

SUPPORT ACTIVITIES OF THE DEPARTMENT OF VETERINARY MEDICINE

Principal Investigators : Richard E. Whitmire, LTC, VC
Robert R. Graham, CPT, VC
Prayot Tanticharoenyos, DVM
Markpol Tingpalapong, DVM, LL.B.
Jerm Pomsdhit
Pranee Hansukjariya, B.Sc.

OBJECTIVES : To report the various activities of the Department of Veterinary Medicine during FY 80 (1 Oct. 79 - 30 Sept. 80).

PROGRESS :

1. Laboratory Animal Colony Activities.

During FY 1980 the laboratory animal colony supplied a large number of research animals to both AFRIMS investigators and investigators from several medical schools, hospitals and other research institutions. A total of 22,506 mice, 67 guinea pigs, 272 hamsters and 1 monkey were supplied to the following institutions : Thai Component, AFRIMS, Rajvithi Hospital, Institute of Science and Technological Research, Dept. of Pharmaceutics, Mahidol University, Livestock Department, Faculty of Veterinary Medicine, Chulalongkorn University, FAO, Pharmaceutical Organization, Kasetsart University, Faculty of School of Tropical Medicine, Faculty of the School of Public Health, Department of Science, Mahidol University, Northeast Diagnostic Center, Khon Kaen. In addition, 14,364 ml. of sheep blood was furnished the Thai Component, AFRIMS, Faculty School of Tropical Medicine, Faculty School of Public Health, Mahidol University, and Seventh Day Adventist Hospital.

A total of 265,083 mice were produced by the mouse breeding colony during FY 80. A total of 344 hamsters were produced and 152 guinea pigs born during FY 80.

A total of 109 Rhesus monkeys were used to test 37 separate compounds in the malaria drug development project. A total of 13 cynomolgus monkeys were born during FY 80. The first two AFRIMS born and reared Cynomolgus monkeys were infected with *Plasmodium cynomolgi* in September in an attempt to use this species in lieu of the now non-available rhesus monkeys. Results are not yet available from this endeavor.

Twenty four rhesus monkeys were shipped to WRAIR for use by other investigators. This brings to 118 the total number of rhesus monkeys shipped to WRAIR in the last two years.

Plans to establish a primate breeding colony were submitted to WRAIR. Both rhesus and cynomolgus monkeys would be bred if the plan is accepted and funded. A cost analysis showed that a two year old rhesus could be produced for approximately \$274.00 and a 2 year old Cynomolgus could be produced for \$191.00. Space to house approximately 480 rhesus and/or cynomolgus monkeys in Wings C and D of the animal colony using gang caging was provided in the plan. This

would not require any modification of the existing building and would allow ample space for the mouse breeding colony in Wing A and adequate space for hamsters, rabbits and guinea pigs in Wing B. An additional 100 monkeys could be housed outdoors along the west side of the building by simply extending the roof and constructing 10 additional gang cages.

A new autoclave for sterilization of food and bedding was received and has just been put into limited operation. This will allow for the autoclaving of bedding before it is used in the animal colony. Additionally, contaminated, used bedding can be autoclaved before dumping.

A new incinerator was received. This will allow for the proper and sanitary disposal of animal remains following termination of studies. The incinerator is not yet operational but should be in the near future.

New ventilating fans were installed in the roof of Wing B in an effort to cool the animal rooms. Initial results indicate that the fans failed to significantly lower the temperature in any of the animal rooms.

Attempts to establish a breeding colony of *Tuapia glis* to be used in filariasis research were initiated. Specially designed breeding cages with nesting boxes were fabricated and are now in use. To date four wild caught pairs (♀, ♂) have been placed in the new breeding cages. No offspring have been produced yet.

New rabbit breeding cages have been placed in the animal colony and to date 27 rabbits have been born in the colony. These rabbits will be used in Leptospirosis research and by the Department of Bacteriology.

The plumbing system in the building housing the Department and the animal colony failed during the latter part of FY 80. Multiple leaks developed in the system making it impossible to maintain a water supply. A "temporary" system was installed at the end of the fiscal year until a more elaborate, permanent system can be constructed.

A break down in the animal feed supply system occurred in August and September resulting in a severe problem in meeting the nutritional needs of the animals in the animal colony. Our monkey chow and other animal chows that we receive from the U.S. failed to get to Bangkok as scheduled. Since there is no local source of monkey chow or other laboratory animal feed and since there is no back up system to use in case of emergency, this breakdown in the supply from the U.S. presents a critical situation for the laboratory. The Chief of Logistics, WRAIR, visited the laboratory at the end of the fiscal year and assured the laboratory that every effort would be made to prevent the recurrence of this problem.

2. Hematology Laboratory Section : Activities of the hematology/histopathology laboratory are summarized as follows :

Malaria parasite counts	-	5,401 slides
Sporozoite counts	-	48 slides
RBC counts	-	488 slides
WBC counts	-	1,140 specimens

Drugs weighed for malaria project	- 2,440 doses
CBC in laboratory and domestic animals	130 specimens
Fecal specimens	355 specimens
Serum specimens (water buffalo, Cattle, Swine, Dog)	1,907 specimens
Histopathology	139 cases; 1,341 blocks and 3,882 slides

3. Research Activities :

A new study of the incidence of infection in water buffalo with Leptospirosis was initiated. A total of 1,907 serum samples were obtained from North-east Thailand. These specimens will be analyzed for the presence of antibody to Leptospirosis, sero-typed and classified. Further follow-up in the area of leptospirosis in rodents is currently being initiated. Studies of an epidemiologic nature involving water buffalo, rodents, swine and dogs are being started at the present time.

A survey on the incidence of canine brucellosis was conducted at the Royal Thai Army Military Working Dog Center, Pak Chong, Thailand - a total of 187 dogs were bled and to date 33 dogs have been tested using the plate agglutination method. Preliminary results indicate that canine brucellosis is present in the breeding section of the Military War Dog Center.

The study of Canine Viral Enteritis (parvovirus) at the Royal Thai Army Military Working Dog Center at Pak Chong is continuing. Recently, all the dogs were vaccinated using a feline parvovirus vaccine in an effort to reduce the death loss due to parvovirus infection. Preliminary results indicate a pronounced drop in the death rate since use of the feline vaccine.

4. Personnel - A twenty percent reduction in personnel was effected during FY 80. This included RIF action for four animal technicians and one research veterinarian. This is the direct result of the non-availability of rhesus monkeys used in the malaria drug development program. WRAIR directed that one wing of the animal colony be effectively closed down with loss of personnel used to staff that wing. Additionally, one professional slot was eliminated due to a phase-out of the malaria project.

5. Support Activities - The Department of Veterinary Medicine supported numerous projects by many AFRIMS investigators during FY 80. A partial list of projects includes :

1. Virological and Pathological Observations of Dengue Virus Replication in Subcutaneously Inoculated Rhesus Monkeys : Phase II.
2. Infection of a new born calf with a Thai human rotavirus strain
3. Evaluation of gibbons, cynomolgus monkeys, and rhesus monkeys as models for Hepatitis A virus (HAV) infection Phase I.
4. Experimental Protocol - Department of Virology.
Preparation of Dengue Immune Sera in Monkeys.

5. Induction of Antibody to a Heterologous Hepatitis B Virus Type in a Chronically Antigenemic Gibbon. (Virus Dept.).
6. Effect of temperature on the extrinsic incubation period of Dengue Virus type-2 in *Aedes aegypti*.
7. Research Protocol - Department of Virology.
Preparation of dengue type 3 and 4 immune sera in monkey.
8. *Aeromonas hydrophelia* as an Enteric Pathogen in Rhesus monkeys -
Department of Bacteriology & Clinical Lab
Sciences (Dr. Echeverria)
9. Mitogenesis Inhibition by Malaria Infected Rhesus Monkeys.
Department of Medicine and Immunology.

6. Publications :

Three publications have been submitted by the department :

1. "Unilateral, congenital Cleft Palate in a White-Handed Gibbon", Markpol Tingpalapong, DVM, LL.B., Frank E. Chapple, William K Andrews, submitted to the Journal of Primatology.

2. "Reactions of Captive Gibbons to Natural Habitat and Wild Conspecifics after release", Markpol Tingpalapong, DVM, LL.B., William T. Watson, Richard E. Whitmire, Frank E. Chapple, Joe T. Marshall, Jr. - submitted to WRAIR for clearance on 18 April 1980.

3. "An Epizootic of Viral Enteritis in Dogs of Thailand", Markpol Tingpalapong, DVM, LL.B., Richard E. Whitmire, Douglas Watts, Donald S. Burke, Leonard N. Binn, Terd Tesaprteep, Songkram Laungtongkum, Ruth Marchwicki - in final revision at WRAIR prior to submission for clearance.