

## Reservoirs of Rabiesvirus in Thailand

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### Part I. Survey of Sylvatic Animals for Rabiesvirus Infection

**OBJECTIVE:** The purpose of this study is to determine the prevalence of rabiesvirus infections in wild rodents in Thailand.

**DESCRIPTION:** A total of 303 rats was trapped in nine provinces of Thailand (four areas). The animals were identified and all brains were examined for the presence of rabiesvirus by the fluorescent antibody (FRA) technique. Approximately five percent of all specimens were inoculated into weanling mice to confirm the negative FRA results.

**PROGRESS:** Rabiesvirus was not isolated from any of the animals examined. These negative results differ from the results obtained in 1966 but are the same as were obtained from surveys conducted in 1967, 1968, and 1969.

**SUMMARY:** There is no evidence that there has been any notable change in the annual incidence of either human or canine rabies in the areas surveyed during this five year period. This fact, in addition to the consistently negative rodent results obtained during the four year period since rodents were implicated as a possible sylvatic reservoir of rabiesvirus infection, suggests that the hypothesis is false. No further surveys are contemplated at this time although the submission of rodents for rabies examination will continue to be encouraged.

### Part II. Survey of Domestic Animals for Rabiesvirus Infection

**OBJECTIVE:** The purpose was to determine the prevalence of rabiesvirus infections in asymptomatic stray dogs captured by municipal and federal authorities in Thailand.

**DESCRIPTION:** Canine specimens were obtained from two sources. Stray dog control programs were conducted by the Division of Communicable Disease Control, Thai Ministry of Health, and cooperating U.S. Air Force installations in Thailand. From 10 to 30 of the dogs collected each day during the operation of the program were submitted for rabiesvirus examination. The total number of dogs captured in the communities involved is not known. The second source of specimens was the Bangkok Municipal Health Department which operates a continuous stray dog pickup program. Each week, 10 percent of the dogs picked up on a single day were randomly selected and submitted for examination. The total figure, therefore, approximates 1.6 percent of all the stray dogs destroyed during the period of the survey (estimated 20 thousand). Only dogs not having clinical signs of rabies were submitted from both groups. All specimens were examined by the FRA technique. Rabiesvirus was isolated from FRA positive specimens by mouse inoculation and confirmed by serum neutralization test. A total of 531 dogs was examined during the reporting period.

**PROGRESS:** The examination results are presented in Table 1. Since these animals were asymptomatic at the time of euthanasia and salivary gland examinations were not done, it is not possible to estimate how many of the FRA positive animals were capable of transmitting the disease. It is assumed that all

were in some stage of virus incubation and that all would have eventually died of rabies. Certainly many would have been responsible for disease transmission to other animals and perhaps to man at some time before death. During the same reporting period, 456 canine specimens were examined for routine rabies diagnosis and 213 or 46.7 percent were found to be positive.

**SUMMARY:** The number of Isolations obtained from the two dog populations emphasizes the extent of canine rabies in Thailand and the need for more adequate control programs if the problem is ever to be eliminated.

Table I.  
Isolation of Rabiesvirus from Asymptomatic Stray Dogs in Thailand

Source	No. Specimens Examined	No. of Rabiesvirus Isolation	Percent
Udorn	105	4	3.8
Korat*	51*	1	2.0
NKP	47*	1	2.1
<u>Bangkok</u>	<u>328</u>	<u>13</u>	<u>4.0</u>
Combined	<u>531</u>	<u>19</u>	<u>3.8%</u>

\*Mouse inoculation results incomplete.

### Part III. Urban rabies in Thailand

**OBJECTIVE:** The purpose was to study the canine population in an urban community in Bangkok, Thailand, in order to determine the risk potential of the dogs and human inhabitants to rabiesvirus infection.

**DESCRIPTION:** The Huey Kwang Government Housing Area was chosen as a study site. The canine population was determined and characterized. Suspect rabid animals were picked up or delivered to the laboratory for examination. The human population was obtained from 1970 census data and changes were based on population estimates furnished by local officials. The number of human dog bite victims was provided by the local medical facility and the municipal antirabies treatment center. Specific information regarding the circumstances surrounding dog bites was obtained by interviewing the victims. The study was conducted over a ten month period.

**PROGRESS:** The canine-human ratio was approximately 1/15 and remained relatively constant throughout the year. However, only 65 percent of the total dog population was considered to be at risk (unconfined, unvaccinated) so the effective "stray dog"-human ratio was 1/23. Two rabid dogs were identified in the fourth month of the study period, one in the seventh and one in the ninth month. Three of these rabid dogs are known to have been unconfined, unvaccinated residents of the study area whereas the fourth is believed to have been a nonresident stray. There were several reports of "rabid" dogs during the eighth and ninth months of the study but these could not be confirmed. A total of 28 residents of Huey Kwang are known to have received treatment for dog bites during the study. Of these, 26 were given Semple vaccine and two received duck embryo vaccine. No rabies or neurologic reaction was observed in any of these patients. One rabies death did occur however. A policeman passing through the study area during the seventh month was bitten by a dog. At that time, no treatment was administered nor was the incident reported. The dog was never identified but probably was not one of the dogs diagnosed in the laboratory. Five weeks after being bitten, the patient reported to the hospital with symptoms of rabies encephalitis. He died four days later. The diagnosis of rabies was not confirmed. Data are being tabulated and evaluated and a manuscript is being prepared.