

Laboratory Animal Disease in Thailand: Its Occurrence and  
Importance to Comparative Medicine

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**OBJECTIVE:** The objective of this study is to detect and investigate spontaneous diseases of laboratory animals. This information will aid in defining and improving the health of laboratory animals maintained in Thailand, and in developing animal models for the study of human diseases.

**DESCRIPTION:** In order to accomplish the objective, a program of continuous surveillance of the health status of the animal colony has been developed. Four areas are emphasized in this program: (1) the disease screening program conducted in the laboratory animal breeding colony, (2) the recurring clinical and laboratory examination of animals housed in the colony including those procedures performed during the quarantine of newly purchased animals, (3) the post mortem examination of animals that die in the colony, and (4) the development of standards for operation and quality control. When indicated by the findings, experimental studies are initiated to explore in detail the problems that occur.

**PROGRESS:** There was little evidence of disease among laboratory rodents during this report period. The annual production of rats, mice, and guinea pigs has been maintained at levels comparable to previous years, as have indicators of production efficiency such as conception rate and yield per breeding female. Production was significantly lower during the hot season as in previous years. Ceiling fans have been installed in all breeding rooms in an effort to increase air circulation. The number of rodents necropsied and the distribution of gross pathologic lesions according to organ system is shown in Table 1. The most frequently observed gross lesion was lobar pneumonia.

Table 1. Summary of Rodent Breeding Colony Pathologic Findings for 1973

Species	Number Examined	Pulmonary Pathology	Gastro-Intestinal Pathology	Genito-urinary Pathology
Guinea Pig	50	5	2	4
Mouse	100	9	—	—
Hamster	75	15	5	—

Bacteria isolated from the lungs or feces of mice, hamsters, and guinea pigs as part of the disease screening program are shown in Table 2. The coliform group was most frequently isolated, followed in frequency by *Proteus spp.*

A number of spontaneous deaths occurred among primates in the laboratory during the year. The cause and frequency of deaths in rhesus monkeys during the initial 45 day quarantine period after arrival in the

colony are summarized in Table 3. Rhesus monkeys arrive directly from the wild in India, and over 90% of them have intestinal parasites upon arrival. These animals are stressed by capture, transportation, and adjustment to a different environment, and are quite susceptible to enteritis which is often complicated by secondary bacterial infection. Bacterial enteritis accounted for most of the losses due to intestinal symptoms. Most of the losses due to pulmonary disease are attributed to primary measles virus infection with secondary bacterial complications. This was determined from clinical signs and confirmed by observation of pathologic lesions of interstitial and giant cell pneumonia. Virus isolation has not been attempted. Two cases of tuberculosis were diagnosed by tuberculin testing and confirmed by post mortem examination. Four deaths occurred among gibbons during this report period. These are categorized in Table 4.

Table 2. Bacterial Isolates Identified in Laboratory Rodents 1973

Bacterial Isolate	Mouse (100)		Hamster (75)		Guinea Pig (50)	
	Lung	Stool	Lung	Stool	Lung	Stool
<i>Staphylococcus aureus</i>	4 (4%)	0	0	0	0	0
<i>Staphylococcus epidermidis</i>	4 (4%)	0	6 (8%)	0	8 (16%)	0
<i>Staphylococcus sp. coagulase +</i>	1 (1%)	0	0	0	0	0
<i>Micrococcus sp.</i>	5 (5%)	0	3 (4%)	0	0	0
<i>Micrococcus tetragenes</i>	0	0	1 (1%)	0	0	0
<i>Enterobacter aerogenes</i>	0	4 (4%)	0	7 (9%)	0	4 (8%)
<i>Escherichia coli</i>	0	52 (52%)	0	13 (17%)	0	14 (28%)
<i>Escherichia coli mutabile</i>	0	18 (18%)	0	1 (1%)	0	1 (2%)
<i>Paracolobactrum aeruginoides</i>	0	0	0	0	0	1 (2%)
<i>Paracolobactrum intermedium</i>	0	0	0	0	0	1 (2%)
<i>Streptococcus fecalis</i>	3 (3%)	0	1 (1%)	0	3 (6%)	0
Alpha-hemolytic streptococci	1 (1%)	0	1 (1%)	0	0	0
<i>Pseudomonas aeruginosa</i>	0	7 (7%)	0	0	0	3 (6%)
<i>Pseudomonas spp.</i>	0	1 (1%)	0	1 (1%)	0	0
<i>Proteus mirabilis</i>	0	30 (30%)	0	1 (1%)	0	0
<i>Proteus morganii</i>	0	1 (1%)	0	0	0	1 (2%)
<i>Proteus spp.</i>	3 (3%)	1 (1%)	0	0	0	0
<i>Bacillus spp.</i>	0	0	1 (1%)	0	0	0
<i>Hafnia group.</i>	0	1 (1%)	0	1 (1%)	0	11 (22%)
<i>Herellea spp.</i>	0	1 (1%)	0	0	0	0
<i>Citrobacter spp.</i>	0	0	0	0	0	2 (4%)
<i>Providencia group</i>	0	1 (1%)	0	0	0	3 (6%)
<i>Salmonella paratyphi B</i>	0	0	0	0	0	2 (4%)
No pathogens isolated	85 (85%)	17 (17%)	62 (82%)	33 (44%)	31 (62%)	10 (20%)

Table 3. Rhesus Monkey Losses During the Initial 45-Day Quarantine Period

Month	Animals Received	Number of Deaths	Intestinal Disease	Pulmonary Disease	Encephalitis
January 1973	85	7 (8.2%)	7	1	0
March 1973	85	4 (4.7%)	2	0	0
June 1973	85	3 (3.5%)	3	0	0
October 1973	85	9 (10.6%)	6	3	0
January 1974	85	5 (5.9%)	4	3	0
March 1974	85	10 (10.6%)	3	5	2
Total	510	38 (7.4%)	25	14	2

Table 4. Summary of Gibbon Necropsy Findings

Principle Pathologic Finding	Number of animals
Enteritis ( <i>Shigella flexneri</i> )	1
Enteritis	1
Traumatic injury (cervical fracture)	1
Granulocytic Leukemia	1