

3. Title: Ecological and Epidemiological Survey for rabiesvirus in Cave Bat Populations.

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OBJECTIVE

Preliminary investigations into the feasibility of doing ecological and epidemiological studies of cave bat populations in the Saraburi province the district of Kangkoi have been conducted. Early findings in one well known cave (Kasetsart University farm cave) in the area are very promising. This large limestone cave is located approximately 300 feet above a fertile farm valley in the side of a very steep limestone cliff. The objective of the study is to determine population fluctuations, etiology of disease epizootics, and other ecological and epidemiological factors in the bat populations. An attempt will be made to determine if these bats are migratory.

DESCRIPTION

Population fluctuations are estimated routinely by photographing evening roost departures as soon as the bats begin to leave the cave and at timed intervals thereafter until the evening departures are complete. These estimations are compared to the monthly recorded weights of guano collected from the cave by local residents. Epizootics and epidemics of fatal disease are determined by recording "die-offs" for the first ten days of each month. Dead bats are collected, from a predetermined area, frozen in dry ice, and examined for virological, bacteriological, parasitological, and mycotic pathogenic agents by standard laboratory techniques.

Rodents and other small mammals resident in the immediate vicinity of the cave will be live-trapped and examined for rabies by the FRA test and mouse inoculation. If rabies is found in the resident bats or other small mammals, blood sucking insects such as ticks, mites, and bedbugs will be collected and examined for the presence of rabiesvirus.

PROGRESS

Two species of bats have been identified as principal cave residents. The predominant member is the Wrinkled-lipped free tail bat, Tradarica plicata plicata and the secondary one is the black bearded tomb bat, Taphozous theobaldi. (Identified by Dr. Joe T. Marshall and confirmed by Dr. J.E. Hill of British Museum).

Tests for rabies have been conducted on approximately 70 bats from the cave and no rabies isolates have been made. Three brain specimen inoculated into mice caused deaths 5-7 days post inoculation but the cause has not been determined.

A variety of bacteria have been cultured from the specimens but no correlation has been drawn between the bacterial isolates and disease. Erwinia sp. were cultured from spleen, liver and lungs of 3 bats.

No pathogenic fungi have been recovered from these specimens.

External parasites taken from the bats include ticks, Ixodes (Lepidixodes kepsterni, a newly described species) fleas, (Araeopsylla, possibly undescribed species), mites chiggers and bedbugs. Internal parasites include flukes from the stomach and intestines and round worms from the kidney, liver, intestines and stomach. None have been positively identified.

No banding or migration studies have been attempted. Several rodents were trapped in the cave in March but have not been identified.

SUMMARY

Ecological and epidemiological studies were begun in the bat cave area in February 1969. Data accrued is limited and evaluation at this time would be premature.