Thomas H. Weller, 1915–2008: A Remembrance

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Thomas Huckle Weller, Nobel Laureate (1954), member of the Infectious Diseases Society of America, and Bristol Awardee (1980), died on 23 August 2008 at the age of 93. In writing this note for *Clinical Infectious Diseases,* we wanted him to be remembered by members of the infectious diseases community, from our perspective as former fellows, not only for his extraordinary scientific achievements, but also for his influence on his many students and colleagues.

Tom Weller began his residency in pediatrics at the Children's Hospital in Boston in 1941. His training was interrupted by 3 years in the army, after which he returned to Children's Hospital to complete his residency. His interest was focused on investigative medicine, and in 1947, he and John Enders began the Research Division of Infectious Diseases at Children's Hospital. A year later, Fred Robbins, a Harvard Medical School classmate, joined him in the laboratory. The story of the development of tissue cultures, roller tubes, and the growth of poliovirus in cultures of human and monkey cells is related in his autobiography *Growing Pathogens in Tissue Cultures: Fifty Years in Academic Tropical Medicine, Pediatrics and Virology* [1]. The tissue culture techniques led directly to the development of the poliovirus vaccines. On 21 November 1954, Weller received a telegram stating "The Caroline Institute has decided to award this years Nobel Prize in Physiology and Medicine to JF Enders, FC Robbins and you jointly for your discovery of the ability of the poliomyelitis virus to grow in cultures of different tissues" [1, p. 92]. One can only imagine the excitement of the festivities in Stockholm (figure 1). Weller wrote

Figure 1. Tom Weller *(left),* Fred Robbins *(middle),* and John Enders *(right)* at the Nobel Ceremony in Stockholm, Sweden, December 1954. Picture used with permission from Harvard Medical Library in the Francis A. Countway Library of Medicine.

"we all were characters in a script, swept along on a voyage more fantastic than we ever had imagined" [1, p. 99].

For some Nobel Laureates, the award is the pinnacle of his/her scientific career, but for Tom Weller, it was a beginning. He was now the head of the Department of Tropical Public Health at Harvard. Over the next years, in addition to stimulating interest in tropical medicine in academic centers throughout the world, he was successful in isolation and identification of 3 viruses: varicella-zoster virus, rubella virus, and cytomegalovirus. His children played a key role in these discoveries. In November 1952, he inoculated roller tube cultures with vesicle fluid he collected from his son Peter (now a Professor of Medicine at Harvard Medical School). Within weeks, a cytopathic effect of giant cells with multiple nuclei was identifiable in focal lesions, and the varicella virus had been isolated. Similar cytopathic effects were identified in vesicle fluids of

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patients with shingles. Continuing the family tradition, Weller isolated the rubella virus from the urine of his son Robert, who had developed an unusually severe form of the illness. In 1955, Weller and colleagues inoculated roller tube cultures of human embryonic skin-muscle with ground portions of the liver biopsy of a baby who had clinical manifestations consistent with congenital toxoplasmosis. After 12 days, microscopic examination of the inoculated cultures identified focal areas of enlarged cells with intranuclear inclusion bodies. The Weller group had identified a new group of viruses that he named cytomegaloviruses. One of us (J.B.H.) went on to define the congenital cytomegalovirus syndrome and its morbidity and sequelae.

What an extraordinary career: development of the tissue culture technique that transformed virologic research; identification of varicella-zoster virus, rubella virus, and cytomegalovirus; and an influential role in the growth of interest in tropical medicine in the United States. Of equal importance was his nurturing of students and fellows throughout the world in the disciplines of public health and investigative medicine. As measured by the enormous impact of his contributions to humanity, Tom Weller was certainly one of the towering figures in medicine of the 20th century. As former fellows, we were honored to have known him as mentor and friend, and we extend to the Weller family a shared sense of loss in his passing.

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Reference

1. Weller TH. Growing pathogens in tissue cultures: fifty years in academic tropical medicine, pediatrics and virology. Canton, MA: Science History Publications/USA, **2004**.