

# Military Anesthesia Trainees in WWII at the University of Wisconsin

## *Their Training, Careers, and Contributions*

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### ABSTRACT

The emerging medical specialty of anesthesiology experienced significant advances in the decade prior to World War II but had limited numbers of formally trained practitioners. With war looming, a subcommittee of the National Research Council, chaired by Ralph M. Waters, MD., was charged with ensuring sufficient numbers of anesthesiologists for military service. A 12-week course was developed to train military physicians at academic institutions across the country, including the Wisconsin General Hospital. A total of 17 officers were trained in Madison between September 1942 and December 1943. Notably, Virgil K. Stoelting, the future chair of anesthesiology at Indiana University, was a member of this group.

A rigorous schedule of study and clinical work ensured the officers learned to administer anesthesia safely while using a variety of techniques. Their leadership and contributions in the military and after the war contributed significantly to the further growth of anesthesiology.

**T**HE decade prior to World War II (WWII) saw great advances in the organization and support of anesthesiology as a specialty in the United States. The American

Society of Anesthetists (later to become the American Society of Anesthesiologists [ASA]) was founded from the New York Society of Anesthetists in 1935. The American Board of Anesthesiology was established by the American Medical Association in 1938 and administered its first examination in 1939.<sup>1,2</sup> Despite these advances, the number of trained physicians specializing in the practice of anesthesiology remained small. The situation in the military Medical Corps mirrored that seen across the country. With WWII looming, the National Research Council in cooperation with the ASA developed a subcommittee on anesthesia in 1940. The original members included several prominent figures: Emery Rovenstine, M.D. (Professor and Chair of Anesthesiology, Bellevue Hospital, New York City, New York) (1895–1960); John Lundy, M.D. (Professor and Head of Anesthesiology, Mayo Clinic, Rochester, Minnesota) (1894–1973); Ralph Tovell, M.D. (Chair of Anesthesiology, Hartford Hospital, Hartford, Connecticut) (1901–1967); and Lewis Booth (Anesthesiologist, Roosevelt Hospital, New York City, New York) (1885–1972). The subcommittee was chaired by Ralph Waters, M.D. (Professor and Chair of Anesthesiology, University of Wisconsin, Madison, Wisconsin) (1884–1979).<sup>1,3–5</sup> Later additions to the committee included Henry Beecher, M.D. (Professor of Anesthesiology, Harvard Medical School, Chief Anesthetist, Massachusetts General Hospital, Boston, Massachusetts) (1904–1976) and Paul Wood, M.D. (Anesthesiologist, Secretary of the ASA, Curator Wood Library-Museum) (1894–1963).<sup>5</sup> These men were given the task of developing an accelerated anesthesia training program that would rapidly increase the number of anesthesia-trained physicians available to the military. They were also to evaluate the anesthesia resources among all U.S. physicians.<sup>4</sup>

Initially planned for 6 months, though shortened to only 12 weeks, a course was developed over the next 2 yr to train military physicians in anesthesiology. This included didactic and clinical teaching at selected academic institutions across the country. Training the military officers at camp hospitals was considered, but it was felt that civilian hospitals would provide a better clinical experience. The subcommittee received lists from the ASA of approximately 300 known

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physician anesthetists and graded them according to individual capability. In addition, 37 hospitals were graded according to their ability to train anesthetists.<sup>6</sup> Institutions were selected from these lists, including places such as New York University, Stanford University, University of California-San Francisco, Lahey Clinic, Mayo Clinic, and the Wisconsin General Hospital at the University of Wisconsin-Madison whose anesthesia department was chaired by Dr. Waters.<sup>7</sup> Many of the trainees were volunteers from the Medical Corps with some interest in anesthesiology. However, it is unknown whether all participants were volunteers or if some were simply assigned to the course.<sup>8</sup> A total of 17 military officers in three separate groups participated in the course in Madison, Wisconsin, between September 1942 and December 1943.

## Materials and Methods

The Ralph Waters Collection at the University of Wisconsin Archives was searched for information on the 12-week course and the men who participated. Most of the information presented was acquired from letters between Dr. Waters and the various officers after their training was complete. Some of the information, especially the trainees' biographical information and prior education and medical experience, was collected from documents provided by the trainees themselves at the start of each 12-week course. Information on the postwar careers of the men was acquired from the archives of the Wood Library-Museum, which included the ASA and American Medical Association membership directories from the 1940s and 1950s. Finally, board certification information was collected from the American Board of Anesthesiology website.

## Results/Discussion

### Group I

The first group of five trainees arrived in Madison in the fall of 1942, 10 months after the United States entered the war: Captain Jack M. Bailis, and First Lieutenants Paul Cohen, Rene A. Solis, Robert A. Huber, and William C. Alston.<sup>9</sup> Bailis was from Chicago, Illinois. He completed a 1-yr internship at Jackson Park Hospital in Chicago and then entered general practice after graduating from the University of Illinois School of Medicine in 1938.<sup>10,11</sup> Prior to coming to Madison, he was stationed at Fort D.A. Russell, Texas. Cohen was from Woonsocket, Rhode Island, and had completed a 2-yr internship and 10 months of general practice since graduating from the University of Vermont College of Medicine in 1939. He was stationed at Camp Lee, Virginia. Solis, from Rio Grande City, Texas, graduated from Saint Louis University School of Medicine in 1929 before his internship at St. Mary's Hospital in St. Louis, Missouri.<sup>12</sup> He was posted at the Station Surgeon's Office, Fort Sam Houston, Texas. From Charter Oak, Iowa, Huber completed a 1-yr internship after graduating from the University of Iowa College of Medicine in 1941. He arrived from Station

Hospital, Jefferson Barracks, Missouri. Alston, from Checotah, Oklahoma, graduated from the University of Oklahoma College of Medicine in 1937 where he undoubtedly had some exposure to anesthesia.<sup>11</sup> As seniors, Oklahoma medical students were required to take 16 clinical hours in anesthesia and perform 12 general anesthetics.<sup>13</sup> He completed a 2-yr surgery residency and practiced for about 5 yr with some experience in anesthesia prior to arriving in Madison from Station Hospital, Scott Field, Illinois.<sup>11</sup>

### Schedule

The schedule was strenuous and included at least 6 h of operating room experience daily; four 2-h didactic sessions weekly with a predetermined list of required topics; pre- and postoperative rounds; consultations involving pain, respiratory, and circulatory emergencies; and several conferences, staff meetings, and literature reviews weekly.<sup>14,15</sup> Topics covered included the physiology of circulation and respiration as well as pharmacology and chemistry. Emphasis was placed on recognition, prevention, and treatment of shock. Inhalational and intravenous administrations of anesthesia were taught. The officers were instructed on and performed a variety of regional anesthesia techniques including spinal, abdominal, scalp, and infiltration or field blocks for intraoperative and postoperative pain management. They learned methods of resuscitation such as oxygen therapy, airway management, fluid replacement, transfusion of blood, and rescue medications. Finally, they were taught strategies for managing anesthetic emergencies such as vomiting, convulsions, syncope, and hyperpyrexia.<sup>15</sup> A quote from the Waters Papers (presumably from Dr. Waters) describes the course. "As much of the officers' time as could be used profitably in observation and practical experience in the operating rooms was scheduled for each day. The remainder of their time was taken up in didactic work, quizzes, demonstrations, etc. They were expected to spend the remainder of the time available in reading and discussions in their study room (no. 100), Wisconsin General Hospital."<sup>16</sup>

The course began on Monday, September 28, 1942, and concluded on Friday, December 18, 1942. The officers received a grade (unsatisfactory, satisfactory, good, or excellent) for each week, and there was strict documentation of the number of hours each was absent. The men appear to have performed well, receiving high marks—predominantly G's, with a few S's and E's as well. Of note, there were no unsatisfactory grades. The only recorded absences were Alston for 12 h visiting his father in Chicago and Huber for 4 days due to the death of his father.<sup>9</sup>

### After-Training

After the course, the trainees returned to their various posts with the ability and desire to provide anesthesia to their surgical patients. Unfortunately, it appears Waters had little correspondence with the first group of men after they left Madison. However, in a letter from July 1944, Huber

reported spending 18 months doing anesthesia at Jefferson Barracks with “no deaths.”<sup>17</sup> He was also able to train three nurses to assist him with “fairly good results.”<sup>17</sup> In April 1944, he was transferred to Roswell Army Airfield, Roswell, New Mexico, where he continued to practice anesthesia.<sup>17</sup>

### Post-WWII

Only Cohen went on to specialize in anesthesia after the war. He returned to practice in Woonsocket, Rhode Island, and was an active ASA member from at least 1952–1968.<sup>18</sup> Alston and Bailis practiced general surgery, while Huber became a member of the American Academy of General Practice. Solis went on to general practice as well.<sup>19</sup>

### Group II

A second group of trainees arrived in Madison in the spring of 1943 and received their training from March 29 to June 19.<sup>20</sup> This group also consisted of five members, all First Lieutenants, and included George H. Finer, Samuel E. Greenspon, Harold Rubin, Milton E. Slagh, and Harry G. Thompson (fig. 1).<sup>20,21</sup>

Finer came from 37th Station Hospital, Desert Training Center in Yuma, Arizona. Originally from Wisconsin, he attended the University of Wisconsin where he received his medical degree in 1940 and certainly had anesthesia exposure through Dr. Waters. His internship was at Touro Infirmary in New Orleans, Louisiana, and residency at Gundersen Clinic in La Crosse, Wisconsin. His prior anesthesia experience included approximately 50 ethylene–oxygen anesthetics and a similar number of spinal anesthetics as well as 300–350 anesthetics with sodium pentothal. Much of this involved obstetrics, which he aspired to practice in the future.<sup>22</sup>

Greenspon came from Buckley Field in Denver, Colorado. Originally from Franklin, New Jersey, he trained in Philadelphia at Temple University, receiving his medical

degree in 1937. Internship and residency included a year at State Hospital in Scranton, Pennsylvania, and a second year at Memorial Hospital in Philadelphia with 3 months of anesthesia training. He had a variety of experiences in 3 yr of civilian practice, including work in cardiology, internal medicine, and otolaryngology. He hoped to eventually practice solely anesthesia.<sup>22</sup>

Rubin arrived from the Spokane Army Air Depot in Galena, Washington. He was from Yonkers, New York, and attended New York University from 1928 to 1931 and then the University of Arkansas where he received his medical degree in 1936. His training included an internship at St. John’s Riverside Hospital and Yonkers Professional Hospital in Yonkers, New York. He had considerable anesthesia experience, practicing chiefly nitrous and ether anesthesia at the aforementioned two hospitals for the previous 5 yr. His aspirations included an anesthesia practice and certification by the American Board of Anesthesiology.<sup>22</sup>

Slagh was previously stationed in Sioux Falls, South Dakota. A Michigan resident, he attended Hope College in Holland, Michigan, and then received his medical degree from the University of Michigan in 1938. After internship at Hurly Hospital in Flint, Michigan, he worked in general practice for 3 yr. His anesthesia experience was limited but included a 2-month course in medical school and a few ether and nitrous anesthetics during that time, as well as in private practice. He, too, wished to eventually limit his practice to only anesthesia.<sup>22</sup>

The final member of the group was Harry Thompson from Sheppard Field, Wichita Falls, Texas. Originally hailing from Ina, Illinois, he was the oldest of the group at age 36. His education included college at Washington University in St. Louis, Missouri, and medical school at the University of Maryland, where he graduated in 1932. He completed an internship at Good Samaritan Hospital in Cincinnati, Ohio,



**Fig. 1.** Officers from Group 2 outside Ralph Waters home in Madison, WI. From left, Milton E. Slagh, Samuel E. Greenspon, George H. Finer, Harold Rubin, and Malcom H. Hawk (ex-resident visitor). The welcoming hostess, Louise Diehl Waters (Ralph Waters’ wife), is standing in the doorway. Not pictured: Harry G. Thompson. (Courtesy of University of Wisconsin Department of Anesthesiology Archives).



before 9 yr of general practice medicine. His desire was to return to Ina, Illinois, to practice surgery and anesthesia.<sup>22</sup>

These men were evaluated using the same grading system described for Group I, receiving mostly G's and E's without any unsatisfactory marks. After 2 months, Dr. Waters commented that "These five men are proving very keen, enthusiastic and worthwhile. I like their attitude."<sup>23,24</sup>

### After-Training

After completion of the course, they returned to their various hospitals but maintained considerably more contact with Dr. Waters than the initial group of trainees. At the 37th Station Hospital, Finer provided mostly spinal anesthesia with procaine for general surgery procedures below the umbilicus. The lack of "gas machines" and an "endotracheal set" prevented the use of general anesthesia despite the availability of ether, chloroform, and other necessary agents.<sup>25</sup> He also attempted to expand his services outside the operating room, providing blocks for sciatica and intercostal neuralgia and reported that "I really am enjoying myself."<sup>25</sup>

Greenspon returned to Buckley Field for a short period but was then transferred several times before ending up in North Africa by September 1943.<sup>26,27</sup> He wrote a letter to Dr. Waters from North Africa voicing his frustrations at not being able to practice anesthesia and asking for Waters' help with facilitating a transfer. Interestingly, much of his work at the infirmary in North Africa was done on the barter system. A clinic visit for one of the "Arab" patients typically cost about four eggs.<sup>27</sup> He did eventually have the opportunity to work in anesthesia, which consisted primarily of field work at the most forward hospitals. Nitrous and ether anesthetics were routine with limited use of intercostal and paravertebral blocks. Endotracheal intubation and bronchoscopy were common.<sup>28</sup>

Rubin was also frustrated by being unable to practice anesthesia. In mid-July 1943, he was in the North Atlantic and had administered only two anesthetics since leaving Madison a month earlier. He also wrote to Waters in hopes that Waters might have some influence on the situation. His primary concern was that perhaps his own performance had caused Dr. Waters to give him a poor evaluation, which led to his assignment as a surgeon rather than an anesthetist.<sup>29</sup> Waters assured him that this was not the case. It is unknown whether Rubin was ever able to make use of his talents in anesthesia.<sup>30</sup>

After returning to Sioux Falls, South Dakota, Slagh continued his anesthesia training under Captain Maurice Cooper. Within his first month, he performed a variety of anesthetics using spinal, intravenous, and inhaled techniques, approximately 55 in total.<sup>31</sup> At the end of July 1943, however, he was transferred to the Air Service Command of the Army in Georgia and out of anesthesia. As he was preparing for assignment overseas, he wrote a disgruntled letter to Waters asking for help in returning to the practice of anesthesia.<sup>32</sup>

Only 2 days later, Waters replied with a short but reassuring letter that the situation would soon improve.<sup>33</sup> As it turns out, Slagh was sent in early September to McClellan Field in Sacramento where he conducted spinal, caudal, and intravenous anesthetics for most of the subsequent 2 months.<sup>34</sup> His next letter, addressed from England in April 1944, contained little information of his activities but did report that he was again out of anesthesia and had been for nearly 5 months.<sup>35</sup> Dr. Waters wrote to Colonel Tovell (who had resigned from the Subcommittee on Anesthesia for active army service)<sup>5</sup> at the Chief Surgeon's headquarters in London in an attempt to elicit a reassignment.<sup>36</sup> Little came of this effort until January 1945 when Slagh was able to attend a medical meeting in London where he spoke with Colonel Tovell directly about his training under Dr. Waters and his desire to return to anesthesia practice. His letter at that time seemed quite encouraging, but his correspondence afterward was limited.<sup>37</sup>

In Wichita Falls, Texas, Thompson was immediately assigned to the anesthesia section of the surgical service under an officer he referred to simply as "Forastiere."<sup>38</sup> The section consisted of another officer and three nurse anesthetists as well. Thompson acted as a consultant with a supervisory role, which he shared with Forastiere. Responsibilities included running the operating room, scheduling cases, rounding pre- and postoperatively, and deciding type of anesthesia.<sup>38</sup> In late July, Thompson was transferred to Gulfport Field, Mississippi, where he was placed in charge of the operating rooms in addition to taking care of orthopedic patients. He helped to further train the two anesthetists assigned there and also developed an anesthesia record system for the facility. In his letter to Dr. Waters in August 1943, he reports an interesting obstetrical case involving a 31-yr old who died shortly after delivery.<sup>39</sup> The case was discussed at a staff meeting in the Wisconsin department. A letter from Noel Gillespie, M.D. (Anesthesiologist, University of Wisconsin, Madison, Wisconsin) (1904–1955) reported the conclusions of the discussion. Aspiration of gastric contents was thought most likely, as Dr. Waters had initially suspected, but other possibilities were discussed including pulmonary embolus, which was suggested by O. Sidney Orth, M.D. (Professor and future Chair of Anesthesiology, University of Wisconsin, Madison, Wisconsin) (1906–1964). A second case reported by Thompson was also discussed involving a carbon dioxide tank mislabeled as nitrous oxide by the manufacturer that nearly resulted in a second death.<sup>40</sup> From Mississippi, Thompson was transferred to Kansas where he spent 3 months with little exposure to anesthesia and then in June 1944 was sent to Presque Isle, Maine.<sup>41,42</sup> During this time, he was again in charge of the operating rooms and was promoted to captain.<sup>42</sup>

### Post-WWII

Finer, Greenspon, and Rubin all became ASA members.<sup>18</sup> Finer completed an anesthesia residency at Bellevue Hospital in New York and was board-certified in 1948.<sup>18</sup>‡ He practiced for at least a short time in New York City prior

‡ American Board of Anesthesiology. Available at: <http://www.theaba.org>. Accessed December 21, 2011.



**Fig. 2.** Left-handed laryngoscope designed for Lt. George H. Finer by Mr. Hipple in Madison, WI, and made by the Foregger company. (Courtesy of the Wood Library-Museum).

to moving to Florida.<sup>18</sup> Upon retiring in 1982, he made several donations to the Wood Library-Museum including a German ether dropper from WWII and a left-handed laryngoscope designed by Mr. James Hipple in Madison and made by the Foregger company (fig. 2).<sup>43</sup> Hipple played an instrumental role in the development of the Wisconsin blade as well. According to Dr. Waters, “Mr. Hipple has built for us many pieces of apparatus which later served as models for commercial manufacturers who sold their products throughout the world. In addition, Hipple has frequently produced equipment which was indispensable in our investigations and unobtainable in any other way.”<sup>44</sup>

Greenspon returned to Philadelphia. In 1946 he became an assistant instructor of anesthesia at the University of Pennsylvania.<sup>18</sup> Rubin became director of anesthesia at St. John’s Riverside Hospital in Yonkers, New York.<sup>18</sup> Thompson and Slagh both became general practitioners, although Thompson practiced some anesthesia and appears in the 1947 ASA membership directory.<sup>18,19</sup>

### Group III

The third and final group of trainees arrived in Madison in the fall of 1943 for their training from September 25 to December 18.<sup>45</sup> This group was the largest and consisted of seven members, including Captains John F. Beattie, Simpson S. Burke Jr., Milton Steinberg, and Virgil K. Stoelting, as well as Lieutenants Ervin N. Chapman, Albert E. Flagge, and Egon Kleinman (fig. 3).<sup>45,46</sup>

Beattie came from the 105th Evacuation Hospital in Camp Cooke, California. He had a B.S. from the University of Idaho and received his medical degree from the University of Oregon. His postgraduate training included a 1-yr rotating internship. He practiced for 13 yr in Renton, Washington, near Seattle with some experience in anesthesia during this time and spent 15 months in the Medical Corps prior to arrival.<sup>47</sup>

Burke was from Iowa. He graduated with a chemistry degree from the University of California, Los Angeles, in 1937 and completed his medical degree at Harvard in 1941. His final year of medical school included a 1-month anesthesia course under Dr. Henry K. Beecher at Massachusetts General Hospital. Prior to arriving in Madison from San Diego, California, he completed a 1-yr residency at the Royal Victoria Hospital in Montreal, Quebec. His primary interest was in surgery. However, he had a special interest in anesthesia and felt some knowledge of the subject was vital to being a successful surgeon.<sup>47</sup>

Chapman was from Tilton General Hospital, Fort Dix, New Jersey. His undergraduate and medical degrees as well as internship were all completed in Washington, D.C., at George Washington University and Hospital between 1938 and 1943. During this time, he completed approximately 100 ether, 25 ethylene, and 15 pentothal anesthetics. Anesthesia was his primary interest.<sup>47</sup>

Flagge also came from Tilton General Hospital. From Cincinnati, Ohio, he received chemistry and medical degrees from the University of Cincinnati in 1927 and 1931, respectively. His internship was at St. Mary’s Hospital, also in Cincinnati. From 1932 to 1943, he worked as an anesthetist at St. Mary’s, performing roughly 300 anesthetics per year, most using ether but occasionally spinal anesthesia.<sup>47</sup>

Kleinman was the only foreign member of the group. The son of Polish Jews in Berlin, his degree was from the University of Berlin in 1936. After graduation, he spent a year as an assistant to a urologist and 9 months studying at the Institute of Tropical Medicine in Antwerp, Belgium. In December 1937, he arrived in New York, where he passed the state board examination and completed a 1-yr internship at Manhattan General Hospital. During this year he met Arthur Leroy, a pupil of Dr. Rovenstine, and became



**Fig. 3.** Officers from Group 3. *Back row from left, Albert E. Flagge, John F. Beattie, Simpson S. Burke, and Virgil K. Stoelting. Front row from left, Milton Steinberg, Ervin N. Chapman, and Egon Kleinman.* (Courtesy of University of Wisconsin Department of Anesthesiology Archives).

interested in anesthesia, completing 3 months of training during that year. Kleinman began residency at Gotham Hospital in New York in 1939 and then spent the next 3 yr in general practice with significant experience in anesthesia before joining the Army on September 1, 1943.<sup>47</sup>

Milton Steinberg, who came from Camp Cooke with Beattie, was from Chicago, Illinois. He received an undergraduate degree from the University of Chicago in 1922 and a medical degree from Rush Medical College in 1925, which at that time was affiliated with the University of Chicago. From 1926 to 1942, he practiced obstetrics in Chicago at Edgewater Hospital and Mount Sinai Hospital before joining the military.<sup>47</sup>

Finally, Virgil Stoelting came to Madison from Fort Riley, Kansas. He was from Indiana and attended the University of Indiana from 1930 to 1936, graduating from the School of Medicine in 1936. His internship at the University of Indiana Hospital included 4 months of anesthesia. Before entering practice in Winchester, Indiana, in 1938, he also had 1 yr of surgical training at Waterbury Hospital in Waterbury, Connecticut. On June 16, 1942, he entered the armed services. Like Burke, he was interested in surgery but felt he needed to be well-versed in anesthesia.<sup>47</sup>

There is little information available about the performance of these men during their training in Madison.

### After-Training

After the completion of their 12 weeks of training, most members of the group maintained correspondence with Dr. Waters and the Wisconsin anesthesia department, with the exception of Beattie. Burke was sent for brief stays in Indiana, Illinois, and Louisiana before eventually joining a portable surgical hospital, unfortunately with little involvement

in anesthesia.<sup>48,49</sup> In a letter from June 20, 1944, he wrote to Dr. Waters concerned about the limited availability of drugs and equipment in the unit to which he expected to be assigned. He fervently read *ANESTHESIOLOGY* and the *ASA Newsletter* during this time and also wrote of plans to continue his anesthesia training after the war—possibly in Madison.<sup>50,51</sup> In reply Waters stated, “If I am living when you leave the service, I shall guarantee that you receive as near what you want in the way of training as it is possible to arrange either here or elsewhere as you may prefer at that time.”<sup>52</sup> In late July 1944, he attended a 4-week refresher course for medical officers in Brigham, Utah, where he was able to practice anesthesia. He wrote of the effects of high altitude on the anesthetic, specifically the implications of altitude on oxygenation.<sup>53</sup> In the fall of 1944, Burke found himself in New Guinea. He was quite frustrated with his assignment and lack of opportunity to practice anesthesia. With limited hope that his current situation would improve, he requested transfer to another unit where his skills might be better utilized. By March 1945, he was providing anesthesia in the field during combat missions in the South Pacific.<sup>54,55</sup>

Chapman had better luck with his assignment, at least in regard to anesthesia. He returned to Fort Dix for a short period before transferring to Camp Hood, Texas, from January to March 1944.<sup>56,57</sup> There he performed a few anesthetics, but opportunities were limited due to overstaffing and other duties in orthopedic and otolaryngology clinics and on wards. In March he expected to be assigned as anesthetist in a field hospital.<sup>56</sup> However, to his surprise, he received orders to join an Engineer Construction Battalion at Camp Claiborne, Louisiana, as a surgeon.<sup>57</sup> At the conclusion of this assignment, he moved on to Borden General Hospital



in Oklahoma, where he finally had the opportunity to more fully utilize his anesthesia training. By the end of May 1944, he became the Acting Chief of Anesthesia and later simply the Chief of Anesthesia, which included supervising and teaching the new class of nurse anesthetists that started in June.<sup>58</sup> He wrote to Waters in September about some of his difficulties in teaching. He also wrote about unusual cases and case logging in general with future aspirations to take the board examination.<sup>59</sup> Later, he was transferred to France where he wrote to Waters in March 1945 about his activities in anesthesia and his thoughts on the future of anesthesia as a specialty.<sup>60</sup>

Flagge was sent to William Beaumont General Hospital in Texas after his training in Madison. He was fortunate to work as an anesthetist, which involved instruction and supervision of student nurse anesthetists similar to the work Chapman was doing.<sup>61</sup> By June, however, he had been transferred to New Guinea and effectively away from anesthesia for some time while he awaited completion of a new hospital.<sup>62,63</sup> During these idle months, he received a promotion to captain.<sup>63</sup>

Egon Kleinman's first correspondence was with Noel Gillespie. Kleinman wrote from Wales and primarily seemed interested in obtaining any anesthesia literature Dr. Gillespie might be able to provide.<sup>64</sup> This was a common request among the trainees. In other letters, he wrote of interesting cases and continuously sought Waters' opinion. In a letter to Dr. Waters in April 1944, he reported being in charge of the anesthesia section of a 750-bed hospital and working with Colonel Tovell.<sup>65</sup> He was fairly involved with teaching and held a course in anesthesia for medical officers as well as nurses. He enjoyed his work but wrote fondly of his time in Madison, even challenging Dr. Waters to a ping-pong rematch on his next visit.<sup>66</sup> By September, Kleinman was in charge of anesthesia at a hospital in France.<sup>67</sup> More so than any other member of his group, he kept in contact with his fellow trainees and had updates on many of their activities in his letters back to the Wisconsin department.

After returning to Camp Cooke, Steinberg was sent to the desert near Yuma, Arizona, to prepare for his future work overseas. He worked in a variety of capacities including anesthesia call every fourth night—not as much involvement as he would have liked. Captain Damron was the anesthetist for the hospital and had been giving anesthesia at least part time for about 10 yr. Steinberg learned new techniques, especially for spinal anesthesia and wrote to Waters asking his opinions. Using general anesthesia was rare due to surgeons' dislike and lack of trained personnel to care for the patients postoperatively. He also wrote fondly of his time in Wisconsin.<sup>68</sup> By August he was stationed at Ft. Jackson, South Carolina, where he was joined by Beattie and continued to work under Captain Damron.<sup>69</sup> From there he traveled to England, Normandy, and Belgium before arriving in

Holland, from where he wrote in December 1944. His letter mentioned that Beattie was in charge of anesthesia but that “many anesthetics were given by briefly-trained nurses” and other surgical teams of “variable ability.”<sup>70</sup> He felt that much of his own time and expertise were being wasted.

Stoelting spent several months at Ft. Riley, Kansas, awaiting assignment, which came in May 1944.<sup>71,72</sup> Surprisingly, however, it was to the 128th Cavalry Reconnaissance Squadron, not a medical unit. In a letter in July, he voiced his frustration at not practicing anesthesia, and asked for any assistance Waters might be able to provide toward this end. In regard to the book *Fundamentals of Anesthesia* (a handbook produced for medical officers by the National Research Council and the Subcommittee on Anesthesia in 1942), which Waters sent all the trainees, Stoelting said, “I have read it thru several times but as yet haven't had the opportunity to put any of it into practice.”<sup>73,72</sup> It appears that he maintained contact with many of the men with whom he trained in Madison as he, like Kleinman, had reports on nearly all of them. By August the 128th Cavalry Reconnaissance Squadron was inactivated, and Stoelting was reassigned to O'Reilly General Hospital in Springfield, Missouri. He intended to spend some time at Winters General Hospital in Topeka, Kansas, before continuing on to Springfield, but in October, while at Winters, he received assignment to Heart of the Ozarks Regional Hospital, Ft. Leonard Wood, Missouri.<sup>73,74</sup> As chief of anesthesia, he led a department consisting of himself, two nurses, and another medical officer—who had received anesthesia training at Mayo Clinic. In addition to instituting an anesthesia recordkeeping system, he performed the first transsacral blocks and endotracheal intubations at the hospital.<sup>75</sup> He also started administering curare on occasion, with which the surgeons were quite pleased. In January 1945, he attended an anesthesia course at the University of Minnesota.<sup>76</sup>

### Post-WWII

After the war, Beattie returned to Washington where he was a general practitioner and served as the Renton City Health Officer for several years.<sup>77</sup> Burke returned to the University of Wisconsin where he completed an anesthesia residency and a 1-yr research fellowship funded by the National Research Council, which was renewed for a second year.<sup>78–80</sup> His work focused on a method for delivery of nitrous oxide in gaseous mixtures, absorption of carbon dioxide, and designing an apparatus for extraction of total gas content from blood.<sup>81</sup> He was an ASA member and became board-certified in anesthesiology in 1950.<sup>18</sup> The Staff Directory of the University of Wisconsin lists him as an assistant professor of anesthesia in 1951, and later he moved to California where he continued to practice anesthesia.<sup>19,82</sup> Chapman completed an anesthesia residency at Gallinger Municipal Hospital in Washington, D.C. He was an ASA member and became board-certified in 1953.<sup>18</sup> He later practiced in Virginia and Washington, D.C.<sup>19</sup> Kleinman

§ American Board of Anesthesiology. Available at: <http://www.theaba.org>. Accessed December 21, 2011.

returned to New York where he became an ASA member and later practiced in New York City.<sup>18</sup> Stoelting went on to complete residency at the University of Iowa.<sup>83</sup> He was an ASA member and was board-certified in 1950.<sup>83</sup>§ He had a long career as chair of the department of anesthesia at Indiana University School of Medicine from 1947 to 1977.<sup>84</sup> Finally, Flagge and Steinberg elected to practice obstetrics and gynecology.<sup>19</sup>

## Conclusion

The 17 men who participated in the 12-week course in anesthesia came from a variety of backgrounds and had variable amounts of anesthesia experience, but what they accomplished in only 12 weeks was truly remarkable. Not only were they able to administer anesthesia safely and effectively using a variety of techniques, but they also led military anesthesia departments across the country and throughout the world during WWII. This speaks of the effort and abilities of these men as well as Dr. Waters and the rest of the Wisconsin Anesthesia Department. From their letters, it is evident that at least 13 of the 17 (and likely more) utilized their anesthesia training—some more thoroughly than others. Many of the men were initially frustrated by their assignments in other areas of medicine but most eventually made their way back to anesthesiology by the end of the war. Nine of the 17 men became ASA members and four became board-certified anesthesiologists. Unfortunately, all of the trainees are now deceased. The last surviving member, Samuel Greenspon, died on September 5, 2008, at the age of 95.¶

It is clear from their letters that the men valued their time at the University of Wisconsin. They developed lasting relationships with each other and Dr. Waters that cultivated interest and learning in anesthesia that lasted far beyond the end of the 12-week course. Even after the trainees left Wisconsin, the department provided journals and textbooks while the trainees contributed case reports and presented questions for discussion. Through practicing and teaching the knowledge and skill they acquired, these “12-week wonders” certainly contributed to the growth of anesthesia in the decades following WWII.

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