

Ronald Ross & Clara Maass: Two Unlikely Heroes in the History of Mosquito Control - Stan Cope

A. Ronald Ross

1. What most people know
 - a) Discoverer of the mosquito transmission of malaria
 - b) 1857-1932
 - c) Nobel Laureate
2. His life
 - a) Born in India
 - b) Oldest of 10 children
 - c) Father was a Brigadier General
 - d) Sent back to England for school at age 8
 - (1) Proficient in math
 - (2) Interested in natural history
 - e) Enrolled in medical school at age 17 due to parental pressure
 - (1) 1879 - failed to qualify
 - (2) 1880 - ship's surgeon
 - (3) Joined the Indian Medical Service
 - f) Returned to England in 1888
 - (1) Married Rosa Bloxam in 1889
 - (a) 2 girls
 - (b) 2 boys
 - (2) Became interested in public health
 - (3) Took a course in Bacteriology
 - g) Returned to India in 1889
 - (1) Began to study mosquitoes
 - (2) Ignorant of the literature
 - (a) Criticized Laveran's findings
 - (b) Thought most of malaria cases were actually intestinal disturbance
 - (3) 1894 - met Patrick Manson
 - (a) Believed mosquitoes transmitted malaria
 - (b) Agreed with Laveran's observations
 - (c) Gave Ronald Ross a purpose
 - (4) Contributions
 - (a) Volunteers who drank water contaminated by mosquitoes did not get malaria
 - (b) Found malaria parasites in Anopheles (Mosquito Day - Aug 27, 1897)
 - (c) Started looking at avian malaria
 - i) Sparrows
 - ii) *Culex* spp
 - h) Left the India Medical Service and returned to England in 1899
 - (1) Nobel Prize nominations
 - (a) 1901
 - (b) 1902 - won
 - (2) Rift between Ross and the Italian investigators (Grassi)
 - (a) Two tasks remained
 - i) ID human vector
 - ii) Find malaria in this vector
 - (b) Published data - Ross was livid
 - (3) Became a lecturer
 - (4) Did consulting for Public Health

- (a) Malaria
 - (b) Tropical medicine director
- i) Died of illness in 1932
- j) Who was Ronald Ross
 - (1) A romantic
 - (2) Cantankerous and difficult
 - (3) A writer and poet (Oh death where is thy sting...)
 - (4) A mathematician
 - (5) A sanitarian
 - (6) An epidemiologist
 - (7) A researcher
- B. The importance of mosquitoes in disease transmission
 1. Carlos Finlay
 2. Patrick Manson
 3. Alphonse Laveran
 4. Theobald Smith
 5. David Bruce
 6. Ronald Ross
 7. Walter Reed (with Gorgas, Wood, and Guiteras)
- C. Clara Maass
 1. Dr Guiteras
 - a) Inoculate mosquitoes with a mild case of Yellow Fever
 - b) Have them feed on human volunteers
 - (1) Yellow fever does not work like this
 - (2) 3 of 8 volunteers died, including Clara Maass
 2. Who was Clara Maass
 - a) Born 1876
 - b) Became a nurse
 - (1) 1898 - contract nurse for the Army
 - (2) Sent to the Philippines in 1899
 - c) Volunteered to go to Cuba to assist in the fight against yellow fever
 - d) Volunteered for study
 - (1) 19 participants
 - (2) Only woman, only American
 - (3) Bitten many times with no disease transmission
 - (4) Bitten on Aug 14 1901
 - (a) Became ill on Aug 18
 - (b) Died on Aug 24
 - (5) All human experimentation ceased
 - e) Buried in Havana with full military honors
 - f) Later reburied in Newark, NJ
 - g) Honors
 - (1) Mother was given a pension because of Clara's contributions
 - (2) Postage stamp issued in 1976
 - (3) Inducted as a charter member into the Nurses Hall of Fame
- D. Three thoughts
 1. Be proud of working in public health and mosquito control
 2. Take every opportunity to embrace and promote your program
 3. What we do saves lives and protects the public health