Short Report: Origin of the St. Elizabeth Strain of *Plasmodium vivax*

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Abstract. The St. Elizabeth strain of *Plasmodium vivax* originated in the South Carolina State Hospital instead of the St. Elizabeth Hospital in Washington, DC.

ORIGIN OF THE ST. ELIZABETH STRAIN OF *PLASMODIUM VIVAX*

The St. Elizabeth strain of *Plasmodium vivax* was used extensively in the 1940s in human volunteer studies to test potential anti-malarial drugs. More recently, publications based on archival data refer to patients being treated for neurosyphilis by their infection with different strains of *Plasmodium*, one of which was the St. Elizabeth.^{1–3} In 1941, Coatney and Young reported that the strain had been sent to the South Carolina State Hospital from the St. Elizabeth Hospital in Washington, DC.⁴ Recently, while examining the United States Public Health Service archival records of patient inoculations dating back to 1931, the real origin of the St. Elizabeth parasite became known.

On March 31, 1937, a 19-year-old woman was admitted to the South Carolina State Hospital. The patient had lived in Lake City (Williamsburg County), South Carolina all of her life and reported to have had malaria during the summer since she was 10 years of age. She had no history of syphilis. She had attacks of malaria in May of 1937 and again on June 16. On June 18, 5 mL of her blood, containing what was then called strain #33 or is now known as St. Elizabeth, was passed into the first patient and on July 12 into the second patient, both of whom were syphilitic patients. Subsequently, infectious blood containing the St. Elizabeth strain of *P. vivax* was shipped to other facilities for inoculation into patients and

was used to infect a great many other patients at the South Carolina State Hospital.

How this widely distributed parasite became known as the St. Elizabeth strain is not clear. Possibly, there are repositories of blood films from that era from which DNA could be extracted for the characterization of this parasite. Blood films do exist for other strains of *P. vivax* such as Chesson strain.

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