



AN OUTBREAK OF

St. Louis Encephalitis

IN THE LOWER

THE intensive study of an outbreak of St. Louis encephalitis in the Lower Rio Grande Valley of Texas in 1954 is covered comprehensively in the four papers that follow. They present the epidemiological aspects of the outbreak, the clinical and pathological features, the laboratory phases of the work, and the entomological studies and vector control operations.

The outbreak is one of the largest that has been recorded for this viral disease and represents a new geographic area of distribution.

The study was a joint undertaking of the Hidalgo County (Tex.) Health Unit, the Texas State Department of Health, and the Communicable Disease Center of the Public Health Service. At the time of the study, Dr. Theodore J. Bauer, now deputy chief, Bureau of State Services, Public Health Service, was chief of the Communicable Disease Center. Dr. Henry A. Holle was commissioner of health of the Texas State Department of Health, and Dr. Charles H. Miller, Jr., the director of the Hidalgo County Health Unit (now director,

Comanche County Health Department, Oklahoma).

According to Drs. Bauer, Holle, and Miller, the study helped establish *Culex quinquefasciatus* as the natural vector of the St. Louis encephalitis virus. It also gave recognition, probably for the first time, to the prevalence and probable importance of mild and inapparent infections.

In reviewing other outbreaks of the illness, they point out that this virus disease has been recognized a relatively short time. In 1932 an outbreak of an obscure illness in Paris, Ill., and a similar, more extensive outbreak the next year in the St. Louis, Mo., area prompted an intensive investigation. As a result of this study, the disease entity, now known as St. Louis encephalitis, was defined and the etiological agent identified. Though transmission by mosquitoes was suspected, it was ruled out at that time. Retrospective studies, however, have led to acceptance of *Culex pipiens-quinquefasciatus* as the transmitting agent in this epidemic.

Again in 1937 an outbreak occurred in St.

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Louis, and since then sporadic cases and small outbreaks have been recognized, particularly in California. Subsequent to this study, there have been large outbreaks in the lower Ohio River Valley, 1955, and in the Texas Panhandle and the Louisville, Ky., areas, 1956.

Reporting of this disease, however, is never sufficient except during recognized outbreaks, and even then few cases with adequate followup are described. As a result, the true scope of incidence and geographic distribution has never been defined and the range and severity are inadequately known.

This disease represents only one segment of the larger human disease category of acute infectious encephalitis. The two other distinct viruses indigenous to the United States are western equine and eastern equine encephalitis. Essentially the same limitations exist in the accumulated knowledge pertaining to each. Until there is better understanding of the basic ecol-

ogy of the viral encephalitides, the full extent of the public health problem cannot be known. But it is known that the viruses are transmitted to a reservoir of wild birds by mosquitoes, with a vector occasionally making man and the other larger mammals accidental hosts. Present knowledge indicates that control of encephalitis rests primarily with the control of the particular vector mosquito species.

The outbreak described here occurred late in 1954 in a semitropical area of Texas where the climate and topography especially favor mosquito production. In the spring of that year unusually heavy rains created large residual pools of water that stood for varying periods of time. Hidalgo County and the surrounding area bore the burden of the grave mosquito breeding problem that followed. The Governor declared a state of emergency in this county, and intensive mosquito control operations were conducted. By early May it appeared that adult mosquito populations had been reduced to negligible levels.

In late August an unusually large number of cases of poliomyelitis were reported from the area, many involving adults. This unusual seasonal incidence and the atypical age distribution cast doubt as to the true etiology of the illness. An intensive investigation followed, and St. Louis encephalitis was identified.

