

I. SERVICES

A. Department of Veterinary Medicine

1. Rabies Diagnostic Service:

The objective of this service is to provide a competent facility that will provide a rapid and accurate rabies diagnostic capability in order to determine if human exposure to rabiesvirus has occurred, to confirm rabiesvirus as a cause of death, and to detect and quantitate the serological response to pre- and post-exposure immunization. The fluorescent rabies antibody test (FRA), microscopic examination of Seller's stained impression smears and intracranial inoculation of weanling mice (MI) are the methods used to diagnose the presence of rabies virus in routine specimens. The indirect FRA test (IFRA) is used to determine the presence and titer of rabiesvirus antibody in human sera. Results of diagnostic examinations performed during this reporting period are presented in Table 1. The positive specimens other than dogs and cats were 1 langur, 1 gibbon and 1 human. Four specimens tentatively diagnosed negative by FRA examination were later shown to be positive by MI. A total of 33 (14.2%) of the specimens diagnosed positive by FRA examination were not confirmed by MI. Diagnostic procedures were restandardized during the third quarter and an improvement was reflected by the fact that during the fourth quarter no FRA negative specimens were subsequently found to be positive whereas five (8.2%) of the FRA positive specimens were not confirmed by MI. Although the MI test is not necessarily definitive and complete correlation cannot be expected, efforts to improve the FRA test technically will be continued. Arrangements have been made with the Division of Veterinary Medicine, WRAIR, to recheck a representative number of specimens from this laboratory on a continuing basis. During this reporting period, 324 human sera were examined by IFRA technique for the presence of rabiesvirus antibody.

Table 1.

<u>Species</u>	<u>Number Examined</u>	<u>Number FRA Positive</u>	<u>Percent FRA Positive</u>
Canine	403	249	61.9
Feline	35	8	22.9
Other	59	3	5.1
Total:	<u>497</u>	<u>260</u>	<u>52.3</u>

2. Animal Service:

The statistics dealing with annual experimental animal production, issues, and housing are presented in Tables 1 through 4. During the year entirely new colonies of hamsters and guinea pigs were expanded from imported breeding stock, reached desired levels of production, and replaced the older colonies. The mouse colony was reorganized into three distinct sections for the purpose of limiting the rate of inbreeding and to provide a more flexible output of either weanling mice or suckling litters. Patterned after the scheme of an inbred mouse production colony, there is a nucleus section, an expansion section, and a suckling litter section. The purpose of the nucleus section is to provide future breeders for itself and the expansion colony. In the expansion colony breeders produce mice only for weanling issue and meet the requirements of the suckling litter colony for breeding stock. In the suckling litter colony mice are mated only once, and then either issued with their litters or culled. Suckling litter or weanling output may be adjusted with a three week lead time to meet a wide variety of demands simply by altering the number of breeders that are set up. Inbred Fischer strain rats have proven to be nearly as prolific as the randombred Sprague-Dawley rat so the randombred colony was closed out during the year and issued rats presently consist only of the Fischer strain. The C57B16/J inbred strain of mice has also been very prolific, but the other strains obtained from Jackson Laboratory, the BALB/c, HRS/J, and Hg/Hu strains did not produce enough animals to maintain themselves. Late in the year new breeding pairs of the DBA, C3H, and BALB/c strains were received from the National Institutes of Health. To date these strains appear to

be quite prolific. The ultimate purpose in propogating the strains is to produce an F2 hybrid mouse by crossing the C57, DBA, BALB/c, and C3H strains. Such a mouse will be uniformly "randombred", should possess hybrid vigor, and will not be subject to the genetic drift that is unavoidable in the breeding of randombred animals.

3. Technical Support:

Veterinary services are provided by the professional staff of the Department of Veterinary Medicine in support of laboratory research studies. Services provided to Departments consist primarily of bleeding, anesthetizing, infecting, observing, treating, or performing various diagnostic or preventive medical procedures on laboratory animals. The time allocated to each Department for this service is estimated as follows:

a. Dept. of Pathology	70 hours
b. Dept. of Virology	300 hours
c. Dept. of Bacteriology	200 hours
d. Supply of Animal blood	240 hours
e. Dept. of Parasitology	200 hours
f. Dept. of Entomology	60 hours
g. Outside organizations	120 hours

Assistance provided by animal technicians to other Departments consists mostly of animal restraint and is estimated as follows:

a. Dept. of Parasitology	320 hours
b. Dept. of Entomology	260 hours
c. Dept. of Virology	380 hours
d. Dept. of Pathology	340 hours
e. Dept. of Bacteriology	144 hours
f. Thal Component	96 hours

Table 1. Animals Produced

Species	Number of Litters Produced	Number of Animals Produced	Average Per Litter
Randombred mice	28,913	270,192	9.76
Inbred mice (C 57)	179	1,409	7.85
Fischer Inbred Rats	968	8,652	8.90
Hamsters	1,890	13,510	7.2
Guinea Pigs	101	316	3.5

Table 2. Animals Issued To SMRL

Animals	Produced			Purchased		
	Suckling	Juvenile	Adult	Suckling	Juvenile	Adult
Mice	68,568	89,205	7,616			
Rats	60	2,955	983			
Hamsters		9,340	64			
Guinea Pigs		777	120		1,530	
Rabbits				117		839
Monkeys					25	76
Poultry					62	70
Cats						60
Tree Shrews						4
Squirrels						33
Gibbons					3	3

Total animals issued: 183,089
 Animal blood issued: 110,740 cc.
 Embryonated eggs issued: 8,204

Table 3. Average Number of Experimental Animals Held Per week

Species	Departments								
	Vet Med Issue Pool	Vet Med	Patho	Bact	Parasit	Epid	Virology	Ento	Other
Mice	2,990	955	69	—	750	—	900	—	—
Rats	121	—	19	—	183	—	—	—	—
Guinea Pigs	397	30	—	—	—	—	16	—	—
Hamsters	478	—	—	238	18	—	—	—	—
Rabbits	—	9	—	—	19	—	6	—	—
Tree Shrews	—	—	—	—	29	—	—	—	—
Macaques	—	2	7	—	50	—	43	—	—
Gibbons	—	46	—	6	17	—	47	—	—
Cats	—	—	14	—	19	—	—	—	—
Dogs	—	3	—	—	3	—	—	1	—
Poultry	5	—	20	—	—	—	—	9	—
Sheep	72	—	—	—	—	—	—	—	—

Table 4. Animals Issued to Outside Sources From 1 April 1969—31 March 1970

Species	VietNam	Tropical Med.	Public Hlth	Live-stock	Med Science	Chula-long-korn Uni.	Kaset-sart Uni.	Vet. Sch.	Vet R.E.M.	Women's Hosp.	Pakistan	Prasarnmit College	Japanese Lab. (Virus)	Thai Red Cross
Mice	10,000	130	1,250	2,730	10,338	236	120	220	151	52	—	—	3,300	—
Rats	—	220	228	—	1,915	18	80	—	—	—	100	25	—	—
Hamsters	—	200	—	—	65	—	—	—	—	—	—	—	—	—
Guinea Pig	—	153	—	—	—	—	—	—	—	—	—	—	—	—
Sheep	4	—	—	—	—	—	—	—	—	—	—	—	—	17

B. Department of Neuropsychiatry

1. Psychiatric and neurologic consultation with affiliated hospitals and clinics;
2. Psychiatric evaluation of employees of SEATO related agencies, upon request;
3. Lectures and participation in conferences at medical schools and hospitals with which the Department is affiliated;
4. Consultation to the U.S. Diplomatic Mission Medical Unit;
5. Consultation to the Department of Psychiatry, Phramongkutkiao Hospital, Department of Internal Medicine, Ramathibodhi School of Medicine;
6. Participation in regular case conferences at Srithunya Hospital, Nonthaburi;
7. Contribution of translation services to prepare English language versions of Thai papers of interest to the Department;
8. Contribution of translation and editing services to the Psychiatric Association of Thailand for its 80th Anniversary Meeting;
9. Lectures presented at the 80th Anniversary of Thai Psychiatry in November, 1969:
 - a. "Child Rearing in America: Major Marvin H. Firestone, M.C.;
 - b. "Attitudes Towards Psychiatry in the United States: Major Jonathan J. Russ, M.C.;
10. Lecture presented to Srithunya Hospital staff on 5 March 1970: "Learning Theories and Behavior Therapy" Major Marvin H. Firestone, M.C.;
11. Lecture presented to Srithunya Hospital staff, 8 January 1970: "Personality Theory" Major Jonathan J. Russ, M.C.

C. Department of Parasitology

1. Supplied parasitologic specimens to the following:
 - CPT C. Wilson, Tripler General Hospital;
 - Dr. C. P. Ramachandran, IMR, Malaysia;
 - Dr. Gill A. Schad, Prof of Pathobiology, Johns Hopkins;
 - Dr. Chom Debyasuvarn, Director, Division of Communicable Disease Control, Department of Health, Thailand;
 - Dr. J. M. Blumberg, Hunter Laboratories;Preserved specimens of adult and larval stages of gnathostomes were supplied on request;
2. Performed following examinations:
 - a. Stool examination—993;
 - b. Blood film examinations—268;
3. Through the Faculty of Tropical Medicine, Mahidol University, Mr. Lim Boo Leit of the Kuala Lumpur Institute for Medical Research, Malaysia, was introduced to the laboratory during the morning of 14 November 1969 to study *Gnathostoma* in Thailand. Dr. C. P. Ramachandran, Parasitologist, Institute for Medical Research, Kuala Lumpur, Malaysia, also visited the laboratory and was briefed for about 2 hours on gnathostomes and *Gnathostoma spinigerum* in Thailand;
4. At the request of the Chief, Department of Helminthology, Faculty of Tropical Medicine, Mahidol University, assistance was given in early December 1969 to prepare an up-to-date diagram of the life cycle of *G. spinigerum* for study by those interested in the subject at the Faculty of Medicine and Chulalongkorn Hospital;
5. A lecture on recent advances in the study of *Gnathostoma* and *Gnathostomiasis* for Medical residents and other physicians at the Faculty of Medicine and Siriraj Hospital, Mahidol University, 2 October 1969 (1600—1700 hrs);

6. A seminar on Gnathostoma and Gnathostomiasis to students working for the Master's degree in Science at the Faculty of Science, Mahidol University, 15 October 1969 (1030–1200 hrs);
7. An advanced research project "The Effect of Immune Serum on Plasmodium berghei in vivo and in vitro" was conducted for six medical students in conjunction with the Microbiology Course given at the Faculty of Science, Mahidol University. This extended over a six week period with meetings and laboratory work during three morning (0900–1200 hrs) each week;
8. Presentation of Paper: Manning, G. S. and Anluchal, T., Studies on the Epidemiology of Fasciolopsis buski in Thailand. Third Annual Meeting, Far East Chapter, Assoc. of Military Surgeons.

D. Department of Pathology

The following tests were performed:

Bilirubin	802
Thymol	343
Cholesterol	1,393
SGOT	1,225
SGPT	1,158
Alkaline phosphatase	479
Urea N	875
Total Protein	1,354
Albumin	300
Electrophoresis	962
BSP	14
Acid phosphatase	12
Glucose	1,675
Sodium	1,156
Potassium	1,167
CO ₂	721
Chloride	1,141
Uric Acid	435
Calcium	692
PO ₄	574
Osmolarity	79
Iron	103
TIBC	75
Creatinine	355
Amylase	29
Carotene	56
Cephaline Flocculation	37
Salicylate	7
PBI	639
D-xylose	124
17-OH	297
17-KS	303
17 KGS	256
VMA	328
T. Lipids	1,199
Phospholipid	811
Lipoprotein	329
Triglycerides	780
LDH	48
5 HIAA	5
Free Fatty Acid	754
Fibrinogen	72
Magnesium	3
Zinc Turbidity	59
Optical Density	6