

## Gibbon Growth and Development Study

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**OBJECTIVE:** The production of gibbons from the gibbon menstrual cycle and breeding program has offered a unique opportunity to measure certain parameters of growth and development in animals where birthdates are known. The purpose of this study is to relate distinctive developmental features to the age of these young gibbons so that the age of animals with unknown birthdates may be accurately determined.

**DESCRIPTION:** Growth and development is measured by body weights, dentition, whole body radiographs, and sexual development evaluated at quarterly intervals. During the report period, 11 quarterly observations have been made among the four baby gibbons that were available for study.

**PROGRESS:** In addition to having whole body radiographs available through the age of 3 years in one animal, the birth of a gibbon in the breeding program made it possible to obtain the first skeletal radiographs taken at the time of birth. The identifiable differences in the development of gibbon PC1 are continued from the 1970 annual report and are listed below :

- 27 mos.      a. proximal epiphysis of the first metacarpal assumes a comma shape.  
                  b. weight is 2 1/2 kg.
- 30 mos.      a. proximal epiphysis of the proximal 5th phalanx increases in size from just a line to a rectangular shape.  
                  b. the medial aspect of the proximal epiphysis of the first metacarpal becomes twice the size of the lateral aspect.  
                  c. weight is 2.9 kg.
- 33 mos.      a. proximal epiphysis of the proximal 1st phalanx has become thickened medially.  
                  b. the patellas have increased in size by approximately 50%.  
                  c. weight is 3.0 kg.
- 36 mos.      a. the distal epiphysis of the 3rd metacarpal is "capping" slightly over the distal metacarpal diaphysis.  
                  b. weight is 3.3 kg.

There are no remarkable developments in dentition or sexual characteristics during this time. The developmental changes occurring in PC4, PC6, and PC7 correspond closely with those changes described for equivalent ages of PC1, PC2, and PC3 in the last annual report. Gibbon PC4 died during the report period, apparently as a result of complications which followed anesthesia.