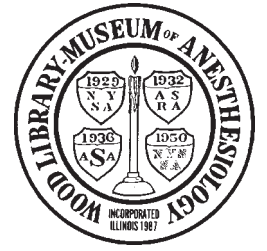




# BULLETIN OF ANESTHESIA HISTORY



VOLUME 27, NUMBER 1

JANUARY 2009

## The Puzzling Death of Reinhard Heydrich

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*This article has been peer reviewed for publication in the January 2009 issue of the Bulletin of Anesthesia History.*

### Introduction

On May 27, 1942, Reinhard Heydrich, the Reich Protector of Bohemia-Moravia in Prague, was seriously wounded by a grenade thrown at his car. He underwent emergency surgery and was slowly recovering when on June 3, 1942, eight days after his operation, he suddenly collapsed and sank into a deep coma. He died the next morning and the cause of his death has remained obscure. The present article reviews the known details of Heydrich's surgery, postoperative course and death and proposes an explanation for his demise.

Heydrich's surgical history has been reviewed recently in four books and previously in three medical journal articles but many important details are unfortunately missing.<sup>1-7</sup> That he was poisoned by botulinum toxins placed in the grenade by the British Special Operations Executive (S.O.E.) has also been suggested.<sup>8,9</sup>

Re-examining Heydrich's death now is difficult as all his physicians are deceased and most records have been lost; the Germans removed 60 tons of documents as they left Prague in May, 1945. The records of the Bulovka hospital where Heydrich was treated were lost in a flood in 2002; and Allied bombs destroyed the Berlin Gestapo files in 1943 (Personal communication with H.G. Haasis; personal communication with L. Vorel).

### Before the Assassination Attempt

At the time of his death at 38 years-of-age, Heydrich, SS Police General and chief of the Reichssicherheitshauptamt (RSHA, Reich Security Main Office) was one of the most powerful and most feared Nazi leaders. Exceptionally intelligent, hard-working, ambitious and totally amoral, he had climbed to the top of the SS hierarchy and ruthlessly crushed his and Hitler's domestic and foreign enemies. He was the main architect of the "Final Solution," Hitler's plan to destroy European Jewry.

In September, 1941 Hitler sent him to Prague as the new Protector of Bohemia-Moravia, a Nazi euphemism for absolute ruler of what remained of the Czech Republic after the German annexation of the Sudetenland. The Protectorate at that time experienced acts of sabotage and assassinations of Germans and their collaborators by the Czech underground. The low morale of the harassed and starved work-

ers had dangerously reduced Bohemia's industrial output of armaments, an essential part of the German war effort. Within nine months of his arrival, Heydrich had crushed the resistance and through various incentives, had raised the workers' morale and their output.

Alarmed by Heydrich's success, the Czech government in exile in London decided to have him assassinated. J. Kubiš and J. Gabèik, two Czech soldiers serving in the British army were trained by the S.O.E. and parachuted near Prague on

December 28, 1941.

After contacting the local underground, they chose to kill Heydrich as his unescorted car slowed down at a sharp bend in the road between his country residence and his Prague office. After learning of the Protector's schedule from an accomplice, they settled on the morning of May 27, 1942. Gabèik would shoot his target with a Sten submachine gun. Kubiš, armed with a powerful anti-tank grenade, would back him up.

### The Attack on May 27, 1942

The details of the assassination attempt, and many are still in dispute, are presented in the four books previously mentioned and, particularly, in the official report of H. Pannwitz, the Gestapo policeman who led the inquest.<sup>1-4,10,11</sup> At 10:32 a.m., on May 27, 1942, Gabèik tried to open fire on Heydrich as his Mercedes 320, sixteen feet away, slowed down to negotiate the hairpin bend on Kirchmayer Street. His Sten gun jammed and Kubiš immediately threw his anti-tank grenade. The weapon exploded upon impact in front of the cabriolet's right rear wheel where it punched a wide hole. A large splinter pierced the passenger's seat and entered Heydrich's left lower back, along with bits of metal and car seat upholstery.

J. Klein, the SS driver, stopped the Mercedes, probably on Heydrich's order and both occupants jumped out of the

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## The C. Ronald Stephen 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 Stephen 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 5,000 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 2009, 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@mcg.edu

**Entries must be received on or before September 10, 2009.**

## AHA 2009 Call for Abstracts

The 15th Annual Spring Meeting of the Anesthesia History Association will be held April 16-18, 2009, in Augusta, Georgia.

The Marriott Augusta Hotel & Suites  
 Two Tenth Street  
 Augusta, Georgia, 30901  
 Direct (706) 722-8900  
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The abstracts are for twenty-minute papers on historical aspects of anesthesia, critical care medicine, and pain management. Abstracts on medical humanities or ethical topics that relate to the history of one or more of these broad areas are also invited. Abstracts should be no longer than one 8½" by 11" sheet of paper; text should be in 12-point font size. If possible, abstracts should indicate the research problem, sources used, methodological approach and may contain no more than ten references.

Abstracts may be submitted by regular mail or electronic mail (in plain text format). Disc submission in Word is also permitted. Abstracts submitted in electronic format may be made available to registrants in advance of the meeting and on the AHA WWW site as decided by the Organizing Committee. ALL accepted abstracts will be included in material distributed to meeting registrants. Individuals who wish to organize a paper session around a theme should contact the committee as soon as possible.

The submission deadline for abstracts is February 20, 2009.

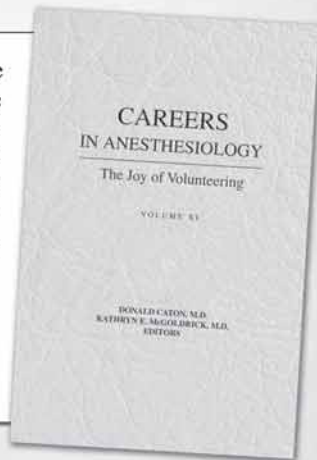
Send abstracts, inquiries etc., to:  
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# The Joy Of Volunteering

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CAREERS XI, the final volume in the series, tells the altruistic stories of eight anesthesiologists who gave their time and energy to benefit others and the communities within and outside their professional and personal confines.



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Kathryn E. McGoldrick, M.D., Eds. Park Ridge, IL,  
Wood Library-Museum of Anesthesiology, 2008.  
ISBN: 1-889595-17-9; \$50.00*

The Wood Library-Museum of Anesthesiology  
520 N. Northwest Highway • Park Ridge, IL 60068-2573  
(847) 825-5586 • [wlm@ASAhq.org](mailto:wlm@ASAhq.org)

*Bulletin of Anesthesia History* (ISSN 1522-8649) is published four times a year as a joint effort of the Anesthesia History Association and the Wood-Library Museum of Anesthesiology. The *Bulletin* was published as *Anesthesia History Association Newsletter* through Vol. 13, No. 3, July 1995.

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](http://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](http://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](http://gateway.nlm.nih.gov)).

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## Heydrich. . . *Continued from Page 1*

car.<sup>10,11</sup> Heydrich tried to shoot at the fleeing assassins but his pistol misfired. While Klein pursued Gabèik, Heydrich, in severe pain, staggered back to the car and collapsed on the hood.

After 20 minutes of confusion, he was placed face down among cans of wax and polish in the rear of a passing commercial van and driven to Bulovka hospital, one-and-a-half miles away. Bulovka, with 1,400 beds, was at the time the second largest Czech hospital.

### Heydrich's Surgery (May 27, 1942)

Heydrich reached the Bulovka emergency room shortly after 11:00 a.m. and was registered under the number 12.555/42. Summoned by the emergency room nurse, Dr. Snadjr arrived at once and found Heydrich seated on the examining table, bare-chested, silent and aloof, profusely bleeding from his left lower back. While checking the injury, Dr. Snadjr had the nurse call Dr. W. Dick, the Sudeten German chief of surgery at Bulovka since 1940 and an experienced thoracic surgeon. Dr. Slalina, Dr. Dick's assistant, was the first to arrive. He found a 10 X 5 cm wound in the left T<sub>8</sub>-T<sub>10</sub> paravertebral area upon which he applied a pressure dressing. Dr. Dick then walked in with a retinue of German physicians. After clicking his heels and giving the Hitler salute, he examined the wound, filled with blood, pieces of metal and car upholstery. At first he thought that the wound was limited to the chest wall and could be debrided and sutured under local anesthesia in the minor surgery room, but nonetheless, he ordered a radiograph. Heydrich was taken to the radiology suite in a wheelchair but walked unassisted to the X-Ray machine. The film showed a left pneumothorax, a fracture of the left eleventh rib, a diaphragmatic tear and a metal fragment in the spleen. The

left kidney and spine were intact.

Told that he needed immediate surgery, Heydrich refused and insisted on a Berlin surgeon. Dr. Dick repeated that the operation was urgent and offered to call Professor J. Hohlbaum, the chairman of the Surgery Department at the nearby Charles V University. Dr. Hohlbaum was a Silesian German. Heydrich accepted after a few minutes of hesitation and Professor Hohlbaum was summoned. Drs. Slalina and Mach brought the patient to an operating room which had just been vacated by Dr. A.V. Honek; the latter had hurriedly finished a gastrectomy when told that his room was needed for an important patient.

Thirty minutes later, Dr. Honek was called back to administer Heydrich's anesthetic. He was the only surgeon familiar with the new British machine equipped with a closed-circuit system for positive pressure ventilation.\*

Entering the operating room, Dr. Honek found Heydrich silent and aloof, lying undressed on the operating table. He ignored Dr. Honek's questions about loose teeth and dental prostheses, but let him examine his mouth. He was then anesthetized with ether by mask and the left lung was re-inflated by positive pressure. An endotracheal tube was not inserted; it is unknown whether ether was preceded by ethyl-chloride inhalation or intravenous evipan as was then the common practice. The anesthetic was administered by Mr. Muller, an operating room orderly, helped by nurse Zavadilova and supervised by Dr. Honek.

The operation started around noon and ended shortly after 1:00 p.m. Drs. Dick and Slalina had started scrubbing when Professor Hohlbaum walked in with two assistants. As he was ready to scrub, Dr. Hohlbaum noticed that in his haste he had forgotten his glasses and an aid was sent to fetch them. He told Dr. Dick to start the procedure and that he would assist him until he had his glasses. Dr. Mach gave the patient a transfusion of type A blood at the beginning of the operation and another at the end, along with tetanus and gas gangrene antitoxins.

Once asleep, Heydrich was turned on his right side and Dr. Dick debrided the chest wound, resected the tip of the fractured eleventh rib, inserted a pleural Petzer catheter and closed the wound over the expanded left lung. The pleural catheter was later attached to a Bülow bottle to keep the lung expanded postoperatively. Whether the 10 cm diaphragmatic tear was sutured through the chest wound or during the laparotomy is unclear.<sup>1,3,5</sup>

The patient was then turned on his back and the abdomen was prepared for a laparotomy. Dr. Hohlbaum, now wearing his glasses, made an incision from sternum to mid-abdomen. As he was reaching the umbilicus, Dr. Honek noticed that he was perspiring profusely.<sup>1</sup> Dr. Dick reacted at once, and in his usual quiet and courteous manner whispered, "Professor Hohlbaum, you are not well, allow me to take over." He then extended the incision under the left costal margin and finished the procedure with Drs. Hohlbaum's and Slalina's assistance. The peritoneal cavity was filled with blood coming from the spleen. The other abdominal organs and the left kidney were intact. The damaged spleen was removed; it contained an 8 X 8 cm grenade splinter and a lot of car upholstery material. Dr. Dick sutured the pancreatic tail, inserted a peritoneal drain and closed the abdomen. Heydrich tolerated the surgery well, with normal vital signs.

### Postoperative Course and Death (May 27 – June 4, 1942)

Around 2:00 p.m., a still drowsy Heydrich was brought to Dr. Dick's office which had been converted into a private room for him and in which he remained until his death. The East wing of the second floor on which the room was situated was emptied of patients and turned into an SS guard post. Dr. Dick followed his patient until May 29, 1942; afterwards Heydrich was treated only by SS physicians. His wife Lina visited him in the early afternoon of May 27 as he was awakening from his anesthetic.

Himmler, at Hitler's headquarters in Rastenburg (East Prussia) was immediately notified of the incident and ordered Dr. K. Gebhardt, his personal physician and professor of orthopedics in Berlin, to fly at once to Heydrich's bedside. Gebhardt landed in Prague the evening of May 27, accompanied by his SS deputy, Dr. L. Stumpfegger, and the renowned Berlin surgeon F. Sauerbruch. Professor Sauerbruch had been Gebhardt's teacher and was a close friend of the Heydrich family. Dr. Morell, Hitler's physician, never came to Prague.<sup>2</sup> Gebhardt followed Heydrich closely and phoned Himmler twice a day to report on his patient's progress. Heydrich probably never received sulfonamides (see below). The Bulovka nurses and pharmacists later commented on the enormous amounts of morphine ordered for Heydrich and even suspected that one of his physicians was an addict. The doses of morphine are unknown. It is plausible, however, that large

\*The exact type of machine is unknown. Dr. Honek died in 2002 and our letters to the departments of anesthesia and thoracic surgery at Bulovka were unanswered. However, an old nurse recalled that Bulovka, at the time, owned a new British machine delivering warmed ether and allowing positive pressure ventilation (Personal communication with L. Vorel). The only British apparatus corresponding to that description is the 1932 Magill Endotracheal Apparatus (Design # 771428) (12).

amounts of narcotics were needed for a young (38 years-of-age) and large (6 ft. 3 in., 205 lb.) patient with painful chest and abdominal injuries. Gebhardt may have also tried to keep his patient comfortable during the numerous visits of his wife and his SS colleagues, including Himmler.

Heydrich developed fever (38-39°C or 100-102°F) and copious wound drainage until June 2, 1942. Gebhardt refused to consider a second operation. In the early hours of June 3, 1942, Gebhardt reported to Himmler that the fever and the drainage had subsided and that the patient was improving. However, around noon, while Heydrich was sitting in bed eating a late breakfast, he suddenly went into shock and soon lapsed into a deep coma (Personal communication with H.G. Haasis). He died at 4:30 a.m. the next morning, June 4, 1942. His wife alleged that shortly before he died her husband briefly regained consciousness and asked her to visit him again soon.<sup>13</sup> This event is medically implausible; she was heavily sedated at the time. The Protector's decease was recorded in the Bulovka death register as "Nr 348/1942. Reinhard Tristan Heydrich. Cause of death: gunshot wound/murder attempt/wound infection."

#### The Autopsy (June 4, 1942)

A post-mortem, ordered by Heydrich's office, was performed at noon on June 4, 1942, at the Bulovka morgue. Professors H. Hamperl and G. Weyrich, directors of the department of Pathology and of the department of Forensic Medicine, respectively, at Charles V University, conducted the autopsy. Present were the surgeons Dick, Hohlbaum, Gebhardt and Sauerbruch as well as several SS physicians.

A photograph of the German report, as well as an English translation (occasionally incorrect) are now available.<sup>3</sup> The report consists of two parts: a brief initial statement signed on June 4, 1942, and a longer one, including the microscopic and bacteriological findings, completed on June 17, 1942.

The autopsy was unfortunately incomplete: the brain was not examined and apparently no search was made for evidence of pulmonary embolism, deep vein thromboses, mucosal petechiae or foramen ovale.

The essential findings included:

1. The surgical sutures were intact and there had been no postoperative bleeding, a reassuring finding for the surgeons.<sup>5</sup>

2. There were small abscesses in the splenic bed, in the chest wall and diaphragmatic wounds, and around the pleural drain, but there were no large collections of pus in the abdominal or thoracic cavities.

3. The pericardial sac contained 100 ml of sero-fibrinous fluid.

4. The coronary arteries and aorta were normal, except for a few small atheromatous plaques.

5. The right ventricle, the pulmonary artery and its main branches were filled with fat particles and blood clots. The cardiac valves were intact.

6. The esophagus contained foul smelling, regurgitated gastric content.

7. The lungs showed the most significant changes:

- a) The bronchi were filled with foamy mucus.

- b) The upper lobes of both lungs revealed severe pulmonary edema whereas the lower lobes and the left lingula were markedly atelectatic.

- c) There was a right hydrothorax (170 ml sero-fibrinous fluid).

- d) The anterior and lateral surfaces of the left lung were fused to the parietal pleura by thick, fibrinous adhesions. A pocket of 50 ml of cloudy, brownish fluid separated the left lung from the mediastinum. Another larger pocket (650 ml) lay under the left lung, covering the costo-diaphragmatic recess.

The main microscopic and bacteriological findings in the June 17, 1942 report included:

1. Cloudy swelling of the hepatic, renal and myocardial cells.

2. The diaphragmatic wound, the left pleural cavity and the pericardial sac showed an abundance of gram positive bacilli and cocci (mainly streptococci) and, especially, of proteus bacteriae.

In his initial report, Dr. Hamperl concluded that death had resulted from hepatic, renal and myocardial damage caused by virulent microbes or their toxins. He insisted that "there was no reason to suppose chemical poisoning by a grenade splinter." He confirmed this diagnosis in his June 17 report, adding that the absence of spleen had weakened the body's resistance to infection.

Surprisingly, Dr. Hamperl in a 1970 conversation with Dr. Davis and in his 1972 memoirs retracted his diagnosis and claimed that Heydrich had died free of infection and without organ damage.<sup>5,14</sup> He ruled out a mediastinitis and attributed the death to "anemic shock."

#### The Sulfonamides Question

The claim that Heydrich received sulfonamides at Bulovka is unsubstantiated and probably incorrect.<sup>1,5,6,15</sup> At his 1947 trial, Gebhardt testified that he did not prescribe sulfonamides for Heydrich because of his medical training in Munich and his 1940 experience as a frontline surgeon had convinced him of their futility in gunshot wounds.<sup>15,16</sup> He had refused Morell's offer to fly to Prague as well as his recommendation to try the new thiazole sulfonamides (e.g., ultrasept) in the production of which Morell had large financial interests.

Gebhardt added that Morell had later told Himmler that this gross negligence had caused Heydrich's death. This accusation had estranged him from his SS superior.

Gebhardt's testimony, however, is contradicted by the warm letter of thanks that Himmler sent him on October 19, 1942, praising Heydrich's surgeons and especially Gebhardt's for easing his patient's suffering.<sup>17</sup> Over the following months Gebhardt was promoted to SS Major General and to "Supreme SS Physician" and was awarded the rare "Knight's Cross with Diamonds."<sup>15</sup> At his trial, Gebhardt implied that he had accepted his superiors' order to test sulfamides on concentration camp inmates partly to vindicate his treatment of Heydrich.

In fact, the use of sulfonamides for gunshot wounds in the Soviet Union had already been discussed by the SS medical service in early 1942. At the first conference of the Consulting Surgeons (East) in Berlin on May 18-19, 1942, the value of sulfonamides in wound infections was heatedly debated among military surgeons, including Gebhardt who declared them to

## Heydrich. . . *Continued from Page 5*

be useless.<sup>6,15</sup> Immediately after the conference, Himmler who had just learned that American soldiers carried individual packs of sulfonamides, and the Chief SS Physician, L. Grawitz, ordered Gebhardt to begin immediate human trials. Heydrich died a few days later. On July 20, 1942, Gebhardt started cruel and scientifically worthless clinical trials on Ravensbrück inmates, the first of a series of criminal experiments which led to a death sentence in Nürnberg in August, 1947 and to the gallows in early June, 1948.

### The Botulism Story

Stories that the British S.O.E. had placed botulinum toxins in the grenade that wounded Heydrich have circulated since 1982.<sup>8,9</sup> There is no record of such intervention in the archives of Porton Down, the British center of biological warfare and the S.O.E. files are still closed.<sup>8,18</sup>

The stories may have originated with Paul Fildes (1882-1971), the brilliant microbiologist who led the British bacteriological warfare research in World War II and discovered the botulinum toxin (Toxin "X") in 1941. He did not publish his wartime work. Fildes was a scientist of rigorous integrity in his research but outside of his laboratory he was a braggart who enjoyed astounding his colleagues with extravagant boasts.<sup>8,18</sup> He bragged to his Oxford associates after 1945 that he had placed toxin "X" in the grenade which fatally wounded Heydrich.

Fildes' claim, however, is highly suspect:

1. Heydrich survived eight days after the attack and never showed the typical paralytic symptoms of botulism.<sup>19</sup>
2. The left face of Kubiš was peppered with small splinters of the grenade he threw at Heydrich. Kubiš remained healthy and active for 22 days until he was fatally wounded by German policemen in a gun battle on June 18, 1942. Marie Sochmanova, a young woman who was standing nearby at the moment of the explosion sustained a large calf wound from a grenade fragment but lived many years afterwards.<sup>1</sup>
3. The features of the grenade which wounded Heydrich are well known as a similar grenade was

found in the briefcase left at the site by the fleeing Kubiš.<sup>11</sup> (Figure 1) The weapon was a powerful British number 73 anti-tank grenade, the lower two-thirds of which had been removed to make it lighter (1 lb.) and easier to handle (4 in.). The bottom of the remaining upper one-third had been sealed with adhesive tape and the whole body was wrapped in more tape. German experts judged its powerful explosive, polar ammon gelatin, to be dangerous to handle.<sup>10,11</sup> That such a delicate weapon would have been entrusted to a valuable scientist without military experience, and that an agent as lethal as toxin "X" would have been simply covered with common tape, seems implausible.

4. That the fragile botulinum toxins, protected by a crude tape wrapping, would have survived a four-and-a-half hour flight at 10,000 ft. in December (December 28, 1941); five months of harsh mid-European winter while hidden outdoors and, finally, would have resisted the enormous heat of the explosion also seems most unlikely.

### What Caused Heydrich's Death?

As just discussed, the botulism story is certainly a canard. The autopsy findings belie Dr. Hamperl's diagnoses of "septic organ failure" (1942) and of "anemic shock" (1970 and 1972).<sup>5,14</sup> Mediastinitis was never substantiated.<sup>1,3,5,7</sup> Fatal cardiac tamponade generally occurs with larger pericardial effusions than the 100 ml. found by the pathologists.

Sudden postoperative cardiovascular collapse and coma suggest either a cerebral embolism or severe brain ischemia following a massive pulmonary embolism with acute cor pulmonale and impaired cardiac output.<sup>20</sup> The embolus may have been a large fat particle or a blood clot, since both materials were found in the right ventricle and in the pulmonary artery. In the absence of examination of the brain and of a search for evidence of pulmonary embolus, deep vein thromboses, and foramen ovale, an accurate diagnosis is impossible.

However, sudden cardiovascular collapse and coma occurring several days after surgery in a young, previously healthy patient without long bone fractures suggests a pulmonary embolism with acute cor pulmonale and brain anoxia. In the absence of important data, however, this diagnosis

Fig. 1. Photograph of the spare grenade.



must remain a speculation.

### Summary

Reinhard Heydrich, SS Police chief and "Protector" of Bohemia-Moravia was wounded by a grenade fragment during an assassination attempt in Prague on May 27, 1942. Eight days after undergoing emergency surgery, he suddenly collapsed, slipped into coma and died the next morning, on June 4, 1942. The cause of his death has remained obscure.

The present article reviews the known details of Heydrich's medical history after the attack. The death of his physicians, the loss of his medical records, and an inadequate post-mortem make an accurate diagnosis impossible. Massive pulmonary embolus with acute cor pulmonale and cerebral anoxia is a reasonable assumption. That Heydrich died from botulism is most unlikely.

### Short Biographies of Heydrich's Physicians

1. Dick, Walter (1899-1990). Sudeten German born in Bohemia. MD degree from Charles V University (Prague) in 1925. Chief of Surgery at Bulovka Hospital (Prague) from 1940 to 1945. From 1945 to his retirement in 1967, was professor of surgery at the Universities of Klagenfurt, Bonn and Tübingen.
2. Hohlbaum, Josef (1884-1945). Born in German Silesia. From 1924 to 1940 taught surgery in Leipzig. From 1941 to 1945 was chairman of the Surgery Department at Charles V University (Prague). Remained in Prague in May, 1945, was sentenced to forced labor by the Czech authorities and was critically wounded by a mine while clearing a building in Prague. Denied treatment by his Czech colleagues, he escaped to Leipzig where he died from his leg wounds.
3. Sauerbruch, Ferdinand (1875-1951).

Born in Barmen (Ruhr Valley). MD degree from Leipzig University in 1902. Professor of Surgery in Breslau and Munich. From 1928 to 1949, chairman of the Department of Surgery at the Charité Hospital in Berlin. Died in East Berlin in 1951 from a cerebrovascular accident.

4. Gebhardt, Karl (1897-1948). Born in Bavaria. MD degree from Munich University in 1935. Chief of Orthopedic Surgery at the Berlin University and Himmler's personal physician in 1937. Consulting Surgeon with the SS Division "Das Reich" in 1940 and president of the German Red Cross and Chief of the Hohenlychen SS Hospital. SS Major General in 1943. Because of his experiments on concentration camp inmates, was sentenced to death in Nürnberg in August, 1947 and hanged in Landsberg in June, 1948.
5. Hamperl, Herwig (1899-1976). Born in Vienna. MD degree from Vienna University in 1926. From 1940 to 1945, director of the Institute of Pathology at the Charles V University (Prague). After his release from a short Russian captivity he practiced pathology in Salzburg and Marburg, and then became director of the Bonn Institute of Pathology until his retirement. He published numerous articles and books of pathology and was editor of several pathology and oncology journals.
6. Weyrich, Günther (1898-1999). Born in Ried (Austria), MD degree from University of Vienna in 1925. Pathologist in Graz from 1925 to 1939. From 1940 to 1945 Director of the Institute of Legal Medicine at Charles V University (Prague). After his release from U.S. captivity in 1947, forensic pathologist in Klagenfurt. From 1954 until his retirement in 1966, director of the Institute of Forensic Medicine in Freiburg i.Br.

#### Acknowledgements

The authors thank Herren L. Vorel, H.G. Haasis and T. Fiedler (Germany) and V. Zajka (Yivo Archives, New York) and Jeff S. Defalque for providing valuable information and documents.

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# Obituary: Joachim Stefan Gravenstein

by Donald Caton, M.D.

Professor Emeritus

Department of Anesthesiology

University of Florida College of Medicine

Joachim Stefan Gravenstein, 'Nik' as we knew him, died on January 16 just one week short of his eighty-fourth birthday. Born in Berlin he began his career in medicine when in 1951 he received a Dr. of Med. Degree from the University of Bonn. Following an internship at the University Hospital in Basel, Switzerland, he moved to Boston, where he served as a resident and then a research fellow at the Massachusetts General Hospital. He completed this training in 1958, simultaneously receiving an MD from Harvard Medical School, at which time he became Chief of the Division of Anesthesia at the newly formed medical school of the University of Florida. In 1969 he moved to Cleveland to become Director of Anesthesiology at Case Western Reserve University Medical School. In 1979 he returned to his department at the University of Florida to become a Graduate Research Professor, a role in which he continued to be active even after his 'official' retirement in 1996. Until recently he arrived in the department most mornings by seven o'clock to attend a conference or to teach residents or medical students. In his teaching he could be counted upon to offer an insightful comment, often delivered with a wry smile.

It is difficult to summarize Nik's career as he was deeply involved in so many aspects of the development and practice of our specialty. The history of anesthesiology was one aspect. Apart from his many lectures on this subject, he published papers covering subjects as diverse as Paracelsus, von Humboldt and Beecher. In addition, he served three terms as Trustee of the Wood Library Museum at a crucial time in its development.

Medical science and practice also concerned him. Early in his career Dr. Gravenstein published papers, chapters and books dealing with pharmacology. Later he turned his attention to patient safety. In this work he served on boards of many organizations, among them Anesthesia Patient Safety Foundation, Committee on Patient Safety of the American Society of Anesthesiology and Society for Technology in Anesthesia, which in 1999 established a special award given annually in his name. With coworkers he held 14



Joachim Stefan Gravenstein, M.D.

United States patents. Many of these dealt with a patient simulator, developed with a team of bioengineers and used to introduce students and anesthesia residents to the problems that they would encounter in the operating room. Perhaps no other aspect of his work better reflects his impact as an innovator, mentor and teacher.

Dr. Gravenstein's contributions, his papers, monographs, chapters, books lectures and awards, are too numerous to list. Perhaps the best description of his work came from Dr. Michael Good, a former resident and now Interim Dean of the University of Florida College of Medicine: "As a physician, he healed many. As a teacher, he helped students of all ages learn. As a mentor, he helped so many of us develop successful, rewarding and meaningful careers and lives ...Nik Gravenstein leaves the world in a much better place than how he found it. I am so fortunate to have had the opportunity to know and learn from this great man."

Dr. Gravenstein is survived by his wife and eight children, two of whom are anesthesiologists on the faculty of the University of Florida, one of them a former chair of the department that his father founded fifty years ago. If marks of a true professional are work in the service of humanity, contributions to improvements in the stan-

dards of medical practice and the education of self and others, Joachim Stefan Gravenstein met, if not exceeded, each of these criteria.



## Historical Copy of the Original Lecture Dr. Ralph M. Waters gave at the World Congress of Anaesthesia in Brazil in 1964\*



*Given in 1964 - age 21; this was translated into 4 languages simultaneously & then back to English for this*

### III CONGRESSUS MUNDIALIS ANÆSTHESIOLOGIÆ

*Mama & Elva went down with him they were giving the "Grand TOUR".*

Prof. Ralph M. Waters made the following speech at the Inaugural Ceremony.

Years ago I read a book. It is called VAN LOON'S LIVES and was written by an imaginative Dutchman named Hendrik Van Loon. I found it a collection of ghost stories. In it are described a series of Saturday night dinners at which the guests, usually invited in pairs, turned out to be sample characters from history. Erasmus and Sir Thomas More made an interesting evening. William the Silent and General George Washington came together. Plato and Confucius were guests another evening. In other words, the book is the story of meetings of ghostly characters from the past, the history of whom made it probable that their conversations would be entertaining and instructive.

The last two medical meetings which I attended convinced me that, so far as modern Medicine and Anesthesia are concerned I am now and long have been, a ghost.

When I received this magnificent invitation to come to São Paulo and bring my wife to this meeting I thought: Ah-ha! , they have read Van Loon's Lives and had the same reaction which I had, when I read it so long ago, namely, how nice it would be to gather together some of the characters who had to do with the origin of the use of drugs and methods to relieve pain, the PREANESTHESIOLOGISTS, if you will. And I thought: What a wonderful idea that is and how grand it will be to see and talk to some of those old fellows! I thought to myself: These wonderful Brazilians have deduced, rightly, that Ralph Waters is now a near-ghost and we might as well include the old fossil in our list of invitations. So here I am with my good wife, and even my daughter, after all these years in the limbo of retirement.

\*Dr. Ralph M. Waters' lecture at the 1964 World Congress of Anaesthesia in Brazil is reprinted here with permission from the World Federation of Societies of Anaesthesiologists (WFSA) and with special thanks to the Waters family for the gracious provision of the copy of the lecture.

**Waters...** *Continued from Page 9*

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It seems to be working out that way. I have already seen two shadowy figures in the lobby who remind me very much of Rev. Priestley and Anton Lavoisier, probably asking each other whether Karl Scheele really deserved any of the credit for discovering oxygen. It was good to note that Lavoisier's head seemed firmly in place.

So I know the party is on. I am sure that I shall run into Tom Beddoes, probably hanging on to the arm of Humphrey Davy and trying to claim credit for giving him his start in life and the opportunity to write that classic of all pharmacological classics on Nitrous Oxide with the awesome title RESEARCHES, CHEMICAL AND PHILOSOPHICAL, CHIEFLY CONCERNING NITROUS OXIDE OR DEPHLOGISTICATED NITROUS AIR AND IT'S RESPIRATION, by Humphrey Davy, SUPER-INTENDENT OF THE MEDICAL PNEUMATIC INSTITUTE.

That he did the work and wrote the book before he was 21 years old does not detract from it's scientific value and reading it now explains why the poet Coleridge, when asked why he attended Davy's chemical lectures at the Royal Institution in London, said: "I go to Davy's lectures to learn beautiful figures of speech".

But I shall run into other interesting personages, I am sure. I hope to find Fritz Serturner, the once pharmacist of Paderborn who spent so much time and effort finding out why one prescription for opium won him the praise of the physician who wrote it while the next might get him an unpleasant "balling out" because the patient to whom it was administered got no relief of pain at all.

I'd like to tell Fritz what a wonderful boon to suffering humans the isolation of Morphine and the establishment of Alkaloids on a firm basis has been, for the past 150years.

You may wonder why the committee on arrangements has not provided a special meeting room for the ghosts. I think

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they realized that all ghosts are of a retiring disposition and that, when they were active in life, meetings were infrequent or non-existent. Presiding officers and all that were not common as now. Of course, if Frank McMechan gets here, he will be disappointed not to have a formal meeting. But without his wonderful wife, Lorette, he might have difficulty in navigating his little wheel-chair. With her, in days gone by, they surely travelled to the ends of the earth and few indeed are the regions where their influence is not still felt, wherever anesthetists or anesthesiologists gather for meetings or where papers on these subjects are read or published.

If John Snow does not show up I shall be gravely disappointed. Since he had read nearly everything published for 2 or 3 hundred years before 1857 in the subjects of pseudochemistry and prephysiology, and verified or disproved by experiments of his own most of what he had read, he should still be the greatest well of information from which other ghosts, as well as modern anaesthesiologists, could drink.

I don't know how you, moderns, would react to the idea but I have always felt that it would be fun to meet and talk with some of the old chaps who never published much but, in their way, did contribute a lot to the development of ways of relieving pain. One of these who was scarcely recognized along the way was Gardner Q. Colton. One hundred years ago, you remember he was travelling around the eastern part of the United States using Nitrous Oxide to illustrate chemical lectures to lay audiences. Horace Wells benefitted from such a lecture. But I think it would be amusing to hear him tell of his experiences with Dr. Evans, the Paris Dentist and friend of Emperor Napoleon the III. When Evans took Colton back to Paris at the Emperor's request, to enliven an exhibit at the World's Fair in 1867, he created quite a stir. I imagine, with his public demonstrations of Nitrous Oxide anesthesia. He went back to the USA to establish the chain of advertizing dental parlors where painless extractions

**Waters.** . . . *Continued from Page 11*

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were performed. But the Dentist Evans went across the channel to show London how Colton used Nitrous Oxide: for the benefit of Clover, Richardson and the others, and so brought back to Britain the idea which Davy had suggested to them, nearly seventy years before.

If modern anesthesiologists should corner the ghosts of Sir Benjamin Richardson and Dentist Thomas Evans, I would suggest that you try to learn from them the technic of making friends and influencing people. You might develop a "presence" which would overcome many of the handicaps which some of you experience in dealing with picayunish hospital administrators.

I hope we shall find the shade of Sir Frederic Hewitt drifting about, whose knighthood came, I am sure, not from his "presence" but from his sterling scientific work as the author of the first really comprehensive text-book on Anesthesia. I hope many more of the pre-anesthetists will show up during the week.

For the opportunity to join this Third Congress of World Representatives of those who try to relieve pain, I am most grateful; to all you Brazilians, as well as to old friends from far countries. Every gathering which brings together people from all parts of the earth helps a little, I believe, to hasten the day when enmity among the various nations will come to an end and when all people can unite in a world free from animosity and misunderstanding.

May this Congress continue to meet and grow in years to come, to the benefit not only of the members who attend it, but toward the promotion of peace and cooperation throughout the World.

# AHA and WLM Activities at the ASA 2008 Annual Meeting Orlando, Florida October 18-22, 2008



**WLM Activities including  
Friends Tea, Book Signing and  
Board of Trustees Dinner**



*Photos courtesy of Chad Evans Wyatt and  
Patrick Sim.*



*Continued on Page 14*

**AHA-WLM. . .** *Continued from Page 13***AHA 2008  
Annual  
Dinner  
Meeting**

*Photos  
courtesy of  
Dr. Mark  
Schroeder  
and Patrick  
Sim.*

**2008 Laureate of  
Anesthesia History  
Investiture**

*Laureate of  
Anesthesia History  
Investiture: Dr.  
David Wilkinson,  
2008 Laureate,  
receives the award  
from Dr. William  
Hammonds.*



*Laureate of Anesthesia History  
Investiture: Dr. Doris K. Cope  
gives Dr. David Wilkinson,  
2008 Laureate, the medal.*

*WLM Fellows. Seated from left: Dr. Adolph Giesecke, Dr. Anthony Kovac, Dr. Bradley Smith, Dr. Jonathan Berman and Dr. Kim Turner. Standing from left: Dr. Mark Mandabach, Dr. Burdett Dunbar, Dr. Douglas Bacon, Dr. David Waisel and Dr. Rafael Ortega.*



## Book Review

**Handbook of Therapy by Oliver T. Osborne and Morris Fishbein. Sixth edition. Chicago: American Medical Association, 1920, 752 pages.**

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

In 1920, Osborne was a prolific Professor of Therapeutics at Yale. Fishbein was Assistant to the Editor of *JAMA*. He stamped the journal as Editor from 1924-1949. In 1970, he endowed the Morris Fishbein Center for the study of the history of science and medicine at the University of Chicago. He was a champion of medical orthodoxy, some would say, to a fault. He actively routed out quackery, but his judgments on that often-emotional problem could be controversial. The full text of the handbook is published on-line at [books.google.com](http://books.google.com). The book deals with medicine in general, thus illuminating the atmosphere in which anesthesia was practiced soon after WWI. However, a lot of the book pertains directly to anesthesiology.

The book starts with a description of the art of prescription writing. It is generally preferable to specify one's own cocktails, though some proprietary mixtures are acceptable as long as none of the components are secret. Latin names are preferred, but metric units are recommended (acidum acetylsalicylicum 325 mg instead of 5 grains). The long list of "useful" drugs is interesting. Most are botanicals (rhubarb, both crude nux vomica and its isolated strychnina) or inorganics (arsenic, lead, mercury). Very few are synthetics (aether, aethylis chloridum, chloroform, procain, early NSAIDs). Very few are effective antibiotics (the organoarsenical Salvarsan). Because of newly launched Prohibition, medicinal liquors are mentioned as prescription drugs. In critical

illness such as malignant endocarditis, "alcohol has been used in large doses, as it has been so frequently in all septic processes." Ethanolic spirits of ether (Hoffmann's drops) and chloroform can be given enterally for a number of conditions. The therapeutic armamentarium of 1920 also includes bleeding and cupping, the latter of value in sciatica. There is much horse and human serum therapy, as for hemophilia, epilepsy, and meningitis ("intranspinal" serum in that case).

Much of the book describes dreaded infectious diseases. One out of seven children does not reach one year of age. Despite known toxicity from prolonged exposure, chloroform inhalation is offered for the paroxysms of whooping cough.

The chapter on anesthesia lists the essential items to be stocked on the "emergency table." These are chloroform, ether, petrolatum (to protect the facial skin from vapor), boric acid eye-drops, tongue forceps, long forceps (and gauze for swabbing), mouth gag (or cork), large needle (threaded with strong silk), pus basin, towels, and two hypodermic syringes. The silk suture may be intended for tongue traction. Resuscitation drugs on the table are atropin tablets; strychnin tablets; and ampoules of camphor in olive oil, aseptic ergot, epinephrine, and pituitary solution. Furthermore, "it is advisable to have a strong well-working faradic battery, an oxygen tank, (it should be remembered that Professor Henderson thinks too much oxygen in ether shock is inadvisable, and even ad-

vises carbon dioxid gas), transfusion apparatus, and warm, aseptic physiologic saline solution." The faradic battery applied AC shocks hoped to twitch the diaphragm in apnea. Transfusions were rare and cumbersome, and the saline was often given through rectal absorption. Citrate/dextrose preservation of blood was a recent innovation, and direct transfusion from person to person is described, including the arteriovenous surgical method of George Crile.

Many negative-pressure emergency ventilation techniques are described, especially for asphyxia neonatorum, "which occurs in a large proportion of deliveries." As prevention, all newborns should be "promptly slapped repeatedly," and, if the skin is livid, some blood can be shed from the cord. The ventilation method of Schulze, swinging the baby overhead and down to the chest, can overcome apnea. However, "this is a method which presents more or less of the appearance of violence, and hence it is not always practicable to do it in the presence of friends of the patient." "If other methods fail," mouth-to-mouth ventilation can be attempted, but the method is "somewhat inexact."

Since so much of the other therapeutics of the time were unsatisfactory, detailed nutritional support was emphasized, and it worthwhile to examine the book for its culinary recipes alone. For instance, instructions are provided for nine different types of gruel.



*2009 WLM Board of Trustees. Seated from the left: Dr. Donald Caton, Dr. Lydia Conlay, Dr. William Hammonds, Dr. George Bause and Dr. Adam Carinci. Standing from the left: Patrick Sim, Dr. Douglas Bacon, Dr. Doris K. Cope, Dr. Mark Schroeder, Dr. R. Dennis Bastron, Dr. Bradley Smith, Dr. Adolph Giesecke, Dr. Charles Tandy, Dr. Susan Vassallo, Dr. Selma Calmes, Dr. Mary Ellen Warner, Dr. Jonathan Berman and Dr. Kathryn McGoldrick.*

## Book Review

### **Enduring Contributions of Henry K. Beecher to Medicine, Science, and Society,” Editors Edward Lowenstein and Bucknam McPeck, Wolters Kluwer/Lippincott, Williams and Wilkins, *International Anesthesiology Clinics*, 45:4, Fall 2007 Part I and 46:1, Winter 2008, Cincinnati.**

by Bradley E. Smith, M.D.

Professor of Anesthesiology, Emeritus  
Vanderbilt University School of Medicine

This review of “Enduring Contributions of Henry K. Beecher to Medicine, Science, and Society”, Editors Edward Lowenstein and Bucknam McPeck, Wolters Kluwer/Lippincott, Williams and Wilkins, *International Anesthesiology Clinics*, 45:4, Fall 2007 Part I and 46:1, Winter 2008, Cincinnati, has been delayed by several factors, the most prominent being that the publishers were unwilling to provide a complimentary set for review.

The format is easily readable, but this reviewer is offended by the publisher’s policy of using numerals within the text to substitute for spelling out “one, two, three, etc., and the obvious use of a computer spell checker instead of a real person proof-reader. This resulted in the occasional total nonsense sentence such as “let” where “lest” was intended and “nuance” where “nuanced” was intended.

The focus of the collection consists of several reprints of some Beecher reports chosen by the editors, each followed by an extensive commentary by an assigned author. In addition, there are several personal recollections of Beecher written mostly by adoring former residents and colleagues, but including one by a prominent academic anesthesiologist who points out he did not know Beecher well at all.

Almost anomalous, but my favorite part of the collection, are the two chapters by Michael Gionfriddo which contribute a wealth of previously, almost unknown details about the first thirty years of Beecher’s life. Gionfriddo provides meticulously documented details of this period, which other authors intimate Beecher may have actively obfuscated throughout his life.

Both Scott H. Podolsky and Lara Freidenfelds provide exemplary scholarly analysis of the respective Beecher papers they were assigned and do not attempt to minimize the controversy and downright animosity engendered by these Beecher publications, both from the anesthesiologist community, and from academics in other medical fields. However, they cor-

rectly point out that non academic medical practitioners and the public may have been more receptive to Beecher’s various stirring pronouncements.

George A. Mashour’s chapter was previously published in a similar form in this journal (*Bulletin of Anesthesia History*). However, for those who missed it or who have forgotten it, it is a MUST READ portion of this book. It outlines Beecher’s involvement with the CIA and US Army and the use of LSD in human subjects. Mashour opines that all of Beecher’s subsequent history could be reinterpreted in light of this previously little publicized Beecher episode.

A very interesting summary evaluation of Beecher’s contributions was written by a highly qualified academic anesthesiologist, William Hamilton. With authority he reminds us of the resistance to academic anesthesia which Beecher and most early academics faced. Hamilton was able to frame Beecher’s accomplishments in a broad context of the contemporary complex of issues and reactions to Beecher which is lacking in some of the other chapters.

The balance of the chapters are generally complimentary recollections of Beecher’s more endearing qualities and a few of his innocuous foibles by former residents, long term friends, or long term co-faculty members.

The editors point out that this publication is not intended as a biography. However, this reviewer doubts that a much more revealing biography is likely to appear. Due to Beecher’s lifelong crusade to confuse his past and to present himself in public in the best possible perception, it seems unlikely that much reliable new source material will ever become available.

The editors have produced essentially a paean or panegyric to Beecher. Since this work is likely to be the only historic/biographic work on Beecher, this reviewer wishes that a few contributions from authors more critical of Beecher had been

included. I feel this might have resulted in a more balanced record of the man for future readers. Many such qualified commentators are still alive.

However, even Will Shakespeare sometimes voiced some crazy opinions. With apologies to Will and his Mark Antony, let me propose a rewrite: “The good that men do should live after them! Let (the evil be) their other history be interred with their bones.” The good accomplished by Harry Knowles Unangst should, indeed, obscure any other remembrance of him. This book, a loving memorial, will undoubtedly facilitate that result.



# From the Literature

by A.J. Wright, M.L.S.

Associate Professor and Clinical Librarian  
Department of Anesthesiology  
University of Alabama at Birmingham

*Note: I have examined most of the items listed in this column. Books can be listed here more than once as new reviews appear. Older articles are included as I work through a large backlog of materials. Some listings are not directly related to anesthesia, pain or critical care; I interpret those categories very broadly. Some will concern individuals important in the history of the specialty [i.e., Harvey Cushing or William Halsted] who also achieved in other areas or widely-used equipment. I also include career profiles of living individuals. Non-English materials are so indicated. I urge readers to send me any citations, especially those not in English, that I may otherwise miss!*

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## INVITATION

Dear Colleagues,

It is certainly a privilege and a great pleasure to invite you to the **7<sup>th</sup> International Symposium on the History of Anaesthesia (ISHA)** to be held on the island of Crete, October 1<sup>st</sup> to 3<sup>rd</sup>, 2009.

The **7<sup>th</sup> ISHA** follows six very successful meetings in Rotterdam (1982), London (1987), Atlanta (1992), Hamburg (1997), Santiago de Compostela (2001) and most recently in Cambridge (2005). Crete, Greece and the wider Mediterranean area were chosen as the venue for the **7<sup>th</sup> ISHA** as not only the birth place of **Hippocrates**, the father of modern Medicine, but also of the god of Sleep "**Hypnos**" and of the "**goddess of opium**", a well known symbol of Anaesthesia & Analgesia.

The goal of the **7<sup>th</sup> ISHA** is to promote greater awareness into the History of **Anaesthesia & Analgesia through the ages**. To this purpose, special sessions will be devoted to all major historical periods, from antiquity to modern times, to make better known accomplishments, decisive, as well as trivial, that brought the specialty of Anaesthesia to its present scientific status.

We hope that the island of Crete will offer participants not only an ideal environment to devote themselves to scientific pursuits, but also ample opportunities to enjoy a unique cultural and historical setting among wonderful landscapes.

We look forward to welcome you, all, to Heraklion, to Crete and to Greece in the next **International Symposium on the History of Anaesthesia**.

Professor **Helen Askitopoulou**

### CONGRESS LOCATION

#### **Heraklion - Crete, Greece, "8000 years of myth and history"**

**Crete**, the birth-place of Aegean civilization, is the biggest Greek island lying across the southern part of the Aegean Sea in the cross roads of three continents: Europe, Asia and Africa. **Heraklion**, the capital of modern Crete blends the history of Minoan civilisation with the Cretan tradition, culture and famous Cretan hospitality.

### KEY DATES

<b>September 2008:</b>	Publication of 1st Announcement
<b>May 1, 2009:</b>	Deadline for Abstract Submission
<b>October 1-3, 2009:</b>	Congress Dates
<b>Congress Website:</b>	<a href="http://www.ISHA2009.com">www.ISHA2009.com</a>

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## Anesthesia Foundation 2008 Book/ Multimedia Award Winner Named

The winner of The Anesthesia Foundation's 2008 Book/Multimedia Education Award was announced on October 20, 2008, at the American Society of Anesthesiologists Annual Meeting in Orlando, Florida. James R. Munis, M.D., Ph.D., received the award for his monograph *Just Enough Physiology*. Dr. Munis will be presented the award of \$10,000 at the Academy of Anesthesiology 2009 spring meeting in St. Petersburg, Florida.

This prestigious award is awarded every four years for excellence and innovation in books or multimedia with signifi-

cant impact on the science and practice of anesthesiology, critical care, or pain medicine. Previous award winners include Dr. B. Raymond Fink (1978-1979) for *Laryngeal Biomechanics*, Dr. David L. Brown (1991-1993) for the *Atlas of Regional Anesthesia*, and Julie Fenster for *Ether Day*.

James R. Munis, M.D., Ph.D., is Assistant Professor of Anesthesiology and Physiology at the Mayo School of Medicine in Rochester, Minnesota. He teaches Cardiopulmonary Physiology to medical students, residents, fellows and graduate students.

Dr. Munis has done clinical research in cerebral perfusion pressure and intervascular volume assessment.

His single-authored monograph *Just Enough Physiology* is a core resource in the Anesthesiology Residency program and in the physiology course in the Mayo School of Medicine.



*Photo of Dr. Ralph M. Waters in Brazil in 1964.  
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### **Bulletin of Anesthesia History**

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