

Biographical Sketch

Royal Whitman, 1857–1946

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Published online: 23 October 2009

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Abstract This biographical sketch of Royal Whitman corresponds to the historic text, *The Classic: A Study of the Weak Foot, with Reference to its Causes, its Diagnosis, and its Cure; with an Analysis of a Thousand Cases of So-Called Flat-Foot*, available at DOI [10.1007/s11999-009-1130-1](https://doi.org/10.1007/s11999-009-1130-1).

Royal Whitman, M.D. was born Oct. 24, 1857, in Portland, Maine. He earned his medical degree from Harvard University in 1882, completed a surgical internship at Boston City Hospital, and further training in anatomy at Cook's School in London. He practiced in Boston until 1889, when Virgil P. Gibney, M.D. (1847–1927), recruited him to New York's Hospital for the Ruptured and Crippled (hereafter HRC; now the Hospital for Special Surgery). During his four decades at that institution, Whitman established himself as one of the towering figures in the development of orthopaedic surgery.

Gibney had returned to the HRC in 1887, after the death of its autocratic founder and surgeon-in-chief, James Knight, M.D. (1810–1887). Knight was strongly opposed to surgery and under his leadership the HRC had no operating room. Knight had fired his assistant in 1884 after Gibney advocated surgical treatment in advanced cases of tuberculosis of the hip [1]. With the change in leadership and direction, Whitman, who joined the faculty of the College of Physicians and Surgeons at Columbia

University, became the most prominent member of what arguably was the most important orthopaedic department in the nation. He arrived at a time of great change in orthopaedic surgery and medical training and made huge contributions to both.

Whitman was an avid experimenter and critical of his conservative colleagues. He referred to Newton M. Shaffer, M.D. (1846–1928), a prominent New York orthopaedist and the first professor of orthopaedic surgery at Cornell University [1], as “an orthodox mechanic, permitting no operative treatment at the hospital that he controlled, because it would prevent the normal development of what he called ‘mechanico-therapy’” [11]. At the first meeting of the American Orthopaedic Association in 1887, Whitman recalled, “only a small contingent could qualify as orthopaedic surgeons” [11]. In contrast to his conservative colleagues, a former student recalled, Whitman “was always trying out new procedures—either those he initiated or those suggested by others. He had an insatiable curiosity about the pathogenesis of orthopaedic diseases and deformities, and an imagination which led him continuously to seek new methods of manipulative or surgical correction of musculoskeletal defects” [6]. His colleagues noted Whitman's knowledge of anatomy, surgical technique, and developments in foreign journals, and they marveled at his dexterity and thoroughness in the operating room. He shared the results of his efforts in one of the most important textbooks in the history of orthopaedics, *A Treatise on Orthopaedic Surgery* [10]. The comprehensive guide, with 22 chapters on the spine, hip, knee, upper and lower extremities, nervous system, and tuberculous diseases, was first published in 1901 and revised nine times through 1930 [1]. Whitman's prose is direct and clear, painstakingly descriptive but without wasted words and remains today an excellent example of medical writing.

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Reading the textbook, one gets a sense of Whitman's personality that is confirmed by his former residents. Whitman's time at the HRC coincided with the development of much of the modern residency program. Gibney had established the first "house staff" at HRC in 1887, when he moved the surgeon-in-chief's quarters out of the hospital and instead had his young doctors in training become the "residents" [2]. As head of the Outpatient Department, Whitman ensured that his charges were on time for afternoon clinic and up to speed on the cases and literature, or they would risk his displeasure. "So prompt was his arrival that watches could be set at one o'clock when he entered the Hospital. His method of teaching was not always a placid procedure," one wrote. "He often used the difficult, and not always agreeable, method of sarcastic criticism. This, at times, was vexing," although his students "recognized the light in his eyes and the smile on his lips and knew there was no malice in the sarcasm" [6]. Whitman apparently did not discriminate between the house staff and visiting physicians, his impatience extending to any physician who failed to share his zeal for advancing orthopaedic surgery [1]. "During a lull in clinic work in the afternoons, the subject discussed was never art, literature, music, or politics but always orthopaedic surgery—a difficult case for diagnosis, surgical technique, mechanical or surgical principles, or orthopaedic literature. Dr. Whitman read extensively and was thoroughly informed on the orthopaedic literature in English, French, and German; he expected all of his associates to be equally well informed and up to date" [6].

Three of Whitman's many contributions to orthopaedic surgery stand out. The first is his groundbreaking work in hip surgery. In the late 19th century, Nicolas Senn (1844–1908) and others had presented evidence that open reduction and internal fixation could promote healing of intracapsular fractures of the hip [5]. Their views were vigorously opposed by most surgeons. By the turn of the century Whitman had demonstrated that reduction and immobilization with a hip spica led to healing in a substantial number of patients with intracapsular fracture. Others adopted and improved on his technique [13]. Also, in 1924, he published a case series demonstrating reconstruction of arthritic hip joints, an important link in the development of modern hip surgery [12]. The second contribution is the development of astragalectomy, the surgical removal of the talus bone for stabilization of the ankle [9]. The third contribution is his study of the cause, diagnosis, and cure of flatfoot, the topic of his classic article of 1896. During this era, many physicians believed that flat feet were inherited genetically and needed to be treated surgically or with braces. With his characteristically meticulous attention to detail, Whitman demonstrated that the term "flat foot" was misleading in the sense that it directed attention toward

"a minor element of weakness and a secondary element of the deformity; for the symptoms of flat-foot do not result because the foot is flat, but because it is becoming flat; they are the symptoms of strain up on the weak foot and of the injuries and changes accompanying a progressive dislocation" [8]. In the same work, he showed how flatfoot could be treated and effectively cured with proper bracing and casting, well-designed shoes, physical therapy, and in some cases, surgery. Whitman's research had broader effects than he might have imagined; for years he had argued against "the custom of cramping the toes in tight shoes and perching the foot on an insecure heel" [7, 8]. Major Edward L. Munson, a military surgeon, took Whitman's findings to heart, publishing his own study of 2,000 soldiers and concluding that at least half of the troops wore shoes that were too small [4]. Munson's book, *The Soldier's Foot and the Military Shoe*, incorporated Whitman's illustrations of flat feet and was issued to every U.S. medical officer in World War I. This work led to the standardization of U.S. Army boots and the development of a standardized military foot examination [3].

Whitman left the HRC in 1929 and moved to London, where he continued to practice and lecture. He served as consulting surgeon for the American Hospital in London and was appointed an honorary fellow of the Royal College of Surgeons and of the Royal Society of Medicine. After his wife's death in 1943, he returned to New York, where he remained active in medical organizations until his death in 1946. His career illustrates the value of careful analysis, observation, and execution, and the power of confidence. Whitman wrote in 1941:

"I was obliged to depend on my own observations and deductions. ...I had an unusual opportunity for self-education, for I worked for forty years in a hospital where the patients were not restricted by artificial conventions, combining in a continuous service both the outpatient and inpatient departments. From this experience I came to the conclusion that the one who had analyzed the disability and planned the reconstructive procedure, who had carried it out according to specifications, and who by constant oversight had detected and supplemented its weak points was most competent to judge of its relative utility. These conclusions were so often at variance with is called the consensus, that for the great part of my active life I have been a member of the opposition" [11].

References

1. Levine DB. Gibney as surgeon-in-chief: the earlier years, 1887–1900. *HSS J.* 2006;2:95–101.

2. Levine DB. The Hospital for the Ruptured and Crippled, entering the twentieth century, ca. 1900 to 1912. *HSS J.* 2007;3:2–12.
3. Linker B. Feet for fighting: locating disability and social medicine in First World War America. *Soc Hist Med.* 2007;20:91–109.
4. Munson EL. *The Soldier's Foot and the Military Shoe*. Menasha, WI: George Banta Publishing Co; 1917.
5. Peltier LF. A history of hip surgery. In: Callaghan JJ, Rosenberg AG, Rubash HE, eds. *The Adult Hip*. Vol 1. New York, NY: Lippincott Williams & Wilkins; 2006:3–32.
6. Royal Whitman, 1857–1946. *J Bone Joint Surg Am.* 1946;28:890–892.
7. Whitman R, III. Whitman on radical cure of confirmed flatfoot. *Ann Surg.* 1892;15:462–466.
8. Whitman R. A study of the weak foot, with reference to its causes, its diagnosis, and its cure; with an analysis of a thousand cases of so-called flat-foot. *J Bone Joint Surg Am.* 1896;s1-8:42–77.
9. Whitman R. IX. Further observations on the treatment of paralytic talipes calcaneus by astragalectomy and backward displacement of the foot. *Ann Surg.* 1908;47:264–273.
10. Whitman R. *A Treatise on Orthopaedic Surgery*. 6th ed. Philadelphia, PA: Lea & Febiger; 1919.
11. Whitman R. Reminiscences: introductory remarks at the Annual Meeting of the Orthopaedic Section of the Royal Society of Medicine. *J Bone Joint Surg Am.* 1941;23:953–954.
12. Whitman R. The reconstruction operation for arthritis deformans of the hip joint. 1924. *Clin Orthop Relat Res.* 2006;453:14–16.
13. Zuckerman JD. The internal fixation of intracapsular hip fractures: a review of the first one hundred years. *Ortho Rev.* 1982;11:85–95.