

Study Reports

1. Title: "Epidemiological Survey - Anthrax"

Principal Investigator: Chua Wongsongsarn, D.V.M.
Associate Investigator: Philip Brachman, MD USPHS
Assistant Investigator: Richard O. Spertzel, Capt, VC
Period Report: 1 April 1964 - 31 March 1966

OBJECTIVE: The objective of this study is to determine the prevalence and distribution of Bacillus anthracis in Thailand and to compare the virulence of organisms recovered.

DESCRIPTION: Anthrax in animals is a peracute disease characterized by septicemia and sudden death with the exudation of tarry blood from the body orifices. The disease is world wide in distribution and persistence of infection is most commonly encountered in tropical and sup-tropical countries. Clinical manifestations closely approximate those of hemorrhagic septicemia (septicemia pasteurellosis), a widely distributed disease which produces very high mortality rates in cattle and buffalo in South East Asian countries. To determine the prevalence and distribution of the causative organism and relate this with mortalities incurred with hemorrhagic septicemia, soil specimens from suspected locations were collected for culture.

PROGRESS: One hundred and forty (140) soil specimens were collected initially in 71 provinces of Thailand from locations where animal deaths with symptomatology suggestive of the disease had occurred. Each location was documented with a description of the site, symptomatology and date of death of the animal/animals. The specimens were then sent to the Communicable Disease Center, Atlanta, Georgia for isolation and identification. Bacillus anthracis was recovered four (4) of one hundred and forty (140) specimens submitted. Positive cultures was obtained from locations in Burirum, Prae, Nan and Mae Hongsorn Provinces. Additional soil specimens were obtained from locations in proximity to these original sites to define the extent of soil contamination. The following specimens were positive on the initial survey.

- 42—Village No. 2 Najvan District, Ampbur Muang, Burirum Province
- 69—Mae Sarieng, Mae Hongsorn Province, abattoir in town
- 76—Village No. 3 Banpathong Silapetch, Nan Province
- 80—Village No. 3 Huayma District, Prae Province

Twenty nine (29) additional soil specimens were collected during the period December 1964 through April 1965 with eleven (11) reported as positive. These specimens were obtained from areas surrounding positive sites located on the initial survey and other areas where suspicious animal deaths occurred. Seven (7) of these specimens were reported as positive. These results suggest that the causative organism Bacillus anthracis remains viable for extended periods in a tropical environment. There is an indication that within any infected area small pockets of soil are positive and not the entire grazing area.

The following outbreaks of the disease in domestic animals have been reported by the Department of Livestock Development, Ministry of Agriculture during the period of this report.

<u>Number</u>	<u>Location</u>
2	Nontaburi
3	Cholburi
1	Chiengrai
1	Chiengmai
2	Petchboon
1	Nakornprathom
1	Nakornsrithamarai
2	Sonkhla
1	Trang
1	Sakolnakorn

The causative organism is responsible for animal deaths in Thailand and had been incriminated in human infections. Outbreak of the disease in both humans and animals have occurred sporadically. Humans have been infected by consuming raw or partially cooked meat from infected animals.

The disease in animals presents a problem to provincial officials because of the similiarity of symptomatology with hemorrhagic septicemia. Vaccination of animals is practiced in endemic areas, however, fund limitations curtail country wide use.

SUMMARY : Anthrax in animals is a peracute disease characterized by septicemia and sudden death with the exudation of tarry blood from the body orifices. Soil samples collected from suspected locations in seventy one (71) provinces were sent to Communicable Disease Center, Atlanta, Georgia for isolation and identification. Results received to date indicate that this organism is prevalent around slaughter houses and hide storage areas. It produces a high mortality in the domestic animal population in Thailand. Cases of disease and deaths have occurred among humans consuming raw or partially cooked meat from animals succumbing to the disease. Outbreaks have occurred sporadically in widely disseminated areas of Thailand and constitute a public health hazard.