

### Immunologists during the First World War: One Soldier-Scientist's Experience

**Stanhope Bayne-Jones** (AAI 1917, President 1930–31)

Beyond its untold cost in human suffering, the First World War profoundly affected scientific and biomedical research both in Europe and the United States. Researchers on both sides of the Atlantic necessarily refocused their intellectual energies to work in support of their nations' war efforts. As armies clashed, communications among scientists in warring nations ceased, as did opportunities for U.S. medical students to study in Europe. However huge its impact on individual M.D.'s lives and on worldwide biomedical research, the war also served to hasten dramatic changes already underway in American medical education and scientific research.

#### Transatlantic ties

Advancements in American science and medicine in the late nineteenth century owed a great deal to Europe. Until at least the turn of the century, U.S. medical schools and research institutes were considered inferior to their European counterparts, especially those in Germany. Men and women of science were, therefore, expected to complete their education by studying at European universities or laboratories before returning to the United States. German universities alone attracted approximately 18,000 American students from 1870 to 1900.<sup>1</sup>

This transatlantic migration began to decline in the first 15 years of the twentieth century as a full-scale university system began to develop in the United States. For university administrators, the new system was able to tap the cadre of scientists and physicians who had studied in

Germany. And university medical schools were compelled to standardize basic educational and clinical requirements after the *Flexner Report* of 1910 criticized the schools for their failure to produce graduates of consistent quality and abilities.<sup>2</sup> As higher education in the United States evolved, the transatlantic migration slowed significantly. At the outset of the war, it ceased almost entirely.

Along with educational improvements came advancements in scientific and medical research. New scholarly societies formed, including AAI, founded in 1913, around newly defined disciplines and began publishing peer-reviewed journals, such as *The Journal of Immunology*, first published in 1916. Funding of science and medicine also changed dramatically. The federal government strengthened its commitment to scientific innovation, increasing the budget for research agencies, such as the National Bureau of Standards and the Public Health and Marine Hospital Service, and opening the Walter Reed Hospital (1909), where patient care, teaching, and research were integrated. University science and medical departments also increased their financial support for research. And, perhaps most significant, American businesses and leading philanthropists invested in science and medicine. The years 1900–1915 saw the establishment of the General Electric Research Laboratory (1900), the Rockefeller Institute of Medical Research (1901), the Carnegie Institution of Washington (1902), and the Rockefeller Foundation (1913).<sup>3</sup>

<sup>1</sup> Hugh Hawkins, "Transatlantic Discipleship: Two American Biologists and Their German Mentor," *Isis* 71, no. 2 (1980): 197–98.

<sup>2</sup> Abraham Flexner, *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching, Bulletin Number Four* (New York: Carnegie Foundation, 1910); John M. Barry, *The Great Influenza: The Epic Story of the Deadliest Plague in History* (New York: Penguin, 2005), 82–87. The Flexner Report brought national attention and scrutiny to the fact that few standards for admission and graduation existed for American medical schools. Shortly after the release of the report, medical schools were forced to raise their standards. Graduates of those schools that failed to conform to the new American Medical Association rating system motivated by the Flexner Report were denied medical licenses.

<sup>3</sup> Daniel J. Kevles, "George Ellery Hale, the First World War, and the Advancement of Science in America," *Isis* 59, no. 4 (1968): 427–28.



**Walter Reed General Hospital, ca. 1915**  
Library of Congress, Prints & Photographs Division,  
Harris & Ewing Collection

### One soldier-scientist's story

At the war's outset in Europe in August 1914, more than two and a half years before the U.S. Congress declared war on Germany on April 6, 1917, just 776 of the approximately 140,000 practicing physicians and M.D.s entering the new research facilities in the United States were serving in the military.<sup>4</sup> By the end of February 1918, more than 15,000 doctors were serving, and, by the time of the armistice, nine months later, that number had grown to 38,000.<sup>5</sup> During this period of rapid mobilization, the professional trajectories of thousands of American physicians were altered. Entering medicine at a time that the emergence of research laboratories in the United States widened the range of career choices, this generation of American M.D.s faced a new set of choices for service in wartime: they could serve as combat physicians, work in U.S. Army laboratories, or remain in their laboratories carrying out research necessary for the war effort.

One young M.D., who put his prestigious position in immunology research on hold and volunteered in May 1917 for early deployment as a combat physician, was Stanhope Bayne-Jones, a future AAI president.

*Continued next page*

<sup>4</sup> Barry, *The Great Influenza*, 139.

<sup>5</sup> Dorothy A. Pettit and Janice Bailie, *A Cruel Wind: Pandemic Flu in America, 1918–1920* (Murfreesboro, TN: Timberlane, 2008), 43; Barry, *The Great Influenza*, 139–40.

## Stanhope Bayne-Jones

The 17th President of AAI

### A Biographical Sketch

Born in New Orleans on November 6, 1888, Stanhope Bayne-Jones was orphaned when his father committed suicide in 1894, one year after his mother had passed away due to complications arising from the birth of his younger brother. Bayne-Jones lived with his grandfather, Joseph Jones, a practicing physician and a professor of medicine and chemistry at Tulane University, for two years, until Joseph's death in 1896.

After a childhood filled with boarding schools and moves from one relative's home to another's, Bayne-Jones entered Yale, where he received his A.B. in 1910. Determined to follow in his grandfather's footsteps, he began his medical studies at Tulane University before transferring to the Johns Hopkins University in 1911. He received his M.D. in 1914 and remained at the Johns Hopkins Hospital as house officer (1914–15) and assistant resident pathologist (1915–16). After he was appointed head of the new Laboratory of Bacteriology and Immunology at Johns Hopkins in early 1916, Bayne-Jones studied bacteriology and immunology under Hans Zinsser (AAI 1917, president 1919–20) at the Columbia University College of Physicians and Surgeons in New York for six months before the laboratory opened.

Bayne-Jones joined the U.S. Army Medical Reserve Corps (MRC) in 1915. He was commissioned at the rank of first lieutenant and promoted to captain the following year. In May 1917, he volunteered to be integrated into the British Expeditionary Force. He was reassigned to the American Expeditionary Forces upon their arrival in March 1918. After the armistice, he was promoted to major and remained in Germany until he was relieved of active duty in May 1919.

Bayne-Jones returned to Johns Hopkins in the summer of 1919 and became assistant professor of bacteriology the following year. In 1923, he accepted a position as a professor of bacteriology at the recently opened University of Rochester School of Medicine and Dentistry. He left Rochester in 1932 and became a professor of bacteriology at Yale University School of Medicine, where he was appointed dean three years later. From 1932 to 1938, he was also Master of Trumbull College at Yale.

When the Second World War began in 1939, Bayne-Jones was promoted to lieutenant colonel in the MRC and, two years later, headed the Commission on Epidemiological Survey of the Board for the Investigation and Control of Influenza and other Epidemic Diseases in the Army. From 1942 to 1946, Bayne-Jones was once again an active-duty officer, serving multiple positions within the Office of the Surgeon General. He quickly rose through the ranks, becoming colonel in 1942 and brigadier general in 1944. He was relieved from active duty in 1946 and, the following year, accepted an appointment as president of the Joint Administrative Board of the New York Hospital-Cornell Medical Center, a position he held until 1953. After serving as the technical director of research and development for the Office of the Surgeon General (1953–56), Bayne-Jones was appointed by the secretary of the U.S. Department of Health, Education, and Welfare in 1957 to chair an advisory committee charged with establishing guidelines for National Institutes of Health research following that year's dramatic increase in the NIH budget.

His many military and civilian honors include a British Military Cross (1917), a French Croix de Guerre (1918), election to the American Philosophical Society (1944), the U.S. Typhus Commission Medal (1945), the Chapin Medal of the Rhode Island State Medical Society (1947), the Bruce Medal of the American College of Physicians (1949), the Passano Foundation Award (1959), and a Decoration for Outstanding Civilian Service from the U.S. Army (1965).

In addition to serving AAI as president (1930–31), Bayne-Jones was an associate editor of *The Journal of Immunology* (1936–49).

Bayne-Jones died at his home in Washington, DC, on February 20, 1970, at the age of 81.



**Stanhope Bayne-Jones, ca. 1917**

National Library of Medicine, Stanhope Bayne-Jones Papers

His experiences illustrate some of the many challenges and issues faced by physicians, including future immunologists, in military service. All would face such dilemmas as when and where to volunteer their services, how to cope with the trauma of war, and how to readjust to the laboratory after the war.

Stanhope Bayne-Jones earned his M.D. at the Johns Hopkins University in 1914 under William Welch, dean of the Johns Hopkins School of Medicine.<sup>6</sup> Founded in 1893 and based on the German system, the Johns Hopkins University School of Medicine was praised in the Flexner Report as “the first medical school in America of genuine university type.”<sup>7</sup> After graduating with high honors, Bayne-Jones remained at Johns Hopkins, where he rose from House Officer in Medicine to Assistant Resident Pathologist within one year. In early 1916, he was offered and accepted the opportunity to head the new Laboratory of Bacteriology and Immunology in the Department of Pathology at the Johns Hopkins Hospital.

Despite research opportunities emerging in the rapidly changing American medical and scientific landscape, the U.S. declaration of war in April meant that recent graduates, by May 1917, were considering how they could best contribute to the war effort.

### Enlisting qualified army physicians in the Medical Reserve Corps (MRC)

The number of army physicians rose dramatically with the rapid growth of the standing U.S. Army following the 1917 draft. The ranks of the army had expanded from fewer than 200 thousand troops in March 1917 to over one million within a matter of months. Many of the most prominent men in medicine volunteered their services, including Welch, Victor Vaughan<sup>8</sup> (AAI 1915), and Simon Flexner<sup>9</sup> (AAI 1920).

Already, at the outset of hostilities in Europe, U.S. Surgeon General William C. Gorgas was concerned with enlisting enough qualified physicians in the Army MRC to ensure military preparedness. One of the first physicians he solicited was his grandnephew Stanhope Bayne-Jones. When “Uncle Willie”<sup>10</sup> wrote his nephew in the summer of 1915, Bayne-Jones was just beginning his career at Johns Hopkins.<sup>11</sup>



*The Johns Hopkins Hospital, ca. 1910*

Library of Congress, Prints & Photographs Division, Detroit Publishing Company Collection

Gorgas described the role that the MRC would play if the United States were to enter the war and the duties of corps volunteers as follows:

*Under the law you could never be called into service, except with your own consent; nor is it compulsory to have any military training. In case of war, if you should desire field service, military training that you had received before would be a very great advantage to you, but the large bulk of the Reserve Corps would not go into the field in case of war. Unless you desire field service you would be placed on duty, in case of war, at some general hospital where your duties would be purely professional. In the time of war we would have general hospitals located in most of our large cities. The great object of the Reserve Corps is to get a registered list of medical men who could be called upon for such duties, always with their own consent.*<sup>12</sup>

Bayne-Jones needed little encouragement. He enlisted almost immediately and was commissioned as a first lieutenant in the U.S. Army MRC on August 18, 1915.<sup>13</sup>

<sup>6</sup> William Welch (1850–1934), physician, scientist, and administrator, served as dean of Johns Hopkins School of Medicine and was the first director of the School of Hygiene and Public Health as well as the Institute of the History of Medicine. Although never an AAI member, Welch served on the Advisory Board of *The Journal of Immunology* (1916–34). In 1896, Welch founded *The Journal of Experimental Medicine*. For more information on the relationship between Bayne-Jones and Welch, see Albert E. Cowdrey, *War and Healing: Stanhope Bayne-Jones and the Maturing of American Medicine* (Baton Rouge: Louisiana State University Press, 1992), especially chapters 2 and 3.

<sup>7</sup> Flexner, *Medical Education*, 12.

<sup>8</sup> Victor Vaughan (1851–1929), biochemist, hygienist, public health authority, medical educator, and dean of the University of Michigan Medical School (1891–1920), served on the Advisory Board of *The Journal of Immunology* (1916–1929).

<sup>9</sup> Simon Flexner (1863–1943), scientist and first director of the Rockefeller Institute for Medical Research (1901–1935), was an Active (1920–1936) and Honorary (1936–1943) member of AAI and served on the Advisory Board of *The Journal of Immunology* (1916–1935).

<sup>10</sup> Gorgas's mother was the great aunt of Bayne-Jones.

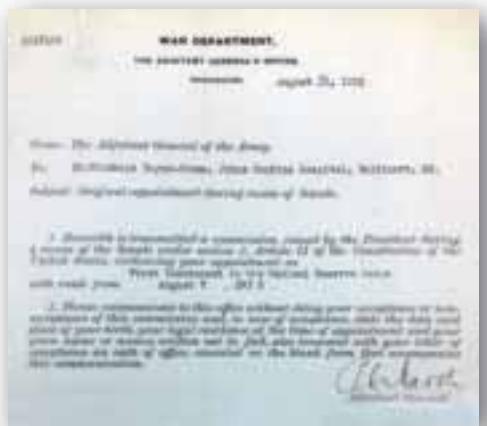
<sup>11</sup> William Gorgas to Stanhope Bayne-Jones (SBJ), June 17, 1915, Stanhope Bayne-Jones Papers, Box 7, Folder 16, “Medical Reserve Corps, 1915–1916,” National Library of Medicine, Bethesda, MD [hereafter “SBJP-NLM”].

<sup>12</sup> William Gorgas to SBJ, June 29, 1915, SBJP-NLM, Box 7, Folder 16, “Medical Reserve Corps, 1915–1916.”

<sup>13</sup> Memo from the Adjutant General of the Army to SBJ, August 18, 1915, SBJP-NLM, Box 7, Folder 16, “Medical Reserve Corps, 1915–1916.”

On April 6, 1917, the same day that the U.S. Congress issued its formal declaration of war, the AAI Council interrupted its proceedings to pass a resolution offering “the services of trained bacteriologists and immunologists and the facilities of their respective laboratories” to federal and state governments.<sup>14</sup>

Many members remained in their laboratories during the war, pursuing research for the war effort. The majority of this research, typified by the work of Anna Wessel Williams (AAI 1918) and William H. Park (AAI 1919, president, 1918–19), was focused on the influenza pandemic (see *AAI Newsletter*, March/April 2012). Convinced that scientists at the Rockefeller Institute could better support the war effort if they remained together than if they were dispersed, Simon Flexner arranged with Gorgas to keep the Rockefeller laboratories intact as one army unit.<sup>15</sup> Other AAI members serving in the MRC were sent to U.S. Army training camps or military hospitals and laboratories in Europe. Among the volunteers were Richard Weil (AAI 1914, president 1916–17), who served as chief of medical service at Camp Wheeler, Georgia, until November 1917, when he died of complications from pneumonia; Martin J. Synnott (AAI 1913, secretary 1913–18), who studied the pandemic influenza at Camp Dix, New Jersey;<sup>16</sup> Rufus Cole (AAI 1917, president 1920–21), who chaired the Pneumonia Commission in charge of researching outbreaks of the disease at Army training



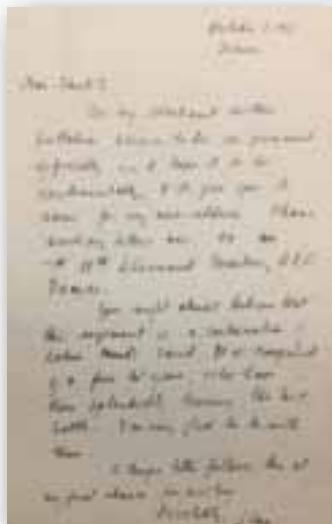
*Bayne-Jones MRC commission, ca. 1915*

National Library of Medicine, Stanhope Bayne-Jones Papers

camps;<sup>17</sup> and Hans Zinsser (AAI 1917, president 1919–20), a good friend of Bayne-Jones, who was stationed in France as an Army sanitary inspector and assistant director of the Division of Laboratories and Infectious Diseases.<sup>18</sup>

## Preparing for the front

The vast majority of American troops spent 1917 training in the United States and did not arrive in Europe until spring 1918. Bayne-Jones, however, was one of a relatively small number of American soldiers who volunteered to be integrated into the British Expeditionary Force (BEF) nearly one year before the American Expeditionary Forces arrived *en masse*. Assured that his position at Johns Hopkins would be waiting for him upon his return, Bayne-Jones set sail for London on the S.S. *Orduna* in May 1917 and joined the 69th Field



*Letter home, ca. 1917*

National Library of Medicine, Stanhope  
Bayne-Jones Papers

Ambulance of the BEF by the end of the month.<sup>19</sup> Shortly after arriving in France with the 69th Field Ambulance, he explained his decision to volunteer in a letter home to his sister Marian: "With these big things going on I could not stay still in Baltimore with the prospects of remaining repressed as a Teacher of Bacteriology or of being assigned to the prosaic medical duties of a Training Camp. No doubt both of these activities would be as useful and safer than what I can do over here; but this has the interest: It is like living in the Sunday pictorial of the New York Times."<sup>20</sup>

Stationed at a hospital behind the lines in May and early June, Bayne-Jones heard "wonder-tales" from the wounded British troops about an "earthquake battle," which made him long to get to the front lines. By the end of the month, he had received orders sending him to the Belgian front. After receiving mandatory training on the proper use of his gas mask, he boarded a train on June

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<sup>14</sup> "Minutes of the Fourth Annual Meeting—1917," April 6–7, 1917, AAI Archives.

<sup>15</sup> Barry, *The Great Influenza*, 140.

<sup>16</sup> Martin J. Synnott and Elbert Clark, "The Influenza Epidemic at Camp Dix, N.J.," *The Journal of the American Medical Association* 71, no. 22 (1918): 1816–21.

<sup>17</sup> Other members of the Pneumonia Commission included many future AAI members and presidents: Francis Blake (1921, president 1934–35), Thomas Rivers (1921, president 1933–34), and Eugene Opie (1923, president 1928–29). Pettit and Bailie, *A Cruel Wind*, 81–82; Barry, *The Great Influenza*, 164–65.

<sup>18</sup> Simeon Burt Wolbach, "Hans Zinsser, 1878-1940," *Biographical Memoirs* (Washington, DC: National Academy of Sciences, 1947), 327-28.

<sup>19</sup> W. MacCallum to SBL, May 1, 1917, SBIP-NLM, Box 7, Folder 12, "Johns Hopkins University 1915-1918"; Stanhope Bayne-Jones, "Curriculum,"

<sup>20</sup> SBI to Marian Jones, June 11, 1917, SBI-NU M. Box 7, "Correspondence."

<sup>20</sup> SB to Marian Jones, June 11, 1917, SBJP-NLM, Box 7, Correspondence.

20, 1917, to join his unit near Ypres. As the nearly 24-hour train ride to the front came to an end, he recorded his initial impressions of the war: "We not only hear the guns, but sometimes see the effects of their shells, which are still far enough away to be 'interesting.'"<sup>21</sup>

The work that Bayne-Jones did in the 69th was a far cry from the research he left in Baltimore. He served in many capacities as a part of the field ambulance, the most basic unit of medical care in the BEF. Every division had three field ambulance units, each with two companies of stretcher bearers and orderlies. When soldiers were injured, they were taken from the front by stretcher to an assembly point on the line in the rear, where they were triaged. If their wounds were serious enough, they were sent further behind the lines to a central station, then to a divisional collection point, and, finally, to an advanced dressing station. At each point, the wounded soldier was assessed, and if he was deemed to be in too poor a condition, he was treated on the spot rather than sent to the next station.<sup>22</sup>



American soldiers in the trenches, ca. 1918

National Library of Medicine, Stanhope Bayne-Jones Papers

### In the trenches

Bayne-Jones slowly worked his way to the front lines. Under mortar fire for the first time in early July, he reported that he was not as "scared as I thought I would be."<sup>23</sup> By month's end, however, the reality of the war began to set in after a night of shelling and gas attacks by the Germans.

*Nearly every night [the German army] sends thousands of shells of poison gas which complicate life very much. We have to sit up long hours with our heads in the gas helmets, sweating, half suffocated, dribbling, hardly able to see through the eye pieces that get so steaming it makes it hard to take care of the wounded, and the poor fools who lose their heads and get gassed because they forget to put on their helmets. . . . I believe I'd rather get bumped by a shell than spend nights down in one of those narrow saps, which have been inhabited by men and populated by vermin the last three years.<sup>24</sup>*

Despite his first taste of the horrors of war, Bayne-Jones was steadfast in his desire to remain in the field hospital. He found that the "work to be done here was as useful as any that I could accomplish by sticking at the Base. . . . [I]t certainly is more rewarding to take care of the men when they are in the most trouble. Even without that, the sights and thrilling parts we sometimes share make the seats on the stage worth the price of the risk."<sup>25</sup>

Reflecting on his initial encounter with trench warfare, Bayne-Jones wrote that it was "my first dash of real life." He confessed, however, that the "medical experience is nil." "I've seen a lot of ghastly wounds and blood of course," he explained, "but we handle cases only to get them back to the hospital, and hence cannot follow them for study. Besides I seem to have lost interest in medicine and bugs—temporarily." He still intended to "settle down as a 'professor' somewhere" after the war.<sup>26</sup> But, as he admitted three months later in a letter home, he was forgetting "everything I ever knew of Bacteriology and medicine." Yet he had no regrets: "I'll be pretty ignorant of what I was trained to follow when this war is over, but I have seen some things! And shared the mud and cold with men 'out there'—and that will give me much consolation until I learn the other once more."<sup>27</sup>



Bayne-Jones (front row, center) on the front, ca. 1918

National Library of Medicine, Stanhope Bayne-Jones Papers

<sup>21</sup> SBJ to Edith Bayne Denegre ("Tante E."), June 23, 1917, SBJP-NLM, Box 7, "Correspondence."

<sup>22</sup> Cowdrey, *War and Healing*, 55.

<sup>23</sup> SBJ to Tante E., July 4, 1917, SBJP-NLM, Box 7, "Correspondence."

<sup>24</sup> SBJ to Marian Jones, July 21, 1917, SBJP-NLM, Box 7, "Correspondence."

<sup>25</sup> SBJ to Tante E., August 5, 1917, SBJP-NLM, Box 7, "Correspondence."

<sup>26</sup> SBJ to Marian Jones, August 12, 1917, SBJP-NLM, Box 7, "Correspondence."

<sup>27</sup> SBJ to Tante E., October 27, 1917, SBJP-NLM, Box 7, "Correspondence."

Life on the front, with its “quick mud and chilly rain, and the immeasurable suffering,” as well as constant shelling, became almost a regular routine for Bayne-Jones in late 1917 and early 1918.<sup>28</sup> Early in the new year, a holiday care package from home finally arrived. The welcomed contents included “shaving soap, fine glycerin soap, some poison soap for the ‘totos’ as the poilus<sup>29</sup> call lice, cold cream, Vaseline, and a big lot of Hershey’s Chocolate.”<sup>30</sup> Lice and threadbare uniforms had been recurring themes of his stories home.

### The Americans arrive

When the American Expeditionary Forces arrived in Europe in spring 1918, Bayne-Jones knew that he would soon be reassigned to an American unit, and he acknowledged that there were times he wished he “were back with the interests of the Laboratory.”<sup>31</sup> In March, he was relieved from duty with the English battalion and ordered to report to a U.S. Army research laboratory in Paris, far removed from the “show” at the front.<sup>32</sup> Although he “couldn’t have asked for better opportunities than were offered” at the laboratory, Bayne-Jones “felt that I couldn’t stick at a desk back there, while there was a war going on up front.”<sup>33</sup> A position as a battalion doctor was “by far and away the best for me as a human being, even if I am forgetting all the technical training I ever had, and which I believe is the best my efforts can do for the men over here.”<sup>34</sup> His request for a transfer from the laboratory was granted, and he soon returned to the front in eastern France as the battalion surgeon to the 26th Division, 3rd Battalion, 101st Infantry.<sup>35</sup>

As many of the newly won trenches on the French front were similar to his first experience with the British—knee deep in mud and infested with rats and lice—Bayne-Jones taught elementary sanitation to the new troops.



German trench, ca. 1918

National Library of Medicine, Stanhope Bayne-Jones Papers

His role as battalion surgeon extended beyond the men under his watch to a “‘civilian’ practice in some poor villages” that his battalion had liberated from the Germans. It was a role that gave Bayne-Jones some comfort and relief, as “most of my patients were kids five or seven years old, with various troubles. All of them look like the lovely pictures in those old French song books we used to have and are appealing bright little people. It is very pleasant to be able to do anything for them.”<sup>36</sup>

The 101st saw constant action throughout the majority of the spring of 1918, and a certain mix of weariness and wonderment had replaced Bayne-Jones’s initial excitement in his letters home.

*My luck has been with me this time—I have just gotten out of places before shelling began, or come into a sector just after the shelling has ended. Last night, however, a German aeroplane stopped over us in the twilight and gave us quite a scare with his machine gun. When you realize that the bullets are going beyond you, the exhibition seems lovely. The bullets sound like picking the three top strings of a harp, and the tracer-bullets on fire look like fireflies in the evening.*<sup>37</sup>

A newfound concern for his own mortality also began to appear in his letters. “You never know when the noise and iron are going to drive your spirits out to the quiet fields above the balloons and aeroplanes,” he wrote in May.<sup>38</sup> Bayne-Jones admitted that the shells were getting on “my nerve now as they never did before”—the war was simply “going on too long.”<sup>39</sup>

His letters also revealed a mounting homesickness. He described a “quiet moment” after going “over the top” on a successful raid, during which he “howled for the unattainable like a dog howling for the moon.”<sup>40</sup>

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<sup>28</sup> SBJ to Alma Denegre, October 18, 1917, SBJP-NLM, Box 7, “Correspondence.”

<sup>29</sup> Poilus was a warm, informal term for a French infantryman during the First World War, meaning, literally, hairy one.

<sup>30</sup> SBJ to Tante E., January 7, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>31</sup> SBJ to Tante E., December 12, 1917, SBJP-NLM, Box 7, “Correspondence.”

<sup>32</sup> SBJ to George Denegre, December 23, 1917, SBJP-NLM, Box 7, “Correspondence.”

<sup>33</sup> SBJ to Tante E., April 5, 1918, SBJP-NLM, Box 7, “Correspondence” [emphasis in original].

<sup>34</sup> SBJ to George Denegre, June 20, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>35</sup> For additional information on the U.S. Army ambulance service in the First World War, see Cowdry, *War and Healing*, 62–63; Richard V. N. Ginn, *The History of the U.S. Army Medical Service Corps* (Washington, DC: Office of the Surgeon General and Center of Military History, United States Army, 1997), 37–51; Stanhope Bayne-Jones “The Duties of a Battalion and Regimental Surgeon,” November 25, 1918, SBJP-NLM, Box 9, Folder 11, “26th Yankee Division AEF—Armistice and After.”

<sup>36</sup> SBJ to Tante E., July 2, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>37</sup> SBJ to Tante E., May 15, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>38</sup> SBJ to Tante E., May 30, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>39</sup> SBJ to George Denegre, June 20, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>40</sup> SBJ to Marian Jones, June 2, 1918, SBJP-NLM, Box 7, “Correspondence.”

## Pandemic influenza

In July, Bayne-Jones was promoted to regimental surgeon of the 103rd Infantry and given his first leave from the front after many months of tough fighting. He spent the majority of his time in Paris, where he contracted the pandemic influenza that was infecting and killing millions around the world. He described his bout with the “grippe” as taking “away interest in life” and explained that “the days have been so monotonous that I hardly noticed how many passed.”<sup>41</sup> Aware that “influenza and pneumonia [have] hit some places” in America “pretty hard,” he worried about family at home “catching the ‘flu.’”<sup>42</sup> His illness and convalescence kept Bayne-Jones from the front lines until September 1918.

## Armistice and after

His return to the front coincided with the 47-day Meuse-Argonne Offensive,<sup>43</sup> part of the final offensive of the Allied forces. The conditions where the 103rd was located were “wet and cold,” and the men “slept in an oozing hole in the hillside.”<sup>44</sup> Beyond the physical effects of the war, Bayne-Jones was noticing mental changes in himself and his men.



Flu ward, ca. 1918

Library of Congress, Prints & Photographs Division

<sup>41</sup> SBJ to George Denegre, September 2, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>42</sup> SBJ to Tante E., November 26, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>43</sup> Also called the Battle of the Argonne Forest.

<sup>44</sup> SBJ to Susan Jones, September 27, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>45</sup> SBJ to Susan Jones, September 27, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>46</sup> SBJ to Marian Jones, November 11, 1918, SBJP-NLM, Box 7, “Correspondence.”

<sup>47</sup> SBJ to Marian Jones, January 16, 1919, SBJP-NLM, Box 7, “Correspondence.”

<sup>48</sup> Cowdrey, *War and Healing*, 69–71; Bayne-Jones, “Curriculum Vitae,” AAI-UMBC, Box 8, Folder 11, “Bayne-Jones, Stanhope.”

*While the shells shriek overhead and burst with a deafening roar, throwing up clods of earth and chunks of the flotsam and jetsam of the battlefields, while the sizzling shrapnel rattles on the tin hats of the stalwart Yanks, crowding the muddy shell holes, while the machine gun bullets chirp overhead and spurt against the elephant iron, while all these horrors are taking place I am neither deafened nor afraid because I am in a hole 30 feet underground in a [German] dug-out. Isn't it a joke what the newspapers write up about battles!*

Capt. Stanhope Bayne-Jones  
November 5, 1918  
France

“Like most unpleasant things, the war is in danger of being forgotten by us here at any moment—‘submerged into the unconscious processes,’ as the psychologists say.”<sup>45</sup>

During the offensive, Kaiser Wilhelm II began making overtures that Germany would accept a peace treaty. And, at the stroke of 11:00 in the morning on November 11, 1918, “suddenly all the guns behind us stopped barking and rolling, the last ‘Freight car’ rattled over our heads, and all the machine guns suddenly stopped, though they had been rioting away up to the very last minute.” The quiet was “mysterious, queer, unbelievable,” but no one “shouted or threw his hat in the air.” Although the war was over, the soldiers of neither side found the armistice “exciting” at first. As the day turned into night, however, the front began to look to Bayne-Jones like “a Fourth of July celebration,” as unused flares and signal rockets from both armies illuminated the sky with their many colors well into the night.<sup>46</sup>

On November 14, Bayne-Jones was promoted to the rank of major and became the sanitation inspector in Koblenz, Germany, as part of the army of occupation. Longing for home, he quickly turned to the same connections that got him to the front in the summer of 1917.<sup>47</sup> William Gorgas and William Welch were successful in their lobbying efforts, and Bayne-Jones was back on American soil on May 28, 1919. Two days later, he was honorably discharged from the U.S. Army.<sup>48</sup>

## Returning to the laboratory

Bayne-Jones soon returned to his academic position at Johns Hopkins to resume his research, but he found the transition back to life in the laboratory difficult. “Everybody here is either played out from having had to

work shorthanded in the school during the war or restless because they were in Europe during the war. Even the men who were in the Hopkins unit in France and have been back here since February are not yet settled into their work—or their feelings.”<sup>49</sup>



Hans Zinsser

National Library of Medicine, History of Medicine Division

Hans Zinsser, who had served as a medical officer in France during the war, echoed his good friend's sentiments about returning to the laboratory. In an early July 1919 letter to Bayne-Jones, he wrote, “It was difficult for me to readjust and the enthusiasm for the old problems is only now returning.”<sup>50</sup>

Although the transition to civilian life may have been initially difficult for many immunologists, a number of them began making significant advancements

in clinical and basic research. The leadership skills that this generation of investigators had acquired during wartime service appear to have served them well in their rise through the ranks of academia and scientific and medical organizations, including AAI. Not only did Bayne-Jones and Zinsser become AAI presidents, so too did other veterans: Francis Blake (1921, president 1934–35), Thomas Rivers (1921, president 1933–34), and Eugene Opie (1923, president 1928–29).

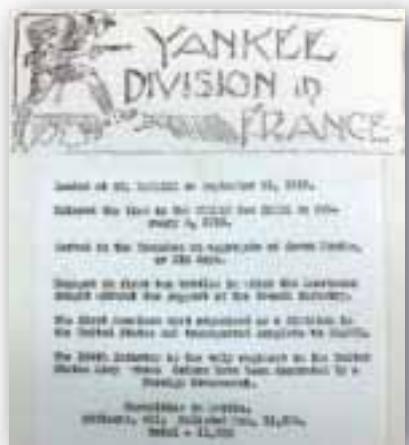
For researchers in Europe, the war's impact on their home institutions was more immediate and often longer lasting. Nobel laureate Jules Bordet (AAI 1960) was unable to continue his experimental research in occupied Belgium, although he did use the war years to write a classic book on immunity and infectious disease, *Traité de l'Immunité dans les Maladies Infectieuses*.<sup>51</sup> Karl Landsteiner (AAI 1922, president 1927–28), then the chief pathologist at the Wilhelmina Hospital in Vienna, felt the war's effects long after its conclusion. The shortage of resources in post-war Vienna forced him to leave his homeland for the Netherlands before permanently relocating to New York and joining the Rockefeller Institute in 1923.<sup>52</sup>

Nevertheless, some of the war's dislocations helped advance scientific research. Almroth Wright and Alexander Fleming of St. Mary's Hospital, London, spent the war years serving in the Royal Army Medical Corps in a makeshift laboratory in France. It was Fleming's first-hand

observations of the harmful effects of antiseptics on wounded soldiers that started him on the search for a non-toxic antibacterial substance that ended with his discovery of penicillin.<sup>53</sup>

Although many immunologists, like Stanhope Bayne-Jones, survived the war and thrived in the decades that followed, there is no telling how many

current and future immunologists were among the 9–10 million soldiers who died during the Great War or were included in the approximately 675,000 Americans, or the conservatively estimated 20 million worldwide, who fell victim to the pandemic influenza that the movement of troops helped create.<sup>54</sup>



*Yankee Division in France, ca. 1919*

National Library of Medicine, Stanhope Bayne-Jones Papers



*The Johns Hopkins Pathology Department Staff, ca. 1921.  
(Bayne-Jones, front row, second from left)*

National Library of Medicine, Stanhope Bayne-Jones Papers

<sup>49</sup> SBJ to Marian Jones, August 2, 1919, SBJP-NLM, Box 11, Folder 6, “Johns Hopkins University Correspondence I, 1919–1923.”

<sup>50</sup> Hans Zinsser to SBJ, July 8, 1919, SBJP-NLM, Box 11, Folder 5, “Johns Hopkins University Correspondence I, 1919–1923.”

<sup>51</sup> Jules Bordet, *Traité de l'Immunité dans les Maladies Infectieuses* [Treatise on Immunity in Infectious Diseases] (Paris: Masson et cie, 1920).

<sup>52</sup> Michael Heidelberger, “Karl Landsteiner, 1868–1943.” *Biographical Memoirs* (Washington, DC, National Academy of Sciences, 1969), 180.

<sup>53</sup> Leonard Colebrook, “Alexander Fleming, 1881–1955,” *Biographical Memoirs of Fellows of the Royal Society* 2 (November 1956): 117–27.

<sup>54</sup> Barry, *The Great Influenza*, 396–97.