



BULLETIN OF ANESTHESIA HISTORY



VOLUME 25, NUMBER 3

OCTOBER 2007

The Founding of the Anesthesia History Association and, What Next?

By *Selma Harrison Calmes, M.D.*
Co-Founder, Anesthesia History Association

Brief histories of the AHA's beginning have been written already—after all, we are historians as well as anesthesiologists! The one on the AHA's website (see www.anes.uab.edu/aneshist/AHAHistory.pdf), is a useful summary. A briefer one is in my introduction to the AHA's collected newsletters, *Anesthesia History Association Newsletters, 1982-1995*. The early newsletters in that volume also document the development of the AHA as it happened. This particular AHA history, written to mark the 25th year of the AHA's founding, will add personal aspects of the events and, most importantly, ask thought-provoking questions about the future of the organization.

The Idea Develops: The idea for an organization of anesthesiologists interested in their history came in May, 1982. Drs. Wilhelm Erdmann and Josef Ruprecht from the Department of Anesthesiology at Erasmus University in Rotterdam, the



Joseph Ruprecht, who planned the 1st International Symposium on the History of Anaesthesia in Rotterdam

Netherlands, thought of an international symposium on the history of modern anesthesia. They were able to put this on in May, 1982. This was the first International Symposium on the History of Anaesthesia; others followed

A UCLA colleague, respiratory physiologist Richard Patterson, was on sabbatical at Erasmus during the planning period and heard about it. Dick is the one who really stimulated my interest in anesthesia history. He had been at Columbia University before coming to UCLA and had



The AHA Newsletter editors (Ron Stephen, Doris Cope, Selma Calmes) with the newly published collected newsletters.

worked closely with Virginia Apgar. After he found out I was interested in history, he began telling me funny stories about Apgar (she was quite a character) while we were racing around UCLA's ORs, trying to keep our residents out of trouble. After hearing a few Apgar stories, I thought, "Someone needs to preserve these," and began writing notes on my scrub pants. Later, the notes went onto index cards and into a folder.

When Dick returned to Los Angeles from Rotterdam, he enthusiastically told

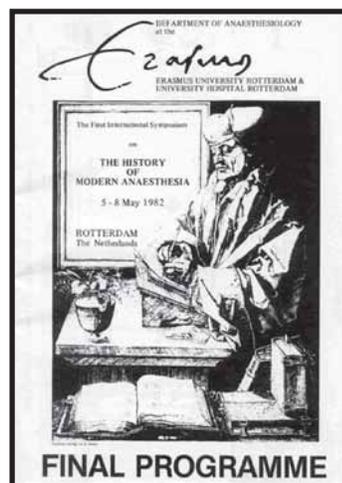
me about this planned history meeting and said, "Oh, why don't you write an abstract, and we can go—they have great parties in Rotterdam." He kept pushing, so I turned out an abstract on the development of the Apgar Score and sent it in. In early May, 1982, Dick and his wife and daughter and my husband (I was newly married—this was our honeymoon) and my 13-year-old daughter took off for Holland. There I was to meet the most amazing collection of distinguished anesthesiologists, people with names I'd heard often in daily work—MacIntosh and Jackson-Rees, for example. I was astounded that they were friendly and welcomed me, a total unknown in anesthesia.

The meeting and its social events were terrific (Dick was right—the Dutch hold



The Rotterdam City Hall, where the idea came during the reception

great parties!), and the best was the banquet night. A reception preceded it at Rotterdam's glittering City Hall and then we moved to a yacht club for dinner. Although I usually don't drink, there were numerous white-coated waiters going around the reception with silver trays full



Cover of the meeting's program

Continued on Page 4

History at the ASA Annual Meeting October 13-17, 2007, San Francisco, CA

Forum on the History of Anesthesiology

Treasures of the Wood Library-Museum

Monday, October 15, 2007

2:00 PM to 4:00 PM

Moscone Center North, Room 130

Moderator: Douglas R. Bacon, M.D., M.A.

Professor of Anesthesiology and Medical History

Mayo Clinic College of Medicine

The Diaries of Noel Gillespie—An Adventure in Collecting and Publishing

Mark E. Schroeder, M.D.

Associate Professor of Anesthesiology

University of Wisconsin School of Medicine and Public Health

The Annotated Rare Book Room Collection—Anesthesiology's Heritage

Patrick Sim, MLS

Paul M. Wood Librarian

Wood Library-Museum of Anesthesiology

The Laureate of Anesthesiology

Doris K. Cope, M.D.

Professor and Vice Chairman of Pain Medicine

Department of Anesthesiology

University of Pittsburgh School of Medicine

Remembered Giants—the Living History Collection

Mary E. Warner, M.D.

Associate Professor

Mayo Clinic College of Medicine

WLM Publications—the Backbone of Anesthesia History

Kathryn E. McGoldrick, M.D.

Professor and Chair

Department of Anesthesiology

New York Medical College

Panel on Anesthesia History

Counterfactual History in Anesthesiology: What If...

Tuesday, October 16, 2007

2:00 PM to 4:00 PM

Moscone Center South, Gateway Ballroom 102

Co-Moderator: Douglas R. Bacon, M.D., M.A.

Professor of Anesthesiology and History of Medicine

Department of Anesthesiology

Mayo Clinic College of Medicine

Rochester, Minnesota

Co-Moderator: Maurice S. Albin, M.D., M.Sc.

Professor of Anesthesiology

University of Alabama at Birmingham

Birmingham, Alabama

What if the chloroform plot to hijack the Monitor had succeeded?

Maurice S. Albin, M.D., M.Sc.

What if Ansil Caine had not Supported John Adriani when he Arrived at Charity Hospital in New Orleans?

David M. Broussard, M.D.

Ochsner Clinic Foundation

Anesthesia Department

New Orleans, Louisiana

What if Cyclopropane had been used in Toronto?

Kim E. Turner, B.Sc.Ph., M.D.

Assistant Professor

Departments of Anesthesiology and Community Health and Epidemiology

Queen's University

Kingston, Ontario, Canada

What if Lord Nuffield had not given \$2 million to University of Oxford to create four chairs, including a Chair of Anaesthetics?

David B. Waisel, M.D.

Assistant Professor of Anesthesia, Perioperative Medicine and Pain Medicine

Harvard Medical School

Children's Hospital of Boston

Boston, Massachusetts

What if the American Board of Anesthesiology had Agreed to Certify Nurse Anesthetists in 1938?

Douglas R. Bacon, M.D., M.A.

What if there was no Relative Value Guide?

Babatunde O. Ogunnaike, M.D.

Associate Professor of Anesthesiology and Pain Management

University of Texas Southwestern Medical School

Dallas, Texas

Anesthesia History Association Silver Anniversary Dinner Meeting

Monday, October 15, 2007

6:00 PM to 9:00 PM

Carnelian Room
555 California Street, 52nd Floor
San Francisco, CA 94104

The C. Ronald Stephan Resident Essay Contest

The Anesthesia History Association (AHA) sponsors an annual contest for the best essay on the history of anesthesia, pain medicine or intensive care. This contest is open to all residents and fellows in anesthesiology. The purpose of the contest is to promote interest in the history of anesthesia and to advance professionalism in the specialty. Additionally this contest offers residents and fellows the opportunity to present their paper at a national meeting and to publish the results of their research. The Resident Essay Contest is named for Dr. C. Ronald Stephan an anesthesiologist who was a revered teacher, researcher, clinician and anesthesia historian. Dr. Stephen died at age 90 in 2006.

The essays must be written in English and be approximately 3,000 to 5000 words in length. Judging will be in two stages. In the first stage the finalists will be chosen. These finalists will be announced at the AHA dinner meeting during the American Society of Anesthesiologists annual meeting. From these finalists, the winners will be chosen on the basis of both content and delivery during the spring meeting of the AHA. All the finalists will present their papers in a session of the AHA attended by a panel of judges. The panel of judges will make their final decision based on originality, appropriateness of topic, quality of the research, and delivery. Because the final judging will be at the time of the presentation at the spring meeting of the AHA, all who enter must agree to attend the meeting at which the presentations are made. Essays must be submitted by the 10th of September in order to be eligible for presentation at the spring AHA meeting of the following calendar year. If not received by that date they will be considered for the next year's contest.

The first, second, and third place winners receive \$500, \$200 and \$100 respectively. Awards will be made during the AHA spring meeting. The three winners are required to submit their essays to the peer-reviewed *Bulletin of Anesthesia History* for possible publication.

To enter, essays should be sent to:

William Hammonds, MD, MPH
Professor, Department of Anesthesiology and Perioperative Medicine
Medical College of Georgia
1120 15th Street
Augusta, GA 30912
whammonds@mccg.edu

**Entries must be received on or before
September 10, 2008**

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The *Bulletin*, formerly indexed in Histline, is now indexed in several databases maintained by the U.S. National Library of Medicine as follows:

1. Monographs: Old citations to historical monographs (including books, audiovisuals, serials, book chapters, and meeting papers) are now in LOCATORplus (locatorplus.gov), NLM's web-based online public access catalog, where they may be searched separately from now on, along with newly created citations.
2. Journal Articles: Old citations to journals have been moved to PubMed (www.ncbi.nlm.nih.gov/PubMed), NLM's web-based retrieval system, where they may be searched separately along with newly created citations.
3. Integrated History Searches: NLM has online citations to both types of historical literature -- journal articles as well as monographs -- again accessible through a single search location, The Gateway (gateway.nlm.nih.gov).

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Founding . . . *Continued from Page 1*

of very small glasses of a clear liquid, which turned out to be Dutch gin. Everyone seemed to enjoy what was in these little glasses, and I decided to indulge too—they went down very easily. After a few glasses, Rod Calverley from San Diego (we had met a few months before, introduced by a mutual friend in San Diego) and a new friend, anesthesiologist Jacob Mainzer from Albuquerque (a bibliophile with an interest in anesthesia history), found ourselves together, perhaps pausing from the Dutch gin. We were having such a good time, and Joseph made the comment, “We (meaning Americans) should organize.” That seemed like a good idea to Rod and me, perhaps thinking of what fun parties we could have, and we agreed.

The banquet that followed is worth mentioning because it illustrates the friendships and camaraderie that can develop in the setting of an anesthesia history meeting. The European attendees knew to dress formally for a banquet: men wore tuxes and their military medals, and the women were in long gowns, wearing fancy jewelry and carrying furs. We in contrast were dressed very simply. Feeling somewhat out-of-place, we found seats at a table where we didn't know anyone. It turned out we were with some of the most notable leaders of anesthesia! Sir Robert MacIntosh, (of the famous Oxford Department and the



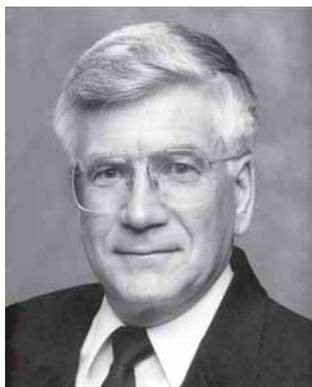
Joseph Mainzer of Albuquerque, NM, who made the comment, “We should organize.”

MacIntosh blade, among many other achievements) entertained my new husband, an airline pilot, with tales of his WW I biplane pilot adventures, his capture after being shot down and his attempts to escape. The very distinguished J. Alfred Lee informed my husband that his suit (my husband's best) would be called a “leisure suit” in England and talked about the new edition of his well-known text which was to appear soon. William Mushin was nearby and told me his adventures visiting Virginia Apgar. Jackson-Rees, whose



First anniversary

NRB circuit and N₂O-curare technique were standard at Children's Hospital of Philadelphia when I was there, came by to chat. Everyone was so nice to us, total un-



Rod Calverley (1938-1995) and Selma Calmes, who carried it out



knowns in the anesthesia world. It was truly a night to remember. This was the setting for the idea of an organization.

Carrying It Out: After our return home, Rod and I discussed strategy. We decided to send letters asking about interest in an association to the Americans who attended the Rotterdam meeting, to Wood Library-Museum Board members and to members of ASA committees that might relate to history. The response to our query letter was overwhelmingly positive; the time was right to organize. A questionnaire was then sent to those who responded, asking about possible structure and functions. Fifty-one of the 79 questionnaires were returned, an amazing 66% response. Fifty of 51 responders said we should organize, clearly determining what to do. North America was to be the focus, and we would not be international yet. Suggested activities from responders were, in order of interest, listings of individual collections, a newsletter, a list of museum collections, sponsor meetings at the ASA and serve a social function.

We arranged a meeting room through

the ASA office for the next ASA meeting, which was in Las Vegas. Forty-seven people attended that organizational meeting in October 1982. Our name was tentatively selected, dues would not be collected for one year (contributions and the WLM were our financial resources that first year), and Rod and I were elected Co-chairs until elections could be held at the next ASA meeting. An Organizing Committee (Mike Broennle, Burdett

Dunbar, Elizabeth Frost, Jacob Mainzer and Clayton Petty) was appointed to write the ByLaws. The first *Anesthesia History Association Newsletter* appeared in Decem-

ber 1982; I was the editor, and was until Ron Stephen took over in April 1986. It was most primitive, typed on a manual typewriter and cut-and-pasted together on my kitchen table. Announcements about the organization were placed in the ASA's and American Association for the History of Medicine's (AAHM) newsletters, and we got 25 more responses. The mailing list was now at 175, and the first newsletter was sent in December 1982.

The first official AHA meeting was in Atlanta in 1983. Retired Mayo Clinic Li-



First Honorary Member: Mayo Clinic librarian Thomas Keys



*First speaker:
noted historian
James Harvey
Young of
Atlanta, GA*

brarian Tom Keys, author of the first significant text on the history of anesthesia, *The History of Surgical Anesthesia*, was awarded the first Honorary Membership. Bill Neff, retired chair of anesthesia at Stanford, presented a heraldry-style shield he designed for the organization. James Harvey Young of Emory University in Atlanta, a noted historian of the American drug industry and quackery, was the first dinner speaker. His title was "Crawford Long in his Medical Setting." The tradition of a before-dinner toast to Dr. Ralph Waters (the father of academic anesthesia), using glasses of water of course, was begun. Dr. Lucien Morris, an Aqualumnus, gave the first such toast. The organization's name was confirmed, and ByLaws were passed. As in Rotterdam, the camaraderie and enthusiasm of the group was striking.

It was at this meeting that we began a tradition (which later faded away) of taking advantage of local historical resources, either speakers or topics or both; dinner programs patterned after those of the early anesthesia societies (folded rectangles with a photo or drawing on the first page; many attendees collected autographs on the programs, as in the past), and centerpieces that stimulated the table's discussion on anesthesia history topics. These linked us to the anesthesia history of the local area and to the traditions of past anesthesia society meetings; the centerpieces stimulated interaction between table members and got us thinking about aspects of anesthesia history we might not have considered. The AHA was launched into the future!

Growth: I needed help with newsletter production and found one nearby. Debbie Lipscomb, wife of another UCLA colleague Denham Ward (now at Rochester) had an editing and layout business that many of us used for various projects. Debbie's first tissue for us was in November 1983, and what an exceptional one it was! Our logo, a Leroy Vandam drawing of the Morton inhaler, was taken from a

pamphlet published when the ASA met in Boston. Debbie's assistance was absolutely critical for this first major AHA function. Another essential person for the newsletter and the organization was AJ Wright, librarian in the Department of Anesthesiology at the University of Alabama, Birmingham. AJ was a very early leader in computer-based searches and provided—and still provides—lists of recently published items related to anesthesia history in each newsletter edition. His first column appeared in March 1985, (vol 3, #2). Because these report from a very wide variety of sources, they are extremely useful to busy anesthesiologists, saving them the time of searching themselves. Also, it was not necessary for us to learn new strategies for searching (Google was not around then); we could rely on AJ. In 1994, the AHA and WLM joined to publish the newsletter together, and it became the *Bulletin of Anesthesia History*. At this time, AHA membership was lagging somewhat and this formal link of the two historically oriented organizations strengthened both. The newsletters up to that time were collected and published as a book, *Anesthesia History Association Newsletters (1982-1995)* in 1996. This was another cooperative venture with the WLM.

The annual dinner meeting continues to be held each during the ASA meeting. It also now serves as award time; various awards have been developed to stimulate work and interest in anesthesia history. The David Little Prize, named for the author of *Classical Files*, essays first published in *The Survey of Anesthesiology* and then collected in book form by the WLM, is awarded annually for the best publication in anesthesia history for that year. This prize was first awarded in 1985. The AHA's Residents Essay Prize is awarded at the dinner, this year for the 13th time.

Other pivotal steps in AHA development were the addition of a spring meeting, first in 1993 in Louisville, to provide an opportunity for those doing research to present their work in a more informal setting. That same year, history papers and a history panel were added to the ASA meeting. Finally, a web site was developed by AJ Wright at www.anes.uab.edu/aneshis/. Others had attempted this before but could not maintain it. AJ's site also serves as a central place for anesthesia history information (along with the WLM's web site), such as his monthly calendar of events related to anesthesia history.

Why did the AHA develop when and how it did? The time was just right: Anesthesia had accelerated growth and devel-

opment, beginning in WWII. It was time to contemplate where we were and where we had been. Many anesthesiologists—actually world-wide—seemed to feel that need, based on the response at the Rotterdam meeting. Rotterdam, a city devastated in WWII but now gloriously recovered, provided the setting for the AHA's beginning, and we owe them thanks for that.

And, the people were right: Joseph Mainzer had the creativity to make the remark, "Why don't we organize?" Rod knew everyone and was the perfect "front man" to stimulate interest in the AHA. I was the behind-the-scenes "grunt" who turned out what was needed.

What about the Future? Organizations must change and grow over time. We have achieved our original purpose of bringing together those interested in the history of anesthesia and sharing information and sources. What next? How should the AHA change and grow, to maintain ourselves?

There are some basics to think about: We "do" history. For that, we need historians, real historians. We need to maintain and strengthen links with the premier organization of medical historians, the American Association for the History of Medicine (AAHM). We should consider meeting just before their annual meeting (they meet in the spring), as an affiliated clinical specialty organization, so some can stay on to attend the AAHM meeting and historians might attend our meeting. This is encouraged by the AAHM, and other groups of clinicians interested in history do meet before the AAHM's meeting. As casual friendships develop and as we hear their papers, we learn how they think, how they approach resources, and we have the opportunity to have them ask questions back and forth about topics and methods. This will help develop rigor in our scholarship. Part of this link would be to be sure our announcements get into their newsletter, so historians learn about us. This has been happening recently and hopefully will be continued.

Another basic is our structure; can it maintain itself over time? Is it dependent on just a few people to do the work? Should we be more formally structured? I had not thought about this until the HAS meeting in Cambridge last year. Their business meeting was a real business meeting. Should we be more like them?

A final part of the basics is growing the next generation of interested anesthesiologist-historians. This has been really stimu-

A Fascinating Relationship: Isabella Herb, M.D., and William J. Mayo, M.D.

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This article has been peer reviewed for publication in the October 2007 issue of the Bulletin of Anesthesia History.

Considering the important role she played in the history of anesthesia, surprisingly little is known or written about Dr. Isabella C. Herb. The many “firsts” to her credit illustrate the depth of her long and productive career. She was one of the first female physicians at both the Mayo Clinic in Rochester, MN, and Presbyterian Hospital in Chicago, IL, the first physician anesthetist and pathologist at the Mayo Clinic, the first anesthesia department head at Rush Medical College and Presbyterian Hospital, one of the first women to publish an article on anesthesia, the first anesthetist to use ethylene gas during an operation, and one of the first members of multiple professional anesthesia societies, including the first female, and tenth overall, president of the American Association of Anesthetists of the society in 1922.¹

A long correspondence over twelve years between Dr. Herb and William James Mayo, M.D., is preserved in the Mayo Foundation Archives in Rochester, Minnesota. It is warm and friendly, lacking animosity. They discuss items of mutual interest, and Dr. Herb often includes personal issues, such as her car, in their letters. In many ways, this correspondence goes beyond medical colleagues and symbolizes the ultimate good relationship between an employee and her former boss. Yet, it leaves the reader wondering about the character of their relationship and perhaps even more tantalizing, the potential role of Dr. Herb in the recommendation or recruitment of Dr. John Lundy to lead the section of regional anesthesia at the Mayo Clinic.

Dr. Herb: A Brief Biography



Fig. 1. Dr. Herb circa 1900. Image Courtesy of the Mayo Foundation Archives.

The details of Dr. Herb's life are scarce and little has been written about her. She was born in Clyman, WI in 1863 or 1864 to George and Mary Ann Coler. She moved to Houston, Texas after marrying musician Charles Herb in the early 1880's. After his tragic death in a barge accident only a few years later, she returned to the Midwest to continue her education.² She earned a Certificate of Pharmacy and graduated from the Northwestern University Woman's Medical School in Chicago in 1892. Some sources suggest she studied pathology at Johns Hopkins or in Europe¹ before completing an internship at Mary Thompson Hospital for Women and Children in Chi-

cago. She remained there as Assistant to the Medical Staff until 1894, then worked as their Dispensary Physician and Superintendent.² It was during this time that she began to give anesthetics.¹

In 1897 she practiced at Augustana Hospital in Chicago as both anesthetist and pathologist.¹ There she learned the method of open drop ether administration from its pioneer, Dr. Lawrence Prince, and published her first anesthesia paper. The chief of surgery at Augustana at that time was Dr. Albert Oschner, a personal friend of the Mayo brothers. Through this connection, Dr. William J. Mayo offered her a position at the Clinic and she moved to Rochester, MN in 1899.^{1,2}

Anesthesia: the Early Years of the Mayo Clinic

The story of the Mayo Clinic begins with Dr. William Worrell Mayo, a frontier physician practicing medicine and surgery in Rochester, MN in the late 1800's. When a tornado struck Rochester in 1883, he cared for the injured. Although his sons William James and Charles Horace assisted, there were more patients than they could manage. The elder Dr. Mayo asked the local Sisters of St. Francis to help. They agreed. Mother Alfred Moes, O.S.F., decided from this experience that Rochester needed a hospital. The sisters would fund construction and provide nursing care if Dr. W.W. Mayo would work as the chief of the professional staff. In 1889, St. Mary's Hospital opened with Dr. Mayo and his sons as the physician staff.²

The first operation at St. Mary's Hospital was an eye enucleation performed by Dr. Charles, assisted by Dr. William J., with their father administering the anes-

thetic. It was common practice at the time for another physician, generally a surgeon, referring physician or trainee, to administer anesthesia. In their early years, the brothers administered anesthesia for their father, including Dr. Charles' first foray into anesthesia at age 12.³ As they gained surgical experience, the roles reversed.³ However, as their practice grew, the Mayos agreed they would need additional personnel to administer anesthesia. Dr. W.W. Mayo was aging and wished to spend less time in the practice. However, the Clinic had not yet established any formal teaching programs so there were no trainees to administer anesthesia. The Mayo brothers did not feel they could recruit physicians solely to administer anesthesia. They opted to train nurses for the task. Their first partner, Dr. Stinchfield, trained Dinah Graham to be the first nurse anesthetist at Mayo. She worked only briefly before passing on the position to her younger sister, Edith Graham. Edith had returned to her hometown of Rochester after studying nursing in Chicago ostensia then became the chief anesthetist at Rush Presbyterian Hospital. Her reasons for leaving Mayo remain unclear. A sabbatical to study in Europe was accepted practice at the time and the Mayo brothers personally visited Europe to learn new surgical and medical techniques. The quest for new medical knowledge alone does not explain her permanent departure.

Although she had not published on the topic by the time she left Mayo, it is clear from her later work that she was a strong proponent of all-physician anesthesia. In early 1910 she wrote to William J. Mayo that, "It seems a travesty on justice that according to law no one but a licensed physician is allowed to prescribe drugs or perform the slightest operation, but persons with absolutely no training are administering anesthetics without hindrance."⁶

In contrast, the Mayo Clinic continued to use nurse anesthetists almost exclusively until 1920, fifteen years after Dr. Herb's departure. A second physician anesthetist at Mayo, Dr. Leda Stacy, served only for two years from 1908-1910 before moving to Dr. Christopher Graham's section of general internal medicine and five years later began the study of the use of intra-uterine radium. She had a very successful career at the Mayo Clinic serving as the head of the section of radium therapy from 1915-1919. She headed her own section of general internal medicine with a special interest in gynecology in 1917. She resigned from the Clinic in 1936.

The next physician anesthetist was not

hired until 1920. Dr. Gaston Labat was recruited from Paris, France specifically to teach percutaneous regional anesthesia;⁷ nurses still administered general anesthesia.¹ It was not until Dr. John Lundy's arrival in 1924 that physician-led anesthesia became possible.³ Perhaps this strong difference of opinion over which professional, physician or nurse, should administer all anesthetics, was a source of conflict, either with the brothers or with Ms.



Fig. 2. Dr. Herb in the 1930s. Image Courtesy of the Mayo Foundation Archives.

Magaw, that contributed to Dr. Herb's decision to leave the Mayo Clinic. But personal issues may also have contributed to her departure. It seems logical to speculate that a personal relationship or conflict, perhaps with the brothers, another surgeon, one of the hospital "administrators" or another member of the clinic staff made her position untenable.

The Letters—Insights into Herb's Life and Current Surgical and Medical Practice

The best supporting evidence for the theory that a personal conflict between Dr. Herb and Dr. Charles contributed to her departure is the long relationship she had with Dr. William J. after leaving the Mayo Clinic. There are a total of 22 letters written between the two from 1910 to 1922 in the Mayo Clinic Archives. However, no letters exist between Dr. Herb and Dr. Charles. Given the extent of her correspondence with his brother, this is puzzling, particu-

larly because she was the anesthetist assigned to Dr. Charles' cases. In all the letters, she mentions Dr. Charles only twice. On December 9, 1910, she expressed disappointment that she missed him when he was in Chicago.⁶ In January, 1912, after Dr. Charles had been ill, she wrote, "I would liked to have been with Charley and Edith [his wife] through their trouble but fate seems to keep me away from those I love most."⁸ Although it is possible they corresponded but the letters were lost, however this seems unlikely given the meticulous records the brothers kept.

These letters between Dr. Herb and Dr. William J., which have not previously been published or studied, provide insight into her personality and life, surgery and medical science at the time, and her relationships. (Figure 3) She had a well developed sense of humor. In the first letter dated December 9, 1910, she shared a joke about a man whose "diet" consisted of sitting three inches from the table and eating until his belly touched the table.⁶ Dr. Herb was enthusiastic about possessions. In several letters, she described the joy of owning a car.

Although this is understandable considering she commuted three to four hours per day prior to owning the car, she wrote, "Isn't it foolish to be so sentimental but I suppose that is one of my many short comings."⁹

Finances were a frequent source of stress during much of her career. An anesthesia practice did not reimburse well at the time, which may have been part of the reason she initially practiced both anesthesia and pathology. For example, she wanted to buy a Christmas present for her niece, but could not afford it.⁶ In January 1912, she declined an invitation to join the Oschners on a trip to Mexico, at least in part because of money.¹⁰ Her finances seem to have improved by the fall of that year as she wrote Dr. William J. she was considering a plan that "I think I can afford ...now, as my business is now bringing me in a good income."¹¹ Unfortunately, what she was planning and if she saw it through is lost to

Continued on Page 8

Herb. . . Continued from Page 7

history. A few years later, however, she again laments about her finances. Her car was in an accident, then stolen. The police recovered it, but it needed many repairs, "which means one bill after another till sometimes I get discouraged."⁹ Buying a new car was difficult because she felt she could not afford it.¹² These comments paint a picture of a devoted and expressive woman with a realistic approach to caring for herself.

Through this correspondence Dr. Herb's value of education, academic rigor and scientific study is apparent. She supported her niece's education, despite the financial strain, and felt rewarded by her excellent performance.⁶ In a December 1910 letter she describes a speech by a colleague Dr. Westbrook and criticized him for not having "his ideas systematized." She concludes he should not have spoken "without giving his subject more thought and preparation."⁶ Dr. Herb disapproved of a presentation by another colleague, Dr. Ableman, saying he could not prove his claims. She further faulted him for showing "an absolute disregard or lack of knowledge of the first requisites for research work."¹³ These comments illustrate the importance she placed on education and the scientific method, and bespeak of a close, confidential relationship with Dr. William J. Mayo.

The correspondence also discussed current medical beliefs and practices. For example, the medical community at the time had not begun to accept the idea that microorganisms could be etiologic agents of cancer. In a series of letters in the spring of 1912, Dr. Herb and Dr. W.J. Mayo discussed Dr. Ableman's theory that carcinoma was caused by a germ. They express regret that their mutual friend Dr. Oschner was ridiculed for supporting this idea;¹³ "there is about as much in it as there was to his contention that distilled water would cure diabetes."

They also discussed more practical surgical issues. For example, Dr. Herb told Dr. William J. of the hand problems Chicago surgeons experienced due to the formalin in the OR prep solution.¹¹ Dr. Will responded that at the clinic "seventy percent grain alcohol with a little camphor" was used and no problems were experienced.¹⁴ Assuming Dr. Herb passed this on to her surgical colleagues, it is interesting to think this informal communication may have changed the operating room practice at Rush-Presbyterian. Finally, the letters confirm the Mayo brothers' excellent national reputation. When discussing a

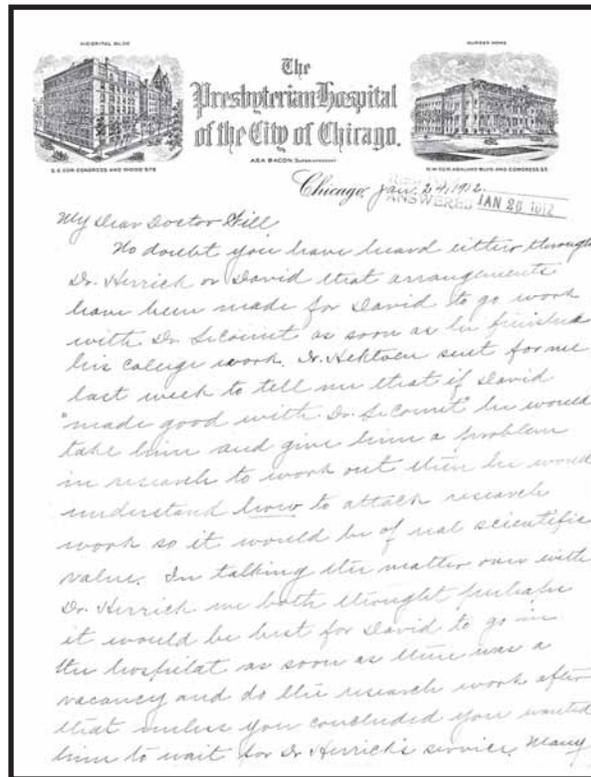


Fig. 3. Letter from Dr. Herb to Dr. William J. Mayo, January 24, 1912. Image courtesy of the Mayo Foundation Archive.

position for a young physician, she states it was easier for him to obtain because Drs. William J. and Charles were held in "high esteem" in Chicago. She told him her colleagues in the OR respected their publications¹⁵ and considered their five-volume work "Collected Papers" to be the best illustration of the recent advancements in medicine.¹¹

Dr. Herb and Dr. William J. Mayo: A Relationship?

Although nothing has been written previously to describe Dr. Herb's relationship with the Mayo brothers, it is clear from these letters that she had a close personal and professional friendship with Dr. William J. Mayo. Given his reputation as a leader and authority in his field, only a good friend would have been likely to openly critique his work. Apparently the Chicago surgeons were disparaging a description of an incision in a paper he published in the *Annals of Surgery*. Dr. Herb felt comfortable sharing these comments with him. Dr. Herb went as far as to suggest that he had not read the proof as "surely you would have noticed how obscure it is."¹⁶ Although unprompted, Dr. Herb told Dr. William J. Mayo that she did not like a portrait of him she had seen,¹¹ a level of

honesty generally shared only between good friends. In January 1912, she helped arrange for his son-in-law, Dr. David Berkman, to study pathology with the prominent Dr. LeCount in Chicago. In thanking her for her help, Dr. William J. wrote on Jan 13, 1912, "It is needless to say that we are all very grateful to you, as ever, for your kindness and loyal friendship which has known no break in all these years."¹⁷

By reading the entire available correspondence, one gets a sense that, although obviously close, perhaps Dr. Herb felt a closer personal connection towards Dr. Mayo than he felt toward her. Dr. Mayo promptly answered her letters the next day and used personal valedictions such as "Yours very truly," there are subtle differences in tone between the two correspondents. Dr. Herb initially addressed him as

"My Dear Dr. Will," while his letters started with "Dear Dr. Herb" with one exception, when he used the more personal "My Dear Dr. Herb." Initially her letters are handwritten, while his are always typed, which may have accounted for the more impersonal salutation on Dr. Mayo's part. She obviously felt comfortable discussing personal issues with him, but perhaps not in the written form. In the first letter, she says, "there are lots of things personal and otherwise that I would like to write about but—"⁹ The trailing "but" engenders tantalizing speculation. In multiple letters she asks Dr. William J. to telephone or visit her when he visited Chicago as she has much to discuss with him of a personal nature that she has not stated in her letters. One such request was emphasized with the underlined statement "Please do not disappoint me."¹³ Dr. William J.'s letters written in response often contain a reason why he did not or could not meet her request.¹⁸ Although she occasionally shared a joke or personal stories with him, the content of his letters are nearly entirely professional. For example, Dr. Herb apologized for writing too often, writing, "My fear of sending you an undesired letter may make me too cautious,"¹¹ and "Forgive me for writing such a long letter but I just

can't help it. There is so much I want to say to you and I haven't said it now."¹¹

As the years passed, the tone of her letters changed, becoming slightly less personal and more formal. Dr. Herb began typing her letters, losing the personal connection found in handwritten notes. The content became more professional in nature, focusing on surgical issues with fewer stories and requests for personal visits and phone calls. In the final letter, she changed the salutation to the more formal "Dear Dr. Will" from the more personal "My Dear Dr. Will" she had always used.¹² Between December 1910 and November 1912, they wrote at least monthly. A long hiatus in correspondence ensues until January 1916, after which they wrote as infrequently as every other year. The first letter in 1916 does not mention a prolonged period of a lack of correspondence so it is possible they continued to correspond, but the letters were lost. However, we do know the frequency of their correspondence decreased and Dr. Herb seemed to express some annoyance about it. In November 1919, a mutual acquaintance inquired about Dr. Will. Her response was "I told them that I had not seen or heard any thing about you for six months or more so I did not know."⁹

Dr. William J. wrote the final letter in February 1922. He told Dr. Herb when he would be visiting Chicago next and wrote "I want to talk to you about several things when we have an opportunity."¹⁹ This is the first time he had been the one to request a personal meeting. It is not known if they met, and if so, what they discussed. Although she continued to practice anesthesia and publish until 1941, and Dr. Will was active in the affairs of medicine until his death in 1939, there are no letters extant after 1922. Given the many important advances in surgical and anesthetic technique during those 17 years, particularly her introduction of ethylene, and the arrival of a former Rush medical student John Lundy at the Clinic, one would have thought that their professional correspondence would have continued.

The Matter of John Silas Lundy

Although the written correspondence ends in 1922, Dr. Herb's later work, especially the introduction of ethylene anesthesia, would have been known to all the surgeons at the Mayo Clinic. In 1924 Dr. William J. Mayo traveled across the country to board a ship bound for Australia and New Zealand. On a stop in Seattle, Washington, he attended dinner at the Kings County Medical Society and met a young physician specialist in anesthesia

named John Lundy. In recounting the meeting, both Lundy and Mayo recalled that they had discussed ethylene anesthesia. Dr. Lundy inquired if the agent was used at the clinic; Dr. Mayo replied that it was not. By the end of the meeting, Dr. Mayo had invited Dr. Lundy to come to Rochester and head anesthesia.²⁰

It is not readily apparent if Dr. Lundy had worked with Dr. Herb while he attended medical school at Rush where Dr. Herb was on the faculty. Clearly, she had at least remotely influenced him, or he would not have discussed his use of ethylene anesthesia. The minutes of the Mayo Board of Governors record a telegram from Dr. Mayo announcing he had found an individual to head anesthesia and asking them to ratify his offer, which they did.^{21,22}

Minutes of the Board of Governors of the Mayo Clinic 1920. Mayo Foundation Archives, Rochester, MN

In both Dr. Lundy's and Dr. Mayo's papers there are no letters to Dr. Herb about this matter. Yet, it seems almost inconceivable, given the warm friendship between Dr. Mayo and Dr. Herb, and the fact that Dr. Lundy was a medical student at Rush and at least theoretically known to Dr. Herb, that they would not have corresponded about Dr. Lundy being hired by the clinic.

Conclusions

Dr. Herb was clearly an influential woman in the history of anesthesia. Her time at the Mayo Clinic, however was brief. After reviewing the years of correspondence between her and Dr. William J. after she left the clinic, Dr. Herb emerges as a sensitive woman with a strict devotion to science, patient care and education. However, the questions of why she left the Mayo Clinic, an institution dedicated to the advancement of those three principles, and the reason for the lack of correspondence between her and the surgeon she worked with, Dr. Charles, remain unanswered.

The relationship between Dr. William J. Mayo and Dr. Isabella Herb defies conventional description. The wording in the letters evokes many contradictory thoughts, yet the language of the early twentieth century may not accurately reflect the emotions of the parties involved a century later. Clearly, Dr. Herb was a remarkable woman who faced the challenges of being a single professional woman with courage and charm. Dr. William J. Mayo's help may have been an essential step in securing her professional life, as any mentor helps their protégé. The personal business mentioned

in the letters may have been merely career, health, financial advice, or job opportunities for friends or themselves; items Dr. Herb felt would better be discussed face to face. Like many people who worked in the Mayo Clinic, personal and professional ties to the institution were maintained, and Dr. Herb remains another pioneer anesthesiologist with a strong connection to the Mayo Clinic.

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Music in the Operating Room: Harmony or Discord?

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The role of music in the operating room (OR) has a history that is almost 100 years old. It has been alternately lauded and disparaged. Music has been said to decrease the attention to a patient's status or to improve the vigilance of the anesthesiologist and efficiency of the surgeon. Many ORs became "wired for sound" decades ago; this is not a new concept in this era of "boom boxes" and iPods®.

In 1914 Dr. Burdick, an anesthesiologist, was credited with placing the first phonograph in an OR.¹ A surgeon, Dr. Kane, complimented him by stating that "his selection of records admirably adapted to the tastes and temperament of the (patients)." Music was a "means of calming and distracting my patients from the horror of the situation when going under the anesthetic and during operations performed partially or entirely with local anesthesia." This was especially of benefit for a nervous and anxious patient. Also, it allowed the operating staff to concentrate on the surgical procedure and not on having to verbally calm or restrain the patient. As Dr. Kane stated, "it is not uncommon for nervous patients to beg to have the phonograph continue, should it run down, and many of them converse animatedly with the anesthetist on the subject of the pieces being played throughout the entire operation."

Subsequently, Dr. Burdick described how a patient entering the OR is often tearful "with such feelings of horror and dread as to be on the verge of collapse."^{2,3} After noting the beneficial effects of music in hospital wards, he described how a phonograph in the OR functioned "as a diversionary means during operation under local anesthesia." (Figure 1) He stated that 95% of patients desired to hear music, and only 2% objected. Preoperatively he talked with the patient to ascertain the appropriate music and played this in a subdued tone. Allowing patients who were undergoing procedures with local anesthesia to listen to music and be pleasantly distracted meant that it was not necessary for the surgeon and anesthetist to keep the patient distracted. Dr. Burdick used soft music to assist with inhalational inductions and emergence during general anesthesia, although not all patients were helped. Mu-



Fig. 1. Showing the use of the phonograph during an operation under local analgesia in the surgical clinic of the Kane Hospital. (From reference 3, courtesy of Patrick Sim and the Wood Library-Museum of Anesthesiology.)

sic was "a soothing medium for the operating staff during a long, harassing operation," relieving strain and anxiety, and thus improving patient care. The same phonograph was used to assist with convalescence in the postoperative period.

Later it was speculated that pleasant music would take the patient's mind to some more pleasant thought and could help with the transition of ether induction through the excitement stage.

It is not merely the monotonous feature that is of value in the use of subdued music, but also the fact that it arouses the listener's memory and imagination to circumstances outside the immediate situation and stimuli. It reduces the resistance on the part of the patient, and may thus shorten the second stage of ether administration. In addition the *far away* (italics original) effect of the music may enhance the pleasure which many, who have come through operations, speak of as the delightful experience of riding gradually out into space.⁴

Making an analogy to the effect of music upon the soldiers in the recent World War, the author stated that with patients soon to undergo anesthesia and surgery "no further demonstration is needed of the fact that music has the power of arousing courage."⁴

The value of music used during spinal

anesthesia was soon discovered.⁵ McGlenn described how heavy sedation added to spinal anesthesia could result in hemodynamic complications and possibly death. He looked for "anything which would appeal to the senses sufficiently to keep the minds of the patients occupied . . ." and found that "music best fulfilled the requirements." Although initially used with only spinal and local anesthesia, music became an overall part of "creating a better atmosphere for all patients coming to the operating suite." It also became an important part of decreasing tension and improving the working conditions in the OR, both during operations and during the preparation time for other surgeries.⁵

In 1933 Dr. Adolph Erdmann presented the "so-called silent gramophone" to the 12th Annual Congress of Anesthetists.⁶ This device was the standard electric turn-table in which the external speakers had been eliminated and which used telephone-like ear pieces that could be placed on the patient's head or pillow. Therefore, the music was directed specifically to the patient and not to an individual OR or suite. Dr. Erdmann's silent gramophone, developed by Graybar Electronic Company, was widely publicized in the scientific or professional journals such as *Scientific American* and *Medical Economics* and in the lay press such as the *New York Times*.

Music via headphones was described for nitrous oxide analgesia and anesthesia during dental procedures.⁷ The authors

stated that the “music found to be most effective had a smooth, even tone and contained no conflicting, harsh or startling instrumentation.” They also stated that “the music the patient prefers is the most suitable.” Their top six choices were: Clair De Lune (Debussy), Moonlight Sonata (Beethoven), Dream Pantomine (Humperdinck), Evening Star (Wagner), Forest Murmers (sic) (Wagner), and Poeme (sic) (Fibich). By using music during nitrous oxide analgesia, the authors stated the advantages they saw with this technic:

- (1) a smooth induction as exemplified by the complete absence of excitement, struggling, or delirium; (2) absence of retching or vomiting even after a recent meal; (3) rapid and complete emergence from the anesthetic state so that the patient requires no assistance or support when leaving the dental chair; (4) minimum chair occupation time, and (5) no undesirable effects in the poor risk patient.⁷

A smooth induction and emergence with minimal adverse effects that allows a rapid turnover between cases, even in the poor risk patient: what more can one ask for in the practice of anesthesiology?

After reiterating the benefits of music, Brown et al. described an innovative system of providing individualized music to several patients at the same time.⁸ A central room in their complex of six ORs contained three tape recorders, and wiring connected these tape recorders to the ORs. Each tape recorder had a 4-hour tape of music which ran continuously, and three types of music were available: classical, popular, and children’s. In the ORs the patient could choose which type of music to listen to through headphones. Also, in the adjacent preparation rooms the patients could listen to individualized music via small wall speakers.

From Duke University in 1950 came a paper describing the value of music during plastic surgery.⁹ According to the authors, “at the beginning of our study about six years ago, it was apparent that music, although not alone, will help to eliminate fear, establish confidence and by producing a congenial environment will help to allay apprehension. The introduction of music in the patient’s room, the anesthesia room, the operating, and the recovery room simplifies the task for the surgeon, the house officers, the nurses, and perhaps of even great importance, the patient.” They described the use of portable radios and record players in the ORs, beginning in

1944, and stated that “the use of music has made our operating rooms a more pleasant place in which to work.” Also, they discussed how patients used cushioned “aviator type of headphones” during local, regional, and spinal anesthesia. To illustrate the importance of music to the patient, the authors stated that speakers were installed throughout the hospital and in patients’ rooms when Duke Hospital was built in 1929. So Duke appears to be a leading center in using music to smooth out the unpleasant aspects of surgery and convalescence.

More recent studies indicate the beneficial nature of music when elderly patients undergo cataract surgery, the most commonly performed surgery in North America.¹⁰ The authors used a standardized protocol for administering midazolam with either fentanyl or alfentanil followed by a retrobulbar block. Four categories of patients receiving different auditory input were evaluated: 1) relaxing verbal suggestions, 2) white noise, 3) OR noise, 4) relaxing music. As the authors stated, “patients who received relaxing music were more satisfied with the operative experience and its auditory accompaniment and felt more relaxed than patients in any of the other three groups.” Coincidentally, the surgeons were more satisfied with the patients in the music group.

Another recent study evaluated patients undergoing urologic procedures and lithotripsy of renal and ureteral calculi with spinal anesthesia supplemented by propofol sedation or alfentanil analgesia.¹¹ The authors found that significantly less propofol sedation or alfentanil analgesia was required when patients listened to music via occlusive headphones. However, there was no difference in systolic and diastolic blood pressures, heart rate, or pulse oximetry values. The authors did note that the occlusive headphones eliminated the background noise of the OR, and this lack of extraneous noise may have played a role in their favorable results.

While significant evidence shows that music is beneficial for patients, a recent editorial showed that conflict exists about its appropriateness for OR personnel.¹² When required to perform complex arithmetic tasks, surgeons’ psychological stress parameters were highest with no music, next highest with Pachelbel’s Canon in D (the reference music), and lowest with music that the surgeon selected.¹³ The recorded stress responses were skin conductance fluctuations, blood pressure, and heart rate. It is interesting to note that a classical recording such as Pachelbel’s Canon

in D, often used in stress relaxation therapy, “was not related to better performance and only somewhat to decreased physiological reactivity.” Although all the surgeon-selected musical pieces were instrumental, the authors noted that the variation in surgeon-selected music “appeared to be largely a matter of individual taste.” The authors of an earlier study evaluated the effects of familiar and unfamiliar rock music and familiar and unfamiliar easy-listening music during performance testing. They stated that “familiar music of whatever type significantly increased concentration, improved performance . . . and reduced the classical deterioration of vigilance performance that occurs over time.”¹⁴

It has been shown that music in the OR interferes with the ability to appreciate heart tones and lung sounds during auscultation. Also, interference with the sound of alarms can occur. In one report, 62% of anesthesiologists liked music in the OR, 51% felt that music was a distraction when problems were encountered, and other common complaints were that music often reduced vigilance and impaired communication with OR personnel.¹⁵

In another study, the effect of rock or classical music during simulated anesthesia monitoring was evaluated.¹⁶ The study participants were undergraduate and graduate students, not anesthesia-related personnel. Although the participants reported a preference for working without music, they were better able to detect changes in vital signs with moderate levels of rock or classical music. It is possible that music may help with mental awareness and that the rhythm and pitch of the music provides a background against which changes in monitor tones are more easily recognized.

As more sub-specialization occurs in anesthesiology, we anesthesiologists may find that we want to have colleagues with broadcasting backgrounds. Dr. Frank Gentile, an anesthesiologist at Naperville’s Edward Hospital, made headlines in Chicago when he described his use of music from CDs and his iPod® in the OR.¹⁷ According to Dr. Gentile, the selection of music “falls sort of naturally to anesthesiologists.” So, with medical school plus four to five years of residency plus a collection of music, and maybe a little broadcasting training, you too can have a rewarding job.

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Continued on Page 12

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AHA... *Continued from Page 5*

lated by Doug Bacon's leadership of his residents at Buffalo and Mayo Clinic. An area I think might be improved on is providing specific mentors for WLM Fellows. Some seem to need help developing their ideas and synthesizing their research when done; could the AHA work with the WLM and provide a mentor for each Fellow? Perhaps this relationship could continue after the Fellowship, to see if the person could be still developing.

Nationally, it would be useful to see if we could possibly develop new centers of interest in anesthesia history, so the different geographic areas are covered. In this area, I think about the many good individual institutional histories that have been published in the last few years. How can these be combined into a panoramic view of the development of anesthesia in the US since WWII? This may not be possible, but we could at least think about it. (I got to thinking about this while working on the story of Tom Keys' book on the history of anesthesia, published in 1945, and realized we need an updated one.)

Other areas to think about for the future include how to keep pace with very rapid changes taking place in our specialty. It is phenomenal how anesthesia practice is changing! How can we document this? Another issue is all the informal stories that float around the departments or are told at get-togethers. They often really tell what an individual was like or what was driving a department/surgeon/whatever to act at a critical point. How can these be captured, and how can we be sure of accuracy?

I urge everyone to think about these ideas, and hopefully serious attention will be given to an analysis of the AHA's future. The AHA has come a long way since October 1982. Many dedicated and wonderful people have contributed. Thinking back over the years, the friendships and camaraderie are the best parts of the AHA and these have been my greatest personal joy. I hope this always continues!

Herb... *Continued from Page 9*

Foundation Archives, Rochester, MN.

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The Early History of Methadone. Myths and Facts

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Introduction

The literature on the discovery of methadone abounds with myths and fallacies. This review attempts to correct those errors and to present the known accurate facts. Some questions will remain unanswered as many records have been lost and the main protagonists are now deceased.

The Myths

Myths on methadone are widespread in the lay¹⁻³ as well as in the medical⁴⁻⁶ literature. Claims have been made that:

1. Hitler, anticipating the blockade of foreign sources, ordered the I.G. Farben scientists to develop a synthetic narcotic. But Hitler's Four Year Plan of 1936, ordering Germany's autonomy from foreign raw materials, does not mention opium and the I.G. records show no requests for synthetic analgesics.⁷⁻⁹ Meperidine, discovered in 1937, and methadone, synthesized in 1939 derived from researches on spasmolytics started at Hoechst in the early 1930's.
2. Morphine was unavailable in Germany during World War II. Thus deprived of morphine, the German armed forces had requested the production of methadone and had used it extensively. However, the extensive German medical records

of World War II clearly show that morphine was the main narcotic used in military as well as in civilian practices. Even meperidine, released in 1939, was rarely used. The Wehrmacht's medical literature clearly show that it did not use methadone during the war. Large depots of morphine still existed in Germany as late as in early 1945 (personal communication, professor Dr. W.D. Müller-Jahnke, Marburg, Germany, 2004). Turkish opium (Papaverum Somniferum) remained available to the European pharmaceutical industry throughout the war. Moreover, twenty percent of the morphine produced on the Continent at the time was derived from "opium straw," made out of the milled dried capsules and stems of Papaverum Setigerum, the wild poppy growing throughout the Mediterranean regions.¹⁰

3. The discoverers of methadone had called it "dolophine" in honor of Adolf Hitler. Another explanation was that the name "dolophine" derived from the French words "dolor" (pain) and "fine" (end). In fact "Dolophine" was the trade name given by the firm Eli Lilly when it released methadone commercially in the U.S. in 1947. The name was derived from the Latin work "dolor" (pain) and the radical "phine" from morphine to indicate its narcotic action.¹⁰ The French words for "pain" and "end" are respectively "douleur" and "fin."

Hoechst's Discovery of Compound Va 10820

The history of methadone starts in the

early 1930's in Hoechst laboratories.^{10,12,13} Founded in 1863, the firm Hoechst in November, 1924 joined eight other German chemical concerns to form the giant cartel I.G. Farben Industrie, A.G. (Interesse Gemeinschaft, Aktien Gesellschaft). The union was formalized on December 2, 1925.^{8,9} In the early 1930's Hoechst had 300 plants along the Main river, 12,000 workers and a large stable of scientists and patent attorneys. Even at the end of World War II, Hoechst's facilities and programs of drug research raised the admiration of the visiting Allied teams.^{14,15}

In the early 1930's, Hoechst scientists started looking for new synthetic atropin-like spasmolytics to treat asthma and renal and biliary colics.^{10,12,16} In July, 1937 Eisleb and Schaumann synthesized the compound Va 8909 (meperidine), a phenyl piperidine ester with mild spasmolytic but marked analgesic actions.¹⁷ The drug was released commercially in 1939 under the trade name "dolantin."^{10,12,16,17}

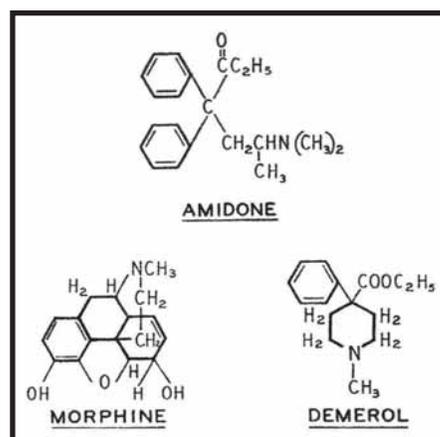


Fig. 1. Formula of Narcotics

Two other Hoechst chemists, G. Ehrhart and M. Bockmühl, noticing that both morphine and meperidine had a central car-

Continued on Page 14

Methadone. . . *Continued from Page 13*

bon atom, postulated that this atom may be responsible for both drugs analgesic action (Figure 1). In the winter of 1937-8 they started synthesizing a series of diphenyl methanes with the central carbon atom; adding various side-chains, they created over 300 compounds.¹⁸ In late 1939 (the documents with the exact date have been lost), adding a ketone side-chain to the diphenyl methane radical, they obtained compound Va 10820 (6 dimethyl amino-4-4 diphenyl-3-hepatone) with marked analgesic but weak spasmolytic activities in laboratory animals. Further animal testing in early 1940 confirmed that compound Va 10820 had five to ten times the analgesic potency of meperidine.^{10,12,14-16,18} In mid-1941 the drug was given the generic name of "amidon" and on August 5, 1941, Hoechst applied for a patent (DRP 865314) to the Deutsche Reich Patent office in the names of Ehrhart and Bockmühl. Because of difficulties caused by the war and, later, by the U.S. military authorities, the German patent was only granted on February 5, 1953. The various published patent numbers and dates^{7,14,19} seem to apply to manufacturing processes and by-products. The DRP number 865314 and the August 5, 1941 date are the data given by the inventors,^{10,20} and the Hoechst and German Patent offices.

Clinical trials in civilian and military patients started in the fall of 1942 (according to Ehrhart)¹⁹ or in January, 1945 (according to Schaumann).^{19,12,14} The records of those trials have disappeared.^{7,13} Despite the claim made in 1949 by a Hoechst researcher²¹ those clinical trials are unlikely to have been extensive because of the war situation.^{9,15,18} At the end of the war, several Hoechst scientists claimed that those trials had been disappointing because of severe side-effects (respiratory depression, loss of balance) possibly due to excessive doses.^{19,12,14,18,22} Animal and human studies suggested that amidon, besides being a good analgesic, also was a potent cough depressant; and Hoechst had planned to release it as an oral anti-tussant.^{14,15} There was no evidence of tolerance or addiction.

By 1945 the Hoechst researchers had also isolated a L-enantiomer (a difficult process) and found that it had a much greater analgesic activity than the racemic form.¹⁴ This enantiomer was probably impure and not until 1965 did Hoechst release the purified derivative for clinical use. Samples of the L-isomer and records of experiments done with it were found by Allied investigators at the Frankfurt head-

quarters of the firm Bayer in the summer of 1945.²³ The analgesic superiority of the L-enantiomer was confirmed by the Lilly researchers in 1945,²²⁻²⁵ but the isomer was never developed commercially in the U.S.

The End of World War II at Hoechst

As the U.S. troops drew near Frankfurt on March 23, 1945, the Hoechst directors shut down the plants and dismissed their workers. The plants were occupied by the Americans on March 29, 1945, but were reopened one week later to produce sorely needed drugs for the civilian population. On July 5, 1945, the I.G. Farben cartel was dismembered and all its properties, including its patents and records were confiscated. The following day, Hoechst was reconstituted as a separate entity and placed under U.S. military control.^{8,13,26} Professor C.L. Lautenschlager, director of the pharmacological division, and two of his assistants who had led clinical trials on concentration camp inmates were indicted as war criminals.

In May, 1945 the Hoechst facilities were visited by a civilian team sent by the U.S. Department of Commerce (Technical Industrial Intelligence). The four man group, led by Dr. E.C. Kleiderer, Ph.D., a brilliant 38-year-old organic chemist at Eli Lilly, visited the buildings, interviewed Ehrhart, Eisleb, Bockmühl and Schaumann, reviewed with them the research done during the war, and seized drug samples and scientific records. They showed great interest in compound 10820 (amidon). Their thirty-page report was published by the Department of Commerce in July, 1945.¹⁴

A seven man team of B.I.O.S. (British Intelligence Objective Sub-Committee) of the British Ministry of Health and Home Office also visited Hoechst from August 20 through August 27, 1945. They too were interested in amidon and brought back to London samples and records. Their 95-page report was published in 1945.¹⁵

Deprived of their records, the Hoechst discoverers of methadone were unable to publish their World War II researches until after their files were returned in late 1947 or early 1948.^{16,18}

Early Development of Methadone in the U.S.

The U.S. Department of Commerce released the Kleiderer report in July, 1945.¹⁴ The department sold the expropriated I.G. Farben patents and records to the U.S. pharmaceutical firms for one dollar^{13,26,27} and in the late 1940's methadone was sold in the U.S. under various trade names:

Adanon (Winthrop), Methadone (Upjohn, Abbott, Mallinckrodt, Merck-Sharp-Dome) as oral or parenteral analgesic and Methajade (MSD) as an oral cough depressant. Inquiries and a search of the literature suggest that Eli Lilly was the only U.S. firm which led extensive laboratory and clinical studies.

After his return to Lilly in the fall of 1945, Dr. Kleiderer and his team of organic chemists used Hoechst data to synthesize amidon while Drs. K.K. Chen and C.C. Scott, two brilliant physicians and pharmacologists tested the drug in laboratory animals, human volunteers and patients at the Indianapolis City Hospital. They confirmed the German findings: amidon had one to two times the analgesic potency of morphine, was effective orally, had a long duration of action, was a good anti-tussant, was non-addictive but in large doses depressed the respiration. The L-enantiomer was distinctly more analgesic than the racemic form. Chen and Scott reported their preliminary findings in March, 1946 At the Annual Meeting of the American Society for Pharmacology and Experimental therapeutics in Atlantic City.²⁴ They published several more articles in 1947 and 1948 and their clinical results were confirmed by trials conducted at several Midwestern medical centers. Excellent reviews of that work were published in 1948 and 1949.^{22,25}

In early 1947 Eli Lilly received F.D. A. approval and released the drug commercially under the trade name "dolophine."¹¹

The claim of amidon's lack of addicting liability was soon challenged by H. Isbell and A. Wilker, two physicians at the U.S. Public Health Service (U.S.P.H.S.) in Lexington, Kentucky and N.B. Eddy in Washington, D.C. In December, 1947, they reported that methadone, given parenterally to animals and to addicted and non-addicted patients, clearly caused dependency and tolerance (although less so than morphine) and that it should be listed as a controlled substance.²⁸ They repeated their warning in subsequent reports^{25,29,30} and sent their recommendations to the Bureau of Narcotics of the Treasury Department. On July 31, 1947, methadone became a controlled substance.²⁷

On August 27, 1947, the A.M.A. Council of Pharmacy and Chemistry gave amidon the generic name of Methadon (an abbreviation of diphenyl METHAmido-DiphenylheptanONE). Why the final E of heptanone was dropped and how it later reappeared is unknown.

J.F. Maddux, a physician at the U.S.P.H.S. hospital in Fort Worth, Texas

was the first, in 1950, to substitute oral methadone for morphine and heroin in addicts.³² In November, 1963, V.P. Dole, soon joined by M. Nyswander and M.J. Kreek, opened the first methadone clinic in New York, despite objections and even threats by the Bureau of Narcotics.^{27,32}

The Early Development of Methadone in the United Kingdom

The B.I.O.S. team which visited Hoechst in August, 1945 submitted its report¹⁵ and the seized German documents to the Health Ministry. The latter offered the patents and records to the British pharmaceutical firms. Methadone in Great Britain received the generic name of miadone. In September, 1947 Burrough and Wellcome released it commercially under the trade name of Physeptone.³³ Glaxo released it as Heptalgin at an unknown date.

The first British trials (in fact crude pilot studies) were published in 1947.³⁴⁻³⁷ They confirmed the good analgesic and



Fig. 2. Picture of Gustav Ehrhart

anti-tussive actions of miadone but suggested that the euphoria it often caused may indicate an addicting liability. Two obstetrical trials^{34,36} were discontinued because of severe newborn respiratory depression. Cases of miadone addiction had already been reported by 1955¹⁹ and in 1971 the Medical Health Regulatory Agency of the Health Ministry placed it on the list of controlled substances (Misuse Drug Act).

The Early Development of Methadone in Post-War Germany

Drs. Ehrhart and Bockmühl rejoined Hoechst in late 1945. When Bockmühl died

in 1949, Ehrhart succeeded him as chief of the pharmacological division. Dr. Schaumann left in 1947 to join the department of pharmacology at the University of Innsbrück. The records seized by the Allies were returned to Hoechst in late 1947 or early 1948 and the discoverers of methadone could only publish their work in July, 1948,¹⁶ 1949¹⁸ and at the German Congress of Pharmacology in 1951.¹²

A few crude animal studies²¹ and clinical trials^{18,38,39} were published in Germany in 1949. They essentially confirmed the early U.S. studies, including the lack of addicting properties. In 1947 or 1948 Hoechst had re-applied for its 1941 patent but it was not granted until February 5, 1953. The reason for the delay is unclear but may have been due to difficulties with the U.S. authorities of occupation.⁷

In February, 1948 the firm released methadone commercially under the trade name of Polamidon. The drug was sold in tablets and in ampuls for parenteral injections. By 1950 it was Hoechst's third most popular product.²⁶ By then the fact that the drug was highly addictive had become evident; and in January, 1953 it was placed under the German "Opium Law" (controlled substances).^{7,13}

In 1951 Hoechst released polamidon-C, a combination of methadone and fenpripine (compound Va 9980 or aspasan) an analog of methadone synthesized by Ehrhart and Bockmühl in 1943; Fenpripine had strong spasmolytic but no analgesic activities. The drug was indicated for renal and biliary colics.¹³ In 1965 Hoechst discontinued its production of polamidon (racemic methadone) and replaced it with L-polamidon (levo-methadone), the pure levogyre isomer of methadone. The purification seems to have been a tedious and expensive process. In Germany Hoechst also sells L-polamidon-D, a combination of L-polamidon and fenpripine.

Short Biographies of the Discoverers of Methadone

1. Gustav Ehrhart (1894-1971) (Figure 2)

G. Erhart was born in Ludwigshafen on December 21, 1894. His studies of organic chemistry at Heidelberg University were interrupted by World War I, in which he served as an artillery officer. He returned to Heidelberg in 1918 and received his Ph.D. (Chemistry) in 1922. He joined the Hoechst department of chemistry



Fig. 3. Photo of Max Bockmühl

in 1923 and became its director in 1925. He returned to Hoechst in late 1945 and in 1949, at Bockmühl's death, became head of the pharmacological department. From 1953 on, he also taught chemical pharmacology at Mainz University. He was made Dr. Honoris Causa. of the Universities of Mainz, Frankfurt and Stuttgart and of the Giessen Superior Technical School. He died in Mainz on December 11, 1971. A small, unpretentious man, an excellent tennis player and oarsman and a gifted cello player, Erhart was one of the outstanding chemists of his generation.

2. Max Bockmühl (1882-1949) (Figure 3)

M. Bockmühl was born in Wuppertal-Barmen (Ruhr) on September 2, 1882. After receiving his Ph.D. in organic chemistry in 1910, he joined the firm Hoechst and became head of its pharmacological division in 1930. He was made Dr. Honoris Causa. (Medicine) of Frankfurt University. He died in Bad Soden/Taunus on January 5, 1949.

3. Otto Schaumann (1891-1977) (Figure 4)

O. Schaumann was born in Vienna

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Methadone. . . *Continued from Page 15*

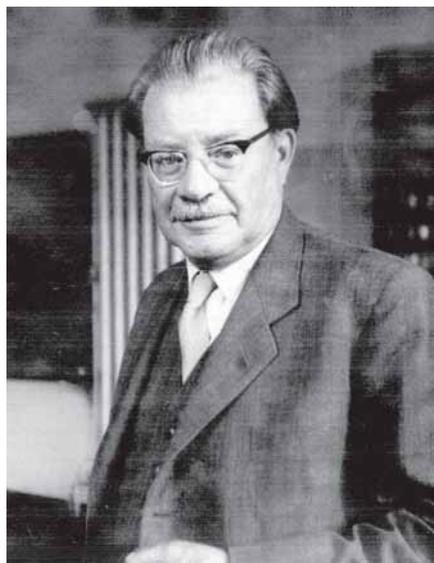


Fig. 4. Photo of Otto Schaumann

on April 14, 1891. He received his M.D. degree from the University of Vienna in 1914, and then served four years as a medical officer in the Austrian army in World War I. Returning to Vienna in 1918, he studied pharmacology under Professor (and Nobel Prize winner) H. Fischer and followed the latter to the Munich Superior Technical Institute. He joined Hoechst in 1925, heading its pharmacological division over the next twenty years and studying analgesics, spasmolytics and local anesthetics. In 1945 he joined the pharmacology department of Innsbrück University, eventually becoming its chairman and dean of the faculty of medicine. An avid mountain climber in his younger years and, later a rugged hiker, he was a gifted piano player. He died in Innsbrück on January 24, 1977.

Summary

This review refutes some enduring myths surrounding the discovery of methadone and presents the known accurate facts of its creation and its early development in Germany, the United States and Great Britain from 1939 to the early 1960's.

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Obituary

Jess B. Weiss, M.D., 1917 – 2007

by *Ellison C. Pierce, Jr., M.D.*

President, American Society of Anesthesiologists, 1984

President, Anesthesia Patient Safety Foundation, 1985-1997

Jess B. Weiss, MD, 1979 ASA President, died on June 28 in Fort Lauderdale, Florida, of heart and kidney failure. It is appropriate that an obituary for him be published in the Bulletin of Anesthesia History because of his contributions to the recent history of anesthesia, especially those in the realms of obstetrical anesthesia and proper approaches to the economics of anesthesia in the United States. Jess was absolutely adamant that the practice of anesthesiology, especially charges for services, must be based upon ethical considerations.

During his long career Dr. Weiss received three Distinguished Service Awards, those of the American Society of Anesthesiologists, the American Society of Regional Anesthesia and, uniquely for an anesthesiologist, the American College of Obstetricians and Gynecologists

Dr. Weiss, raised in Mt. Vernon, NY, played high school football and then graduated from the University of Alabama where, when he enrolled, he thought he might be able also to play football. One day of practice told him he was out of the league in both height and weight. Following college he entered medical school, first at St. Mungo's College of Medicine in Glasgow, Scotland, and subsequently, after World War II began, at Middlesex University School of Medicine near Boston. Jess met his wife to be, Shirley, on a blind date, December 7, 1941.

After serving in the Navy during the War, Jess returned to general practice in Boston, where he was occasionally called upon to administer anesthesia. He then entered anesthesia residency and fellowship at Massachusetts Memorial Hospital, Boston University.

Subsequently Jess was recalled into the Navy and, with Shirley and four young children, was sent to Guam as Chief of Anesthesia at the US Naval Hospital. At the conclusion of that tour of duty, he declined an offer from the Navy to continue in the service at the Bethesda Naval Hospital because he wanted to work in a teaching hospital. The Weisses often recalled to me the time they spent in Guam with great fondness because of the active anesthesia practice and training program, the pleas-



ant social life and ample opportunities to travel all over the South Pacific.

The next career step for Dr. Weiss found him at Boston Lying-In Hospital, Harvard Medical School, where he soon became chief of Anesthesia. This allowed him to begin his many contributions to obstetrical anesthesia. From an historical viewpoint, his major role in changing OB anesthesia from largely inhalational, often ether, to regional is very important. In addition he and associates examined maternal morbidity and mortality in a classic study which led to significant reductions in morbidity. He strongly supported the development of fetal monitoring. In another historical milestone, Jess modified the Tuohy epidural needle with the addition of "wings" to assist in placement and a more blunt tip, giving rise to the very popular Weiss needle, now used world-wide for epidural anesthesia.

After the Lying-In Hospital merged with the Brigham Hospital, Dr. Weiss became Vice Chairman of Anesthesia and Associate Professor of Anaesthesia, Harvard Medical School. During his tenure at Brigham and Women's hundreds of anesthesiologists from all over the world were trained, thousands of babies were born and not one mother died under his department's care. Dr. Weiss's publications in the field of obstetric anesthesia are numerous.

The other arena in which Jess made a

truly significant contribution was in the economics of the specialty. His greatest role in this arena was his major involvement in preservation of the ASA Relative Value Guide (RVG) after the Federal Trade Commission (FTC) accused several medical societies of fixing prices and secured consent decrees resulting in cessation of publication of their guides. While the ASA escaped notice of the FTC, it was accused of similar price fixing by the US Department of Justice. Uniquely, upon advice of Counsel, rather than agreeing to discontinue publication of its RVG, ASA during Jess's tenure as President fought the suit in Federal Court and won. The Court found that the RVG did not violate anti-trust laws. It would be difficult to overestimate the importance of this outcome for anesthesiologists practicing today.

From his long years of numerous visiting professorships and working in ASA, AMA, the World Federation of Societies of Anesthesiologists, Blue Cross and Blue Shield, the Council on Medical Specialty Societies, the Academy of Anesthesiology, the American College of Obstetrics and Gynecology, both the American and European Societies of Regional Anesthesia, the Anesthesia Foundation and other organizations, Jess and Shirley Weiss had many, many friends the world over, but especially in Scandinavia and Scotland as well as, of course, in the US. In addition to his presidency of the ASA, Jess served a number of other organizations in a similar capacity. At dinners of many society meetings, Shirley was frequently the social arbiter, making certain that friends found perfect places at perfect tables; I was often one of them.

Jess and Shirley retired to Pompano Beach, Florida, where she will continue to live. In addition to his wife of sixty-three years, Dr. Weiss leaves daughters Susan Friedman of Boston and Barbara Friedman of Los Angeles, sons Stephen of Philadelphia and Lewis of Miami, a brother Harold of San Francisco, a grandson Nick Friedman of Los Angeles, a granddaughter Jenefer Friedman of Boston and a great-granddaughter Cady Bubeck of Boston.

Silver Anniversary 25th Annual Meeting: Medicine and the Civil War in Middle Tennessee

by Selma Harrison Calmes, M.D.

Co-Founder, Anesthesia History Association

The spring meeting of the Anesthesia History Association was held May 3-5, 2007, in Nashville and was hosted by the Vanderbilt School of Medicine's Department of Anesthesiology. Dr. Bradley Smith of Vanderbilt was the Program Director. Additional sponsors were the Tennessee Society of Anesthesiologists, Tennessee Association of Nurse Anesthetists and the Middle Tennessee School of Nurse Anesthesia. The conference site was the Scarritt/Bennett Center, originally a college to train women missionaries. It came to Nashville in 1928. Its mission since 1988 is to foster cross-cultural understanding and spiritual renewal through conference-hosting and retreats. Its lovely 10-acre campus, with graceful buildings made of Tennessee stone and in collegiate gothic style, made a unique setting for our meeting. In keeping with our Southern location, the meeting's theme was "Medicine and the Civil War in Middle Tennessee."

The first day, many toured Battle of Nashville historic sites; Dr. Smith gave a lecture, "An Introduction to Anesthesia History," for those who stayed in town. The banquet that night was in a wood-paneled room (like an English manor house might have) decorated with memorabilia from the many foreign countries where graduating missionaries had served. Dr. Andrew Gaffney, Associate Dean for Clinical Affairs at Vanderbilt and the first physician in space, gave a dynamic video presentation of his time in space.

The second day began with a review of the AHA's history, and then there was a



panel on the Civil War in Middle Tennessee. Two physicians on the Vanderbilt faculty gave wonderful presentations on medical care in the Union and Confederate armies. Two outstanding local historians spoke on the Civil War battles in the Nashville area. Next, the resident finalists in the C. Ronald Stephen Award competition presented their papers. Finalists were Janey McGee (UNC), Jeffrey Zavaleta (U. of Texas Southwestern) and Aimee Kakascik (U. of Mississippi). Dr. Zavaleta won the competition with a paper on "Halothane Hepatitis Solved: The Role of Burnell Brown, MD, PhD."

The afternoon session featured a paper on greed and villainy in the father and son William Mortons, presented by Dr. Gerald Zeitlin. Then a unique panel, "The Visual History of Anesthesia," examined how visual media can be used to make anesthesia history interesting.

Dirk Wales, CEO of Rainbow Productions in Chicago, a long-time friend and supporter of the AHA, moderated and also spoke in his usual dynamic style. He demonstrated his new DVD of teaching films made by Dr. Ralph Waters at the University of Wisconsin in the 1920s-1930s (these were found by Dr. Betty Bamforth and previously released in VHS format), and suggested how to use them to raise in-

terest in anesthesia history. Each attendee received a copy to take back to their institution. Dr. Alan Sessler of Mayo Clinic spoke on the Living History project of the WLM, and Drs. Rafael Ortega and Albert Woo from Boston University demonstrated their efforts using digital medical to teach anesthesia history. Two concurrent sessions of free papers on a wide variety of subjects followed.

The last morning was a session of free papers; this resulted in lively discussions. A tour to Battle of Franklin sites and the Carter House Museum took place at the same time. Overall, the papers were very good and very interesting. The level of so-



phistication in historical research by our group is rising. Some new faces were seen. Fifty-six attended the meeting (including some guests from foreign countries), and everyone had a good time and enjoyed Southern hospitality and food.

Personally, I enjoyed seeing Nashville for the first time. The state's annual arts and crafts fair, a huge event, was across the street from our hotel during our stay. While exploring that, we discovered it was in Centennial Park, built in 1896 to celebrate Tennessee's centennial. (We also discovered alligator—gator—meat for sale in many food booths; see the pictures.) The Tennessee Centennial Exposition was held in the park that year. To our great surprise, we

Photos courtesy of Dr. Mark Schroeder.

found a full-size copy of the Athens' Parthenon and inside the building was a gigantic statue of the goddess Athena, painted in the original colors. Athena is missing in the real Greek Parthenon, so it was a treat to see how big and imposing the statue actually was. These structures celebrated Nashville's nickname of the Athens of the South," given because of the four colleges founded there in the 25 years after the Civil War. Other highlights were the train station now converted to a glamorous hotel and the many music publishers on "Music Row."

Congratulations to Dr. Brad Smith for his fine job of managing this meeting!

Book/Multimedia Education Award

The Anesthesia Foundation announces the Book/Multimedia Education Award to be presented 2008 at the American Society of Anesthesiologists Annual Meeting. This prestigious award will be awarded for excellence and innovation in books or multimedia with significant impact on the science and practice of anesthesiology, critical care, or pain medicine.

No more than two-author submissions are eligible.

The award is \$10,000 (to be divided if there are two authors), plus expenses for first author and guest to attend the Academy of Anesthesiology 2009 Spring meeting in St. Petersburg, Florida.

Deadline for receipt of contributions is November 15, 2007.

For further information and specific criterion please contact:
www.anesthesiafoundation.org/index.html.

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Lewis H. Wright Memorial Lecture: Rod Westhorpe, M.B., M.S., F.R.C.A., F.A.N.Z.C.A., to Present 'He Took It Well, Didn't He?'

by Susan A. Vassallo, M.D., Chair

Lewis H. Wright Memorial Lecture Committee

Wood Library-Museum of Anesthesiology

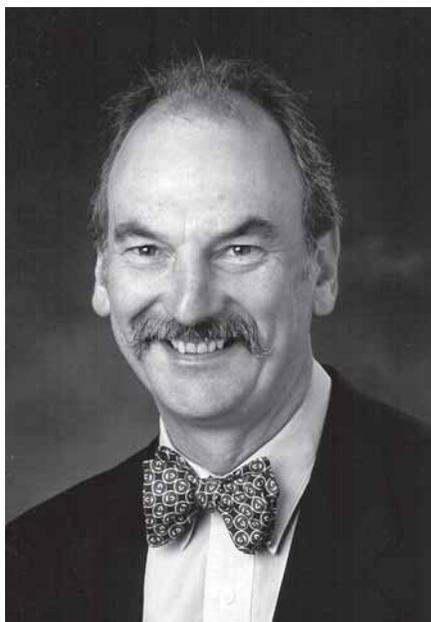
The Lewis H. Wright Memorial Lecture is sponsored annually by the Wood Library-Museum of Anesthesiology (WLM) and honors its namesake, who was a pioneer in American anesthesiology. Dr. Wright was committed to enhancing the stature of anesthesiology as a clinical science and as an advanced medical specialty. He was a founding member of the WLM Board of Trustees and later served as its president emeritus. In 1973, the New York State Society of Anesthesiologists endowed this lectureship to honor Dr. Wright, who died in 1974.

This year's distinguished guest is Rodney (Rod) Neill Westhorpe, M.B., M.S., F.R.C.A., F.A.N.Z.C.A., Councillor, Australian and New Zealand College of Anaesthetists; Past President of the Australian Society of Anaesthetists (1998-2000); and Specialist Paediatric Anaesthetist, Royal Children's Hospital, Melbourne.

Dr. Westhorpe is a third-generation Australian whose great grandparents emigrated from England, Ireland and Scotland.

In 1977, he graduated from Monash University Medical School and served as a resident medical house officer at Australia's Ballarat Base Hospital (1972-74). He then spent two years in England as a Senior House Officer in Anaesthesia. After an appointment as a senior registrar at Hammersmith Hospital, Dr. Westhorpe returned to Melbourne and has practiced at the Royal Children's Hospital for 30 years.

During this long tenure, Dr. Westhorpe's clinical practice included anesthesia for all types of pediatric surgery. Coincidentally he developed a talent for medical administration. He served as the



Rodney Neill Westhorpe, M.B., M.S., F.R.C.A., F.A.N.Z.C.A.

Chairman of the Victorian Section of the Australian Society of Anaesthetists and, in 1987, was a founding member of the Australian Patient Safety Foundation. His commitment to anesthesia and organized medicine was recognized when he was elected as President of the Australian Society of Anaesthetists (1998-2000). From 1995 to June this year, Dr. Westhorpe was a councillor of the Australian and New Zealand College of Anaesthetists. This board sets the standards for anesthesia training programs, executes examinations and oversees continuing medical education programs. As one of 12 elected councillors, Dr. Westhorpe played a pivotal role in the governance of the College.

In 1995, Dr. Westhorpe joined the editorial board of the journal *Anaesthesia and Intensive Care*. Each month the iconic cover features a significant piece of equipment with a special relevance to our practice. The "cover notes" or description of the artifact and its place in history have become the hallmark of this journal. Since 1989, Dr. Westhorpe, assisted by Christine Ball,

M.D., has designed 83 covers and authored the corresponding "cover notes." Some of the artifacts he has highlighted include Vaporisers, Trendelenberg's Cone; Magill's Laryngoscope; and White's Ethyl Chloride Inhaler. His topics have spanned a century and a half, and he has even described "modern inventions" such as etomidate and propanidid. Dr. Westhorpe has a special interest in the history of barbiturates and has shared his perspective on their introduction into clinical practice. In 1997, he was appointed Honorary Curator, Geoffrey Kaye Museum of Anaesthesia History at the Australian and New Zealand College of Anaesthetists in Melbourne.

This year's Lewis H. Wright Memorial Lecture is titled "He Took It Well, Didn't He?" Dr. Kasner Moss, a pioneer Australian anaesthetist, made this statement in 1921. He observed, "After a successful anaesthetic of 3-4 hours, the surgeon doesn't congratulate the anaesthetist, he simply remarks 'He took it well didn't he?'" In this year's lecture, Dr. Westhorpe will reveal the evolution of medical professionals throughout the ages. While medicine was a respected endeavor in Egyptian, Greek and Roman times, its place in society's hierarchy fell during the Middle Ages. Priests held the upper hand; although physicians advanced in status, surgeons were held in less esteem. This hierarchy changed during the major wars of the 17th and 18th centuries. As surgeons developed more sophisticated instruments and techniques, their skills were recognized and valued. In turn, physicians and surgeons sought to gain the public's support and approval. Advancement and promotion were not always based on merit and achievement. This flaw motivated physicians and surgeons to conduct more rigorous training and specialization. In the 1840s, there were obstetricians and surgeons, but there were no anesthetists. Dr. Crawford W. Long, a surgeon, and William T.G. Morton, a dentist, were adminis-

*Lewis H. Wright Memorial Lecture: Rod Westhorpe, M.B., M.S., F.R.C.A., F.A.N.Z.C.A., to Present 'He Took It Well, Didn't He?', 2007 is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, Illinois 60068-2573.

William Thomas Morton, 1819-1868 American Pioneer of Modern Anesthesiology Who Invented the Ether Inhaler

by Doris K. Cope, M.D.

Professor and Vice Chairman of Pain Medicine
Department of Anesthesiology
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania

“By whom pain in surgery was arrested and annulled, before whom, in all time, surgery was agony, since whom science has control of pain”

This sculpture, with the above inscription, has been erected in a semi-circle of ten prominent people important to the welfare of man. It is the tenth in the group of ten that is prominently displayed at the Beijing International Sculpture Park, one of the important new parks established in Beijing, China in preparation for the Summer Olympic Games, 2008.

As a Visiting Professor at Tsinghua University on August 31, 2007, Doris K. Cope, M.D. gave a lecture on the historical roots of Anesthesiology as a medical specialty and afterwards the residents, fellows, faculty and guests adjourned to this park across from the hospital to pay our respects to W. T. Morton. This enthusiastic group of more than 50 anesthesia students, residents, fellows, faculty members and private practitioners gathered around the Morton Statue taking pictures and sharing memories of their personal journeys in the specialty of Anesthesiology.



W.T. Morton as interpreted by the sculptor



Dr. Jianxiong An shows pride in his heritage



L to R: Dr. Jia-xiang Ni, Anesthesia Dept. Chair, Capital Medical University, Dr. Xiaodong Ge, Capital Medical University, Dr. Fushan Xue, Anesthesia Dept. Chair, Peking Union Medical College, Dr. Doris K. Cope, and Dr. Jianxiong An, Anesthesia Dept. Chair, Tsinghua University YuQuan Hospital.

Book Review

“This Is No Humbug!” Reminiscences of the Department of Anesthesia at the Massachusetts General Hospital: A History, Richard J. Kitz, Editor

by Sandra L. Kopp, M.D.

Assistant Professor

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Rochester, Minnesota

This Is No Humbug is a written “oral” history that describes the growth of the Massachusetts General Hospital (MGH) Anesthesiology Department from the late 1950’s through the 1990’s. The twenty chapters were written by various members of the senior faculty who had been on staff for an average of thirty years, many of whom started their careers when Dr. Henry K. Beecher was the Chief. The style of the book is one of reminiscence; told in the first person. Each author has included many personal anecdotes relating to their particular expertise or departmental responsibilities. Interestingly, each chapter has been written to stand alone, which allows the reader to select individual chapters that are of interest. This has also created a bit of overlap, with several of the authors reminiscing about the same events, although usually with a slightly different view from one author to the next.

This is a very detailed book describing the growing pains of a department as it struggled to become one of the prominent academic anesthesiology departments in the United States. It can almost be viewed as a guide to building a successful anesthesiology department. Dr. Kitz skillfully describes the professional, political, as well as intimately personal struggles he faced in his attempt to achieve recognition for “his” department. This book also highlights some of the many important contributions made by MGH to the field of anesthesiology. Dr. Henning Pontoppidan describes his experience and achievements in respiratory care. Drs. Todres, Ryan and Goudsouzian write about their experiences with the pediatric service. Dr. Lowenstein narrated the chapter highlighting the accomplishments of the cardiac anesthesia group. Dr. McPeck nicely illustrates the issues specific to the practice of pain medicine. Dr. Miller gives a very interesting view of how MGH contributed to anesthesia education. Dr. Jeffery Cooper reveals how the Harvard Medical School and MGH have been world leaders in patient safety since the early 1970’s. He makes it

clear that this collaboration has led to several large, well known patient safety initiatives, as well as the Anesthesia Patient Safety Foundation. Dr. Warren Zapol concludes the book with a chapter that describes not only his path to Chief of MGH, but also his view of the future. He eloquently describes the commitment of those within his department to the “betterment of medical care.”

An interesting addition to the book is the final chapter which includes illustrations and discussion surrounding the painting *Ether Day* which was commissioned by the hospital to hang in the ether dome. Clearly this is one of the best MGH anesthesia stories and obviously something for which they have great pride. It reveals how members of the departments of surgery and anesthesiology were dressed as they were in the mid-nineteenth century and posed in the ether dome imitating the day Gilbert Abbott was anesthetized. The process of convincingly transforming Dr. Warren Zapol into William Thomas Green Morton is fascinating.

The most frank and interesting chapter in the book is that written by Dr. Mary Kraft. She uses her very brief 18-page chapter to highlight the special challenges she faced as a woman in medicine in the late 1970’s. She honestly, and with a sense of humor, describes the hostility she faced from male surgeons, as well as from some of her own anesthesia colleagues. As the editor, I commend Dr. Kitz for not changing the character of this chapter. This is a part of history that must be told. It is essential that female physicians of today appreciate the battles that these wonderful role models have fought (and won) in order to ensure that women have a place in all aspects of anesthesiology.

There is a wonderful Foreword written by the late E. M. (Manny) Papper, MD, PhD. In it he states, “*This Is No Humbug* is a must-read for the widely expanded Massachusetts General Hospital family of anesthetists...for all the rest—a multitude of physicians, scientists, sociologists, an-

esthesiologists, historians and students—it should be read enthusiastically.” Every anesthesiology department could benefit from its senior staff committing to paper their own oral histories.

Book Review

The Phenomena of Life: a Radio-electric Interpretation by George Crile. New York: W.W. Norton & Co., 1936, pp. 379

by Theodore A. Alston, M.D., Ph.D.
Massachusetts General Hospital
Harvard Medical School

George Washington Crile (1864-1943), a founder of the Cleveland Clinic, had a special interest in traumatic and surgical shock (Figure 1). He was an early proponent of blood pressure monitoring and blood transfusion in surgery.

He believed that afferent neural impulses from damaged tissue could contribute to shock, so he championed "anoci-association" anesthesia for "shockless" surgery. Basically, the technique called for nerve blocks with local anesthetics and the use of nitrous oxide instead of chloroform or diethyl ether.

Crile was a prolific writer, and it is interesting to examine his imaginative and idiosyncratic lines of scientific thought. *Phenomena of Life* is particularly illuminating of Crile. Speaking largely from only his intuition, he self-confidently, compellingly, glibly, and poetically explains the subatomic, molecular, and cellular biophysics of life, death, sleep, consciousness, and anesthesia. He does so as a brilliant surgeon might try.

Crile's mechanism for the virtue of nitrous oxide is fantastic. He has authoritarian style, and it is strongly tempting to trust him. He explains, "Since neither the inhalation of pure nitrogen nor of pure oxygen causes anesthesia, we drew the inference that the nitrogen in the nitrous oxide molecule was not the same as the nitrogen that is free in the air. The nitrogen that is free in the air is at a low energy level. The nitrogen in nitrous oxide is at a high energy level. Therefore, we concluded that that it was the nitrogen with the high level of energy that had the chemical affinity required for its substitution for an oxygen atom, thus breaking the bonds of the living molecule. These bonds being broken, the living molecule was then immune against the excitation of physical injury. Its energy could not be expended by the effects of the physical injury of an individual under nitrous oxide anesthesia, and therefore, *under nitrous oxide anesthesia, no amount of injury to the tissue could cause surgical shock*" (pp. 41-42, my italics).

Crile was wise to avoid chloroform or diethyl ether in shock or incipient shock, but his rationale lacks rigor. He claims,

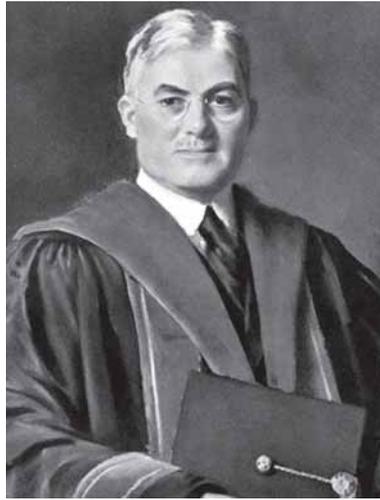


Fig. 1. George Crile, President of the American College of Surgeons (1916-1917), Director of Clinical Research for the American Expeditionary Forces (1917-1918). This portrait by Eugene Speicher is preserved by the U.S. National Library of Medicine.

"Inhalation anesthesia ... is a state which is analogous to death, and is removed from death only in inverse ratio to the depth of anesthesia" (p. 192). The mechanism is clear. There is "an overwhelming effect on all living things of a chemical agency which attacks the lipid films [of cells], such as the lipid-solvent anesthetics, chloroform and ether" (p. 158).

Crile relies heavily on metaphor, and his imaginative power to do so is impressive. The following example is intriguing and harkens back to his statements about nitrous oxide. He writes, "We have inferred that protoplasm and the nitro-explosives have certain characteristics in common. On the basis of this inference the parallel between them may be expressed briefly as follows:

1. Both protoplasm and nitro-explosives are constructed by the incorporation of a nitrogen group into a carbon compound.
2. Both protoplasm and nitro-explosives may be detonated.
3. Both protoplasm and nitro-explosives show a high speed of oxidation.
4. Both protoplasm and nitro-explosives give off CO₂ and either free nitrogen or a nitrogen compound.
5. Both protoplasm and nitro-explosives produce short wave radiation.
6. Both protoplasm and nitro-explosives may be detonated by a beam of light, by a sound wave, by an electric charge.
7. Protoplasm like most nitro-explosives is in continuous chemical disintegration.

The maximum speed of protoplasmic disintegration is seen in the major emotions, in physical struggle, in convulsions, in the crises of hyperthyroidism, in the overwhelming explosive action provoked by the injection of adrenalin" (p. 67).

In defense of this offbeat "radio-electric" theory of life, ATP was not yet viewed as the major currency of biochemical energy (though it was a known substance in 1936). Furthermore, the biggest name in nitro-explosives was, of course, Nobel. Crile may have prized Nobel attention.

A would-be Nobel physician is tempted to effect divine miracles, and Crile did so. Incredibly (in the strict sense of that word), he created living cells from acellular materials. He explains, "Since the brain is the most highly active and most highly differentiated tissue in the body, it occurred to us that if we should extract separately the lipid fraction and the protein fraction from the brain and make a solution of the ash and should then mix these together, we would reproduce crudely the process of normal fertilization and might thus gain an insight into the genesis and growth of cancer" (p. 85). Sure enough, this strategy did indeed yield "autosynthetic cells" exhibiting "such phenomena of living cells as assimilation, respiration, growth, and

Continued on Page 24

Crile. . . *Continued from Page 23*

cell division." Holy mackerel!

The charismatic Crile had a polymathic career marked by diverse accomplishments. In this and others of his two dozen books, he reveals that many of his actions were based on romantic and mystical intuitions. Like all pioneers, he did not suffer self-doubt.

Wright. . . *Continued from Page 20*

tering anesthesia in America, and soon, general practitioners incorporated this skill into their practices.

How then did anesthesiologists and anesthetists distinguish themselves in this environment? Dr. Westhorpe will analyze this struggle for status and recognition. He will highlight key events in our specialty's development and will pay special attention to the relationship between anesthetists and surgeons. He will recount the contributions of prominent anesthetists through the world. Dr. Westhorpe will describe the evolution of the practitioner

"chloroformist or etherizer' to "anesthetist."

The WLM is proud to have Rod Westhorpe as the 2007 Lewis H. Wright Memorial Lecturer. Under his direction the cover note for the journal *Anesthesia and Intensive Care* has become an iconic feature. Each month we are reminded of the drugs, equipment and people who have influenced our clinical practice. With his stewardship, the Geoffrey Kaye Museum of Anaesthesia History has flourished and is a remarkable institution that honors the history of anesthesiology. We thank Dr. Westhorpe for sharing his perspective on the evolution of the anaesthetist and for recognizing the achievements of our forefathers.

Bulletin of Anesthesia History

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