

3. Title: "Nutritional and Health Requirements for Development and Maintenance of Conventional Animal Colonies"

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OBJECTIVE: To produce, procure and maintain healthy laboratory animals to support investigative programs

PROGRESS: Infestation of the tropical rat mite (ornithonyssus bacoli) continues to occur sporadically. The source of reinfestation has not been found. Numerous wild rodents have been trapped near the animal rooms and may be the source of infestation. Attempts at control by trapping has been started in addition to the preventive measures within the animal rooms described in annual report 1964. No outbreak of infection with this mite has occurred since August 1965.

Animals produced and issued during report period are shown in Table I & II.

TABLE I
ANIMALS BORN IN THE COLONY

	Litters	‡ Animals	Average/Litter
All Mice**	33,020	273,328	8.27
Hamsters	3,516	21,917	6.23
Rats	819	7,805	9.52
Guinea Pigs	497	1,539	3.09
Rabbits	30	148	4.93

** See Table III&IV

TABLE
ANIMALS ISSUED

	From Colony			Purchased		
	Litters 12,280	Suckling	Weanling 33,967	Adut 3,641	Suckling	Adult
Hamsters			6,363			
Rats			1,118			
Guinea Pigs			1,335			
Tree Shrews						166
Rabbits		260		227	1,363	204
Monkeys						78
Calves						4
Buffalo						4
Gibbons						96
Chickens						68

TABLE III
Litter Size

	SEATO	TAIPAI
P ₁	8.0	8.9
S ₁	7.8	
P ₂	9.1	9.3
S ₂	8.7	
P ₃	8.6	8.8
P ₄	8.5	8.6
P ₅		8.3

TABLE IV
January, February and March

	Litters	Animals	Average/Litter
SEATO Mice	800	6,624	8.28
TAIPAI Mice	6,456	57,640	8.92

Because of increasing demands for animal space, the poor breeding and production record of the rabbit colony and the finding of a satisfactory source of suckling rabbits, it was decided to purchase these animals rather than produce them within the colony. This arrangement has worked out well.

Table I & II indicates what appears to be an over-production in mice, hamsters, rat and guinea pig colonies. This over-production is more apparent than real. Since production is based on estimated requirements and actual utilization fluctuates with prevalence of disease and success of investigative efforts, actual production should exceed use. However, in the "off season" the colonies have to be maintained at a certain minimum level in order to maintain the good quality of the colony. Part of this over-production also occurs because of a predominant requirement for male animals in studies and the females are therefore in excess.

Emphasis on choice of breeding stock, age of breeding mice and environmental conditions decreased the seasonal variation observed in other years, however demands on the colony did not allow sufficient selective breeding to restore the colony to its previous productive state. At this same time, breeding stock from a good quality production colony of the same or similar strain of mice became available. Two hundred male and an equal number of female mice were obtained from U.S. Navy Medical Research Unit #2, Taipai in June 1965 and a nucleus colony of this strain was started. Although production in the SERTO Mouse Colony did not decrease during the hot season as in previous years, a marked decrease occurred in late August. The conception rate continued to decline in September to a low of 20% in P-1 litters. At the same time, the first generation of the mice obtained from NAMRU were having 85% - 90% conception rate. Also the P-1 litter size of the NAMRU mice averaged 8.5/litter as opposed to a P-1 litter size of SEATO mice of 7.8/litter. The NAMRU mice are now producing enough breeders to convert the production colonies to NAMRU mice. Increased conception rates and litter size will result in fewer female "set-ups" to meet research demands. The changeover to Taipai mice was accomplished during November and December. A nucleus colony of SEATO mice is being maintained. During the changeover period, the conception rate of Taipai mice remained at 85% or higher. The litter size of the Taipai mice has continued to be larger than the SEATO mice. (Table III & Table IV)

SUMMARY: The rabbit colony was discontinued. Mouse colony production was changed over to a strain imported from NAMRU #2, Taiwan. Sporadic rat mite infestation continued but has not occurred since August 1965.