WILLIAM C. CAMPBELL, Ph.D. WINS 2015 NOBEL PRIZE

The MHSNJ is pleased and proud to announce that one of our own, past-president Dr. William Campbell, has won the 2015 Nobel Prize in Physiology or Medicine. A world-renowned parasitologist, Dr. Campbell led the Merck Research team that developed ivermectin, a novel antiparasitic drug used to treat human onchocerciasis, or River Blindness, a leading cause of blindness worldwide.

Ivermectin was originally developed for veterinary medicine. However, in December 1978 Dr. Campbell proposed to senior management that the drug, which he had already shown to be effective against *Onchocerca* infections in horses, might also be effective in the pathogenesis of human onchocerciasis, a disease caused by a related species of roundworm. As a result, the research turned in a new direction, and the rest is history.

The causative agent of River Blindness, the roundworm *Onchocerca volvulus*, is transmitted solely by the bites of bloodsucking black flies that breed in riverbeds. The adult worm produces millions of larvae that travel in the bloodstream and invade the eye where they cause irreversible blindness. A single dose of ivermectin paralyzes the larvae, allowing the host's macrophages to destroy them before they can damage the eye.

For the past three decades Merck has donated ivermectin to developing countries in which the disease is endemic. Merck's partner in this venture, the World Health Organization, handles drug distribution. Ivermectin is so effective that River Blindness is on the verge of being completely eradicated. Thus, River Blindness will be only the third disease – and only the

second human disease – to be eradicated from the earth. Smallpox was eradicated in 1979 and rinderpest, or cattle plague, in 2011. Unlike River Blindness, smallpox and rinderpest are viral diseases.

Dr. Campbell is also an accomplished historian, having published numerous works on the history of parasitology. Especially important is his masterful account of the history of trichinosis in the *Bulletin of the History of Medicine* in 1979. Using primary sources previously unmined, Dr. Campbell clarified the priority issues surrounding the discovery of the causative agent of trichinosis that had long muddied the historical literature. On February 2, 1835 a first-year medical student at St. Bart's Hospital in London named James Paget, later famous for the bone disease that bears his name, discovered the roundworm *Trichinella spiralis* encysted in the muscles of an Italian man who had succumbed to tuberculosis. Although Paget wrote a fine description of his discovery – including his own drawings of *T. spiralis* -- he never submitted the manuscript for publication, opting instead to have Richard Owen, Professor of Comparative Anatomy at St. Bart's, publish the work, with the provision that Paget receive full credit for the discovery. Owen had the zoological expertise and professional clout necessary to assure early publication in a reputable journal. Unfortunately, Owen, everyone's *bête noire*, could taste the significance of Paget's observations, and claimed the glory for himself while relegating Paget's contributions to an ambiguously worded footnote.

In summing up his life's work it seems appropriate to paraphrase Winston Churchill's comments on Clement Attlee: Bill Campbell is a very modest man. Indeed, he has a lot to be modest about.