

## Studies on the Growth, Development and Reproduction of Gibbons in Captivity

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**OBJECTIVE:** To collect information on the growth, development, and reproduction of gibbons in captivity which may be useful in medical research, and to develop methods of breeding and rearing gibbons in a laboratory environment.

**BACKGROUND:** A colony of 55 gibbons (*Hylobates lar*) has been maintained at the SEATO Medical Research Laboratory for use in the medical research projects of the laboratory. An active breeding program has been conducted for the past several years, and 16 young have been produced in the laboratory. Insofar as it is consistent with the other research objectives of the laboratory, observations on various aspects of the growth and development of these laboratory raised animals have been made on a regular basis.

**PROGRESS:** During the past year, 5 gibbons were born in the colony. Three of these are presently alive and healthy. One was stillborn, and one died at 5 weeks of age of an acute bronchopneumonia. The birth information for these 5 animals is presented in Table 1. Since 1967, six females have produced all of the 16 young raised in the laboratory. It is of interest to note the period of time elapsing between deliveries of successive young. This information is presented in Table 2. The shortest intervals between delivery of young were in B-4 and B-7. These females each had their third baby only 9.5 months after the previous birth. These data indicate that frequent parturition is possible in captive female gibbons, but that it may take several years in captivity to attain a birth rate approaching one young per year. Adaptation to life in captivity and compatibility with the males in the breeding group play major roles in obtaining frequent pregnancies in the female gibbon.

During 1972, gibbon PC-1, the first gibbon born in our colony on 22 December 1967, began to menstruate. Eversion of the vulva was first noted on 12 July 1972, and daily vaginal swabs were taken from that time until the first menstrual flow was noted on 6 September 1972. Its age at that time was 4 years, 7 months, and 19 days and body weight was 4,600 grams. Subsequent menstrual bleeding was observed on 15 October, 11 November, 16 December, 19 January, 10 February, and 8 March at intervals of 36, 27, 35, 34, 22, and 26 days respectively. On the day that vaginal eversion was noted (12 July 1972), the only decidua teeth remaining were the upper canines. The left upper canine was shed on 16 August, and the right was loose. The right upper canine was shed a few days later.

The regular program of daily observation and vaginal swabbing in 11 of the female gibbons in the colony was continued during 1972, in order to better characterize the length of the sexual cycle and its variability. The results of these observations are indicated in Table 3. The length of the cycle was usually 19-23 days, but intervals as short as 11 days were observed. In nearly all animals, periods of amenorrhea two or three months in duration or longer were noted. It is believed that these longer periods between successive menstruations are multiples of the basic cycle. S-70 and S-81 were quiescent throughout most of the period.

**SUMMARY:** Five baby gibbons were born in the animal colony during the year, and three are being raised successfully. Several breeding females have now given birth to several successive young. In three cases, the interval between births has been only 9.5 to 10 months. One female gibbon born in the colony reached sexual maturity during the year, with the first menstrual bleeding being observed at 4 years, 7 months and 19 days of age.

Table 1.  
Gibbons Born in the SMRL Colony during 1972-1973

Baby Number	Date of Birth	Parents		Remarks
		Male	Female	
PC-12	10 Mar 72	B-8	B-7	Died 17 Apr 72 of Acute Pneumonia
PC-13	11 Aug 72	S-58	B-11	
PC-14	28 Oct 72	B-12	B-4	Stillborn
PC-15	22 Dec 72	P-16	B-7	
PC-16	1 Jan 73	B-8	B-59	

Table 2.  
Reproductive Data on Breeding Female  
Gibbons in the SMRL Colony

Female Number	Date of Birth of Young			
	1st	2nd	3rd	4th
B-4	12 Dec 67	11 Oct 70 (34) (b)	26 Jul 71 (9.5)	28 Nov 72 (16)
B-6	(a) Mar 69			
B-7	12 Jun 68	10 Mar 72 (45)	22 Dec 72 (9.5)	
B-11	10 May 68	16 Sept 70 (28)	15 Oct 71 (13)	11 Aug 72 (10)
B-37	4 May 71			
B-59	(a) Sep 69	12 Oct 71 (25)	1 Jan 73 (14)	

(a) These births occurred under wild conditions on an island in the gulf of Thailand. The exact date of birth is unknown.

(b) Numbers in parenthesis are the number of months since the previous birth for this female.

Table 3.  
The Duration of the Sexual Cycle in the Female Gibbon

		Gibbon Identification Number										
		B14S	B66S	B85*	B88	P2	P5	S2	S20	S90	S81	S92
Interval in days between successive cycles	63	22	19	22	24	22	23	23	144	101	20	
	26	22	22	20	18	56	21	28	207		11	
	26	19	18	43	24	21	24	37			61	
	33	20	27	22	18	48	25	30			22	
	101	14	21	35	27	38	18	29			23	
	21	26	22		21	45	20	22			26	
	22	21	29		14	21	18	56			28	
	31	19	70		15		20	26			19	
	25	21	24		21		26	21				
		23	20		29		21	26				
		23	23		16		19					
		20	19		46		19					
		22	38		14		20					
		44			15		25					
		20					23					
	20					21						

\* All gibbons in the study are *Hylobates lar*, except B-85 which is *Hylobates lar pileatus*.