corvisart, 1755-1821) because they neglected the proper precautions and were distressed rather than helped by the new diagnostic method. Conservatives maintained that the stethoscope (René-Théophile-Hyacinthe Laennec, 1781-1826) was not adaptable to use in practice. During the Civil War, 250 years after the introduction of the clinical thermometer, probably not half a dozen were used in the largest Union Army.

The mongrel ancestry of the nineteenth-century practitioner only complicated the situation. Even today the relief of physical suffering is not the exclusive province of medicine or of a separate profession of physicians, for medicine, like chemistry and astronomy, grew directly out of primitive magic and myth. This, in addition to per-

sisting beliefs in supernatural causes and cures for suffering, and the social stigma attached to the use of the hands and to the application of knowledge to practical ends, as well as reverence for the reasoning methods of the ancients, conspired to make the forebears of the modern physician represent all classes of people and all shades of indoctrination: primitive and ancient priests and priestesses, Roman and Greek philosophers, both male and female, lay persons, such as the owners of the great Roman estates, medieval monks and nuns, alchemists of both sexes, astrologers, lithotomists, bonesetters, barber surgeons, midwives and apothecaries. The nineteenth-century physician's position was complicated further by the continuing schism among the practice of internal medicine, surgery and obstetrics, particularly in Europe. Throughout Christian Europe until well into the eighteenth century, obstetrics and probably gynecology were practiced principally if not exclusively by midwives, and as late as the end of the nineteenth century a physician applying for a license in England was not examined in surgery or obstetrics.

The unproductive, hidebound nature of medical practice after the opening of the scientific era and the practitioner's indefinite professional status led to a growing public disgust, which was not alleviated by the state of medical education. In too many instances there was little superiority in the training of the orthodox physician as compared with that of the quack or the sectarian. It has been estimated that of the 3,500 physicians in practice at the outbreak of the American Revolution only 200 had medical degrees. In the United States the university-affiliated schools—of which there were four in 1800: Harvard, Pennsylvania, Columbia (King's College) and Dartmouth—were but tiny islands in the vast sea of fly-by-night medical colleges that mushroomed throughout the country during the first half of the nineteenth century. By 1850 every city had at least one medical school, and every state had one or more so situated as to be easily accessible to anyone who wished to hang out a shingle. A man of no particular training could attend lectures for a winter and emerge a full-fledged doctor. In England, as in the United States, anyone could assume the title of doctor or surgeon and practice with impunity. In both countries the young medics were characterized as "crude, coarse and ignorant." Preparatory education exacted from the students was left to the discretion of the preceptor or to the students themselves or to their parents.
So small was the measurable difference between the orthodox physician and the quack during this period that the law was at a loss to differentiate between them. The few states in the United States that had enacted laws regulating medical practice between 1769 and 1830 one by one began to abandon them; by 1845 ten states had repealed all licensing regulations, and only three made any pretense of enforcing existing laws. On the Continent attempts to control quackery also failed because the laws could not be enforced.

If the practitioner of the time had little to recommend him to a public that had quickened to the doctrine that suffering on this earth was not to be endured because of promised transports of joy in heaven, the hospital had less. Until the establishment of the voluntary type hospital in the United States early in the 1800's hospitals held a more prominent place in the history of mendicity than in the history of asylums for the sick. Until the paying patient arrived on the horizon in the nineteenth century, hospitals existed primarily for the purposes of providing refuge for paupers and abandoned children and orphans, isolation for victims of the plague, which scourged Medieval Europe regularly, and of cholera, which cut down thousands but a little more than a century ago, and a retreat for disabled servants of the state. Basically, hospitals were almshouses for the indoor relief of the poor and, as such, often had a closer similarity to prisons than to institutions for the tender, intelligent care of the sick. The rise of the voluntary hospital did not change the picture. Although in the hospitals managed by religious orders the Sisters performed the nursing tasks with gentle devotion, hospitals from the time of the Thirty Years' War (1618-1648) until the hospital became a scientific institution were propagators of disease and, with few exceptions, were dirty, unventilated and overcrowded, the care of the poor sick being left to lay nurses without any motivation of religious devotion, aged inmates or women who could get no other employment and were willing to include menial tasks with nursing.

Thoroughly fed up with calomel and bleeding and having little respect for the medical profession and a just horror of being committed to a hospital, it is little wonder that the ailing citizen showed a preference for the quack or the patent medicine. However, oddly enough, the prevailing skepticism about internal medicine and the
tracing of disease to lesions in specific organs by the clinical pathologists had a salubrious effect upon surgery. In Europe, at least until the eighteenth century, surgery not only had been a degraded manual art but was looked upon with repugnance by the public because of the suffering and almost certain death from infection that attended it. Consequently, it was restricted to surface manipulations and was, for the most part, traumatic surgery, opening the body cavity being forbidden because of sure disaster; many of the descriptions in surgical texts belonged more to the realm of theory than to that of practice. However, from the beginning of the nineteenth century, with the development of pathologic anatomy, surgeons had motivation for improving their technics, and gradually, particularly in the United States where surgery never had been an inferior phase of medical practice, the esteem for surgeons came to exceed that for general practitioners.

Under these new conditions the ineffectiveness of the then-used methods for minimizing the pain of surgical operations was a source of constant discouragement. According to a listing of methods used about 1845—opium, water of nightshade, hebane, lettuce, mesmerism, strapping, compression of nerve trunks and noise—as taken from Velpeau’s *New Elements of Operative Surgery*, edited by Valentine Mott and published in New York in 1847, nothing new in the way of agent or method had been discovered for hundreds of years, which might be considered a sad indication of the state of the practicing surgeon’s curiosity.* Opium is listed in the *Ebers Papyrus* (1550 B.C.) along with 700 other drugs. The use of water of nightshade as a soporific can be traced with certainty to 1450 and probably was much older. Hebane is mentioned on a Babylonian clay tablet dating back to 2250 B.C. Lettuce was referred to by Dioscorides (fl. 60). Hypnotism (mesmerism) in one form or another probably antedates historic time. Strapping above the point of operation in order to numb the nerves originated in the sixteenth century, if not in the Hebrew circumcision ceremonial. Noise to divert the patient undoubtedly had its beginnings in the jungle. These few, out of perhaps hundreds of agents and methods—includ-

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* Velpeau stated that “Recurring back to the usage of the ancients, M. Hirckman [sic] has recently maintained that we may perform the most extensive operations without causing pain, if we make the patient respire a certain quantity of stupefying gas . . . to avoid pain in operations, is a chimera that we can no longer pursue in our time.”
ing pressure on the carotid sinus to produce momentary insensibility, coca, hemp, mandragora wine, soporific sponges and snow and ice water—had survived the test of time, unrewarding as was the result of their application.

While medicine floundered in the early part of the nineteenth century, and surgery took a few feeble steps toward improving its position, one group of practitioners, the dentists, found their business flourishing. Up to that time dentistry had suffered, as had surgery and obstetrics, from the stigma of being a manual craft and had clothed itself in the trappings of guildlike secrecy. With the exception of physicians who of necessity were required to practice some dentistry, all dentists, prior to the opening of the Baltimore College of Dental Surgery in 1840, were self-trained or trained as apprentices by preceptors, and until 1880 the preceptor-trained dentist was the chief source of supply. However, several things operated to put the dental practitioner in a happy position during the early 1800's. The first was the introduction of porcelain teeth about 1774 in Paris, and the second was the popularity of gold fillings and the ability of a prosperous citizenry to pay for them. Undoubtedly, to this boom in the dentists' business may be assigned the important role they played in the application of agents to produce insensibility to pain. For, unlike the surgeon, whose contact with a patient was a one-time proposition, the dentist had to keep his patients coming back.

Where, then, did the healing art stand at the time of the discovery of the anesthetizing properties of ether? And, more important, what was man's attitude toward physical suffering—its source and its relief and his endurance of it? While the supports had been knocked out from under dependence on philosophic and supernatural considerations for the answers for human ills, the effects were not widespread. To be sure, nature was painfully being forced to reveal her secrets, but the fact that, with few exceptions, they were not immediately or widely applicable to the relief of human suffering allowed for the persistence of the use of systems of rationalism and empiricism in therapeutics. Methods and instruments for diagnosis and mensuration had been developed, but the average practitioner could see no benefit in them. Medicine having failed to keep pace with practical science, the public turned to quacks and sectarians—Grahamism, Thomsonianism, mesmerism and phrenology—and
dosed itself on patent nostrums. Medical education was so shallow that even the law could not distinguish between the regular physician and the quack. All hospitals, including the voluntary hospital that accepted paying patients, were primarily charitable agencies for the indoor relief of the poor, and nursing in the secular institutions was a task for only the most ignorant wretches. However, there was a growing conviction among the people that suffering was not to be endured and that in science there certainly must be answers for its causes and its relief. The intellectual climate was favorable not only for the discovery of the anesthetizing properties of ether but for the development of a scientific medicine in the century that was to come.
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