

St. Louis Encephalitis in Panama: A Review and a Progress Report

Pedro Galindo\* Pauline H. Peralta\*\*Ronald B. Mackenzie\*and  
Henry K. Beye\*\*

The presence of St. Louis encephalitis (SLE) virus in Panama first became known in July 1957, when an agent identified at Gorgas Memorial Laboratory (GML) and confirmed by the New York Laboratories of the Rockefeller Foundation as St. Louis encephalitis virus was isolated from a pool of Sabethes chloropterus mosquitoes. These insects were collected in the canopy of the forest in the area of Buena Vista, a few miles east of the Panama Canal, along the Transisthmian Highway.<sup>1</sup>

From July 1957 through July 1959, eight additional isolates of the same virus were made at GML; four of these were from Sabethes chloropterus, two from human serum, and one each from Sabethes spp., Trichoprosopon spp. and Wyeomyia spp. The two isolates from humans were from GML field workers.

Neutralization tests with 195 human sera collected in the area of Paya, Darien in early 1959 revealed that 69 of the sera neutralized one log or more of SLE virus; 27 neutralized 1.5 logs or more; and 16, or 8.1%, neutralized 2 or more logs.<sup>2</sup>

Two hundred forty-eight blood samples from 139 mammals, 107 birds and 2 reptiles, also collected from the area of Paya, Darien Province in 1959, were tested for SLE neutralizing antibodies. All of the mammals and reptiles, with the exception of two spiny rats (Proechimys semispinosus), gave negative results.<sup>3</sup>

Of the 107 bird sera tested, 11 specimens from birds of six different families, gave positive reactions.<sup>3</sup> It is interesting to note that the 20 chickens and 7 domestic ducks tested were negative and that all 11 positive sera came from arboreal birds.

From 1959 until August 1962 no additional isolates of St. Louis encephalitis virus were made at GML or the Middle America Research Unit (MARU).

In August 1962 two isolations of SLE virus were made at MARU incidental to a study of Venezuelan equine encephalitis (VEE) in and around the town of Juan Díaz located between Panama City and Tocumen Airport. One isolate was from pooled livers and spleens of three ground doves, Columbigallina talpacoti, while the other was from the brain of a sentinel suckling mouse. This area had been under surveillance since January 1962 because an isolate of VEE virus was recovered from a Juan Díaz resident with an acute febrile illness. Collections of sera from a group of 133 residents were made at intervals of 4 months. Frequent checks were made on morbidity among these individuals, and also at the nearby Health Center. No excessive incidence of illness was noted. Neutralization tests with SLE virus and these sera have not yet been done.

In summary, St. Louis encephalitis virus has been isolated from a number of localities in Panama, and from human sera, various genera and species of mosquitoes, sentinel mice and from the ground dove, Columbigallina talpacoti. Its importance as a human disease problem in Panama has not yet been adequately assessed, but on the basis of neutralization tests among the residents of Paya, Darien, infection was as high as 8% in 1959. Cross-reactions of SLE with other group B viruses<sup>4</sup> may influence this value. Additional study, especially with sera collected at Juan Díaz, may be especially informative.

\* Gorgas Memorial Laboratory, Panama, Republic of Panama.

\*\* Middle America Research Unit, Canal Zone, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

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