

## Biographical Sketch

William S. Baer (1872–1931)

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Published online: 8 June 2010  
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**Abstract** This biographical sketch on William S. Baer corresponds to the historic text, *The Classic: The Treatment of Chronic Osteomyelitis With the Maggot (Larva of the Blow Fly)*, available at DOI [10.1007/s11999-010-1416-3](https://doi.org/10.1007/s11999-010-1416-3).

William Stevenson Baer (1872–1931) is best remembered as an innovator in hip and spine surgery, an imaginative experimenter in the treatment of infection and arthritis, and as the founding chairman of orthopaedics at Johns Hopkins University who trained some of the outstanding practitioners of the 20th century.

Baer was born in Baltimore and earned a bachelor's degree from Johns Hopkins University in 1894. He completed his medical education in 1898 and served his internship under Harvey Cushing (1869–1939). In 1900, Cushing recommended to William Stewart Halsted (1852–1922) that Baer be assigned to create an orthopaedic service at Hopkins. Baer visited colleagues at Boston Children's Hospital and Massachusetts General Hospital to study their programs and returned to Baltimore three months later to set up the department he would lead for the rest of his life [8]. During these three decades, Baer directed the orthopaedic education of a number of standouts in the field [8]: William Nachlas (1894–1958), who developed a shelf operation for dislocated hips [15]; Harold Bohlman (1893–1979), a coinventor of the Vitallium hip prosthesis [6]; Ralph K. Ghormley (1893–1959), chief of orthopaedics and the Mayo Clinic in Rochester, Minn.

[12]; and Guy W. Leadbetter (1893–1945), who developed a reduction test for hip fractures and an osteotomy for nonunions of the femoral neck [5]. He also trained two Hopkins clinicians who in turn shaped the careers of a number of orthopaedic surgeons: George E. Bennett (1885–1962) and Raymond E. Lenhard (1898–1978). Baer said his greatest contribution to Johns Hopkins was “having something to do with the training of George Bennett” [13].

He built a highly successful practice at Baltimore's 4 East Madison Street along with the chief of radiology, Frederick Baetjer (1874–1933) [7]. His students remembered him as a formidable teacher. Lenhard wrote that the demonstrative Baer was “a big man in every way,” noting:

“Frequently he came to the amphitheater from the operating room in operating clothes that were loose, baggy and perhaps stained. He would give a graphic description and a demonstration of disease. He would limp up and down in front of the class, mimicking the limp of a congenital dislocation of a hip or both hips, the limp of a child with early tuberculosis of a hip, or the limp of a late stage of tuberculosis. He was a large man, overweight and puffing, with or without a cigar which he held in his mouth until he reached the operating table, when he would permit a nurse to remove it. ... No one slept during Dr. Baer's lectures” [7].

He became a leader in national and international professional organizations, including serving as president of the American Orthopaedic Association in 1924 [11], and in providing health services to his region. In the 1920s, he worked with officials in the Office of Public Health to organize state clinics in Baltimore and other Maryland counties, and regularly visited the clinics themselves to see

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**Fig. 1** William S. Baer is shown in 1921. Photo by Doris Ulmann.

patients at no charge. “Dr. Baer taught us to think of the patient first,” Lenhard recalled, “never to consider a patient as a possibility for a fee” [7].

Baer’s research interests ranged widely, but his few publications mostly concern hip arthroplasty and spinal problems. Most of what he described in these areas was supplanted by subsequent developments. For example, his use of the membrane of pig’s bladder in the temporomandibular and hip joints in the 1910s and 1920s was published some years before Marius Smith-Petersen (1886–1953) developed cup arthroplasty [1]. He also advocated manipulation of the sacroiliac for low back pain and used this procedure in thousands of cases [8]. Less successfully, he attempted to treat arthritis with a vaccine developed from lymph node cultures [7].

One area of research pursued by Baer over the last decade of his career came to him more or less serendipitously. In 1917, during the Great War, Baer served as a consulting physician with the American Expeditionary Force in France. Baer treated two soldiers who had endured their injuries on the battlefield for a week before being brought to a military hospital. He noted the lack of any systematic infection, fever, or purulence and that the wounds displayed the “most beautiful pink granulation tissue that one can imagine” [2]. In addition, the wounds were swarmed with maggots. Baer did not discover maggot therapy; there is evidence for the treatment in antiquity and in the careers of Ambroise Paré (1509–1590) and Dominique Jean Larrey (1766–1842), as well as among surgeons in the Confederate army during the U.S. Civil

War [14]. What Baer did was aggressively experiment with maggots on patients with osteomyelitis, growing larvae on a hospital windowsill [7]. His initial results among patients at Baltimore’s Children’s Hospital were encouraging, as formerly persistent infections cleared within six weeks. However, two patients developed tetanus and died, leading him to realize that he needed to create “sterilized” maggots that would not spread new infection while devouring devitalized tissue [2, 8]. He developed a method for growing maggots in a sterile environment, which worked, but added greatly to the expense of the procedure [14]. The 1930s saw a brief boomlet in the use of maggot therapy, despite the expense and obvious discomfort to patients, but the introduction of sulfa drugs and then modern antibiotics led to its disuse for decades [10]. More recently, maggot therapy has been used in débridement of nonacute external wounds that have failed to respond to conventional treatment [14]. In 2005, the U.S. Food and Drug Administration approved maggots as a medical device.

His colleagues and students remembered Baer as “jolly, kindly, and appreciative” [7], and with quirks beyond taking a lit cigar into an operating room. Lenhard wrote that Baer was instinctively reluctant to agree with a subordinate’s suggested approach to a problem, but approval could be gained easily by asking him if he wanted to take the opposite route. “He would usually say ‘No’ to such suggestions and then outline a procedure that was exactly what we intended.” Also, Lenhard recalled, when an operation did not go well, Baer would begin to sing, softly, “Nearer My God to Thee” [7]. He was devoted to dogs, especially the dozens of Chows he raised, so much so that he took the unusual step of operating on their congenitally defective eyelids in the OR at Children’s Hospital. Most of all, he loved his younger patients and would let other duties lapse as he played checkers or cards at Children’s Hospital, often laughing uproariously after losing to a wheelchair-bound youngster, or delivering presents on Christmas while portraying Santa Claus [7].

The man who took such great care of children took poor care of himself. Famously overweight, short of breath, and a smoker, Baer disregarded his own physician’s warnings of high blood pressure and kidney disease [13]. The 58-year-old died of a stroke in 1931 at Union Hospital and was buried at Druid Ridge Cemetery [7]. He was not forgotten. In 1942, his name was placed on one of 2700 “Liberty Ships,” which were cargo steamers built rapidly and cheaply to supply the U.S. effort in World War II. (The USS William S. Baer went into private hands after the war and was scrapped in 1970) [3, 4, 9]. A more lasting tribute is Baltimore’s William S. Baer School, founded in 1939 to serve children with polio or tuberculosis, and today a public facility focusing on the education of children who have suffered head or spine trauma or who have congenital

abnormalities [16]. This, more than his research, seems a fitting way to remember a man who dedicated so much of his relatively short life to education and to healing children.

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