

NATIONAL STUDBOOK

Golden Langur (*Trachypithecus geei*)

Published as a part of the Central Zoo Authority sponsored project titled
“Development and maintenance of studbooks for selected endangered species in Indian zoos”

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केन्द्रीय चिड़ियाघर प्राधिकरण
Central Zoo Authority

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Compiled and Analyzed by

Ms. Nilofer Begum
Junior Research Fellow

Project Consultant

Dr. Anupam Srivastav, Ph.D.

Supervisors

Dr. Parag Nigam
Shri. P.C. Tyagi

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FOREWORD

For species threatened with extinction in their natural habitats ex-situ conservation offers an opportunity for ensuring their long-term survival. This can be ensured by scientific management to ensure their long term genetic viability and demographic stability. Pedigree information contained in studbooks forms the basis for this management.

The Central Zoo Authority (CZA) in collaboration with zoos in India has initiated a conservation breeding program for threatened species in Indian zoos. As a part of this endeavor a Memorandum of Understanding has been signed with the Wildlife Institute of India for compilation and update of studbooks of identified species in Indian zoos.

As part of the project outcomes the WII has compiled the studbook for Golden langur (*Trachypithecus geei*) in Indian zoos. The recommendations contained in the studbook will form the basis for the long term management of the species in captivity. It is hoped that the zoos will adopt the recommendations and keep the WII informed of changes in their populations to enable the timely update of the studbook.

(B.S. Bonal, I.F.S.)
Member Secretary
Central Zoo Authority

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Alipore Zoological Garden, Kolkata
Assam State Zoo cum Botanical Garden, Guwahati
Bannerghatta National Park, Bangalore
Bokaro Steel Plant Zoo, Bokaro
Kamla Nehru Zoological Garden, Ahmedabad
Kanpur Zoological Park, Kanpur
Lucknow Zoological Garden, Lucknow
Mahendra Chaudhury Zoological Park, Chhatbir
Nandankanan Biological Park, Bhubaneswar
National Zoological Park, New Delhi
Nehru Zoological Park, Hyderabad
Sanjay Gandhi Biological Park, Patna
Sanjay Gandhi National Park, Borivilli, Mumbai
Sepahijala Zoological Park, Tripura
Thiruvananthapuram Zoo, Thiruvananthapuram

Authors

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GOLDEN LANGUR (*Trachypithecus geei*), (Khajuria, 1956)

Species information

Golden langurs get their name from the striking golden-orange colour of their fur. The species was discovered in 1953 by E.P. Gee and was later described by Khajuria in 1956 (Khajuria 1956). It is an endangered primate endemic to north-western Assam, India and southern Bhutan.

Taxonomy

Phylum- Chordata
Sub-phylum- Vertebrata
Class- Mammalia
Order- Primates
Family- Cercopithecidae
Sub- family- Colobinae
Genus- *Trachypithecus*
Species- *Trachypithecus geei*



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Golden Langurs (*Trachypithecus geei*) belong to a large group of Old World monkeys called the colobines (subfamily Colobinae). The Colobines are principally leaf eating primates and have a ruminant like multi-chambered stomach. Phylogeny based on anatomical characteristics of the fore-stomach by Caton (1998) suggests that Asian colobines (*Trachypithecus*, *Semnopithecus* and *Presbytis*) have a three-chambered or "tripartite" forestomach. Like other langurs, golden langurs also possess a specialized stomach system with a variety of microflora that helps them ferment and digest nutrients and fibre of leaves.

There has been a disagreement about the phylogenetic position of *Trachypithecus geei*, whether it is an independent monophyletic species or a subspecies of the capped langur (*Trachypithecus pileatus*). Based on coat colour differences, Khajuria (1956) designated the golden langur as a separate species. Wangchuk (2005) supports that *Trachypithecus geei* and *Trachypithecus pileatus* are well diverged from and reciprocally monophyletic with each other and should be retained as separate species. A study by Karanth (2008) suggested a reticulate evolution of capped and golden langurs through ancient hybridization between *Semnopithecus* and *Trachypithecus*. Karanth (2010) tentatively assigned these two closely related species to a separate lineage termed 'golden-capped lineage', and suggested separate genera may be assigned for the two.

In Bhutan, where both the species are found, construction of bridges across the Chamkhar River has allowed the langurs to cross the river and interbreed (Wangchuk 2005). Based on differences in coat colour, Wangchuk (2005) differentiated them into two sub-species: the northern subspecies *Trachypithecus geei bhutanensis* (north-Bhutan) and the southern subspecies *Trachypithecus geei geei* (south-Bhutan and India). However, subspecies *Trachypithecus geei bhutanensis* has not been described according to ICZN rules.

Morphology

Golden langurs appear uniformly deep cream colored in dull light and bright golden in sunlight. The coat color varies seasonally, becoming white or cream colored in summer and dark golden to chestnut in winter. Newly born young appear pure white but may also be affected by erythrinism (reddish pigmentation). They have a hairless black face except for a long pale beard. An ill-defined whorl of hair on the crown protects their eyes and face from glare while long whiskers around the ears protect them from rainwater during the monsoon season (Khajuria 1977).

Golden langurs are sexually dimorphic. Males are larger and more robust than females. The average body mass for adult males is 10.8 kilograms and for adult females it is 9.5 kilograms (Fleagle 1999). The length of the head and body ranges from 50-75 centimeters, while the tail length ranges from 70-100 centimeters (Gurung and Singh 1996). Tassel at the end of tails are slightly larger in males.

Distribution

Golden langurs, (*Trachypithecus geei*) have a restricted range in southern Bhutan and a small forest belt in western Assam. They occur in lowland evergreen, semi-evergreen and riparian moist deciduous

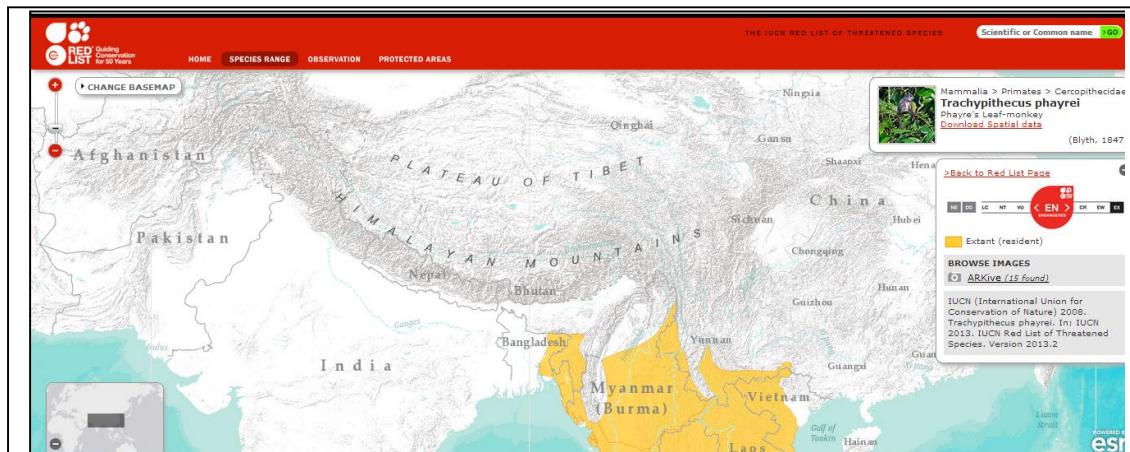


Figure 1: Geographic range of Golden langur (Das et al. 2008)

and sal-dominated, moist deciduous forest (Srivastava et al. 2001a; Biswas 2005; Bezbarua 2004) in the Brahmaputra river valley of Assam and the foothills of the Black mountains of Bhutan (Srivastava et

al. 2001b). In Bhutan, golden langurs occur from subtropical forests in the south to temperate and sub-alpine forests in the north (Wangchuk, 1995; Wangchuk *et al.*, 2001). In Assam, the main population resides in the Kachugaon, Ripu and Manas reserve forests with some major populations in other isolated forests south of the Manas Biosphere Reserve (Horwich *et al.* 2013). The species occupies forested areas of 900 square kilometer in India (Molur *et al.* 2003) and 1400 square kilometer in Bhutan (Wangchuk *et al.* 2003).

Habitat

Trachypithecus geei occur in subtropical and temperate broadleaf forests in Assam in India and Bhutan. A substantial range in elevation of near sea-level in the south to above 3,000 m in the north has been observed for the species (Wangchuk *et al.* 2003). The total known suitable habitat of the golden langur in India was found to be less than 500 square kilometer (Srivastava 2006). Hybrids of *Trachypithecus geei* and *Trachypithecus pileatus* occur in subtropical and temperate broadleaf forests between 800 and 2,600 meter in Bhutan (Wangchuk 2005).

Behavioral ecology

Activity patterns

Golden langurs are diurnal in habit. They are arboreal and come to the ground occasionally to drink water, lick salt earth and for crossing large canopy gaps (Gee 1961; Wangchuk 1995; Biswas 2004; Wangchuk 2005;). However; troops have been reported to exploit village fruit and ground crops in severely disturbed forest fragments (Horwich *et al.* 2008). The activity budget of the species in Chakrashila Wildlife Sanctuary, Assam, as reported by Chetry *et al.* (2002) was: resting (54.75%), feeding (29.26%), travelling (8.59%), monitoring (3.93%), playing (2.03%) and grooming (1.45%). Their activities slow down with the progression of the day. Tall trees providing good cover are generally used for roosting during summer while trees exposed to sunlight are preferred during winter (Mukherjee 2000). Social grooming and social play are important mid-day rest activities (Mukherjee 2000). Activity is again resumed in the late afternoon but on cloudy days troops were found to be active even during the regular resting periods (Wangchuk 2005). Troop members move to their sleeping trees in the evening and these trees are often the same as were used for foraging during evening and may be used for activity next morning (Mukherjee and Saha 1974). For a newborn, most of its time is spent in sleeping and sitting (55.05%), followed by, pulling and pushing (21.61%), and suckling (13.76%) (Medhi and Bhattacharjee 2002).

Feeding ecology

Trachypithecus geei like most langurs, have a predominantly folivorous diet. Their diet consists of young and mature leaves, ripe and unripe fruits, leaf buds, flower buds, seeds, twigs, and flowers. The main proportion of their diet consists of young leaves throughout the year (Gupta and Chivers 2000).

Yellow blossoms and buds of balu tree (*Dillenia pentagyna*) are other preferred food items (Wayre 1968). Drinking water is obtained from water holes during summer while in other seasons it is obtained from the foliage (Khajuria 1977).

Golden langurs prefer foraging in deciduous trees that are budding and have also been seen to forage on leguminous shrubs. Food is often supplemented with exotic plant species (Gupta and Dasgupta, 2004). During summer feeding starts at around 0430 hours while in winter it starts at 0530 hours (Gupta and Chivers 2000). Their activity patterns show two feeding peaks, one in the morning (between 0630 and 0800 hours) and the other in the late afternoon (between 1530 and 1700 hours) just before roosting (Mukherjee and Saha 1974; Biswas 2004; Gupta and Chivers 2000). They feed at an average height of 15 to 21 meters, occasionally coming down to lower branches (Mukherjee and Saha, 1974).

Social organization and behavior

Golden langurs live in troops of 3 to 15 individuals, mostly as single male/multi-female or two-male/multi female groups and sometimes in all male groups (Chetry *et al.* 2010). A mean group size of 7.4 and an adult sex ratio of 1:1.53 have been recorded by Chetry *et al.* (2010). Friendly relations are shared between the troop members. Hostile behavior among the group members and between other sympatric species (capped langur and Phayre's leaf monkey) have not been observed except for issuing mild threats when coming in close contact during foraging or moving (Mukherjee 2000). Srivastava *et al.* (1998) observed that in degraded habitats the species lived in larger groups with higher population density, but with lower birth rates.

The dominant male controls the movement of the group. In case of an alarm, the dominant male allows the other members to retreat first and then follows the group (Mukherjee and Saha 1974). The dominant male may occasionally attempt to frighten away the provoker by making short, sharp repeated sounds and making aggressive gestures. Social play is found to occur in trees only and includes activities like: chasing, wrestling, climbing, running, and jumping and is mainly restricted to juveniles, with infants occasionally joining in (Mukherjee and Saha 1974).

Little is known about the reproduction and breeding patterns of the species. However, their reproduction is believed to be similar to hanuman langurs. Although not much is known, it has been observed that Golden langurs are co-operative breeders and births take place year-round. However, births may be concentrated during certain months of the year, depending on changes in climate and vegetation, as has been observed by Subba (1989) and Subba and Santiapillai (1989) (January-February in Manas National Park, Bhutan). Mounting, solicitation, copulation, chasing, aggression and other socio-sexual activities of the langurs were found to increase during monsoon and retreating monsoon as compared to other seasons (Biswas 2004). The newborn is completely dependent on its mother (Medhi and Bhattacharjee 2002; Mukherjee and Saha 1974). Care for the young is provided by the mother and other females in the group.

Table 1: Life history traits of Golden langur

Inter birth interval	Not known
Breeding season	Year round
Average number of offspring	1
Generation time	6 years (Wangchuk 2005)
Gestation period	180 days (Subba 1989; Subba and Santiapillai 1989)

Population status in the wild

In 2001 the population in India was estimated to be less than 1,500 langurs (Srivastava 2006). In Bhutan the population was estimated to be 6,637 individuals in 2003 (Wangchuk 2005). He however, noted that the census being carried out in relatively pristine habitats, such high density of golden langurs may not occur in highly populated areas of southern Bhutan. Several studies have indicated a declining population trend of the species in India (Mukherjee and Southwick 1997; Srivastava *et al.* 2001b; Srivastava 2004, 2006). Further, they occur in very small groups with a higher proportion of adults than juveniles and infants (Mukherjee *et al.* 1997). Recent censuses conducted under the Golden Langur Conservation Project (GLCP) in India have recorded over 5,600 langurs in 2008–2012 (Horwich *et al.* 2013). The Golden langur population in India and Bhutan is estimated at over 12,000 individuals (Horwich *et al.* 2013).

Threats

Loss of habitat and habitat fragmentation are the major threats for the Golden langur in India (Srivastava 2001b; Choudhury 2002). Large scale logging due to political unrest and inter-tribal violence has caused a major reduction of their habitat in India. Forest reserves with varying degrees of disturbance constitute 93% of the entire Golden langur habitat (Srivastava 2006). This has resulted in the actual area being available reduced by 1/3rd of its original in the last ten years (Forest Survey of India, 1997) resulting in severe fragmentation and subsequent degradation of their habitats. Its area is predicted to decline by >20% in the next 10 years due to encroachment and anthropogenic activities (Molur *et al.* 2003).

Langurs are often killed by people, dogs or due to electrocution when jumping onto power lines in areas of close human proximity (Medhi *et al.* 2004). High juvenile mortality and inbreeding are other major problems faced by the species (Molur *et al.* 2003). Moreover, spray of insecticides on rubber plants in Kokrajhar district of Assam has exposed them to life-threatening insecticide poisoning (Pathak 2011).

Conservation status and measures

In the IUCN Red Data Book threatened species (2008), Golden langur is under Endangered (A2c; C2a) category. It is also placed in Appendix-I of CITES. It has the highest legal protection in India, being

placed under Schedule-I of Indian Wildlife Protection Act, 1972 (amended in 1991) which prohibits killing, trapping, capturing, and keeping them as pets. In the year 1998, the Golden Langur Conservation Project (GLCP) was initiated as an extension of the Indo-US Primate Project, with a goal of protecting the golden langur and its habitat in western Assam (Horwich *et al.* 2010). It is believed that community reforestation and forest protection efforts have led to a major increase in the Golden langur population from an estimated 1,500 langurs in 1997 to currently over 5,600 langurs (Horwich *et al.* 2013). The Central Zoo Authority (CZA), India, has identified Golden langur as a species for conservation breeding in Indian zoos at Assam State Zoo-cum-Botanical Garden.

Status in captivity

In India, Golden langur has been housed in captivity since 1960, with most of the individuals having been housed at the Assam Zoo-cum-Botanical Gardens, and only a few individuals kept sporadically in other zoos. The records indicate a total of 168 captive individuals housed during 1960-2013, with a median of 10.5 individuals per year ($10.5_{\text{Mean}} \pm 7.23_{\text{SD}}$). There are no records available of this species housed elsewhere in captivity on Zoological Information Management System (ZIMS). The living population consists of five individuals housed at the Assam State Zoo-cum-Botanical Gardens. The number of Golden langurs housed in different Indian zoos over the 54 year period is shown in Table 2.

Table 2: Status of Golden langurs in Indian zoos

Location	Total	Living	Years managed	Births	Deaths
Ahmedabad	2.2.1	0.0.0	26 (1969-94)	0.0.0	1.2.1
Assam	49.60.0	4.1.0	55 (1960-14)	8.5.0	36.49.0
Bannerghatta	1.1.0	0.0.0	14 (1988-01)	0.0.0	1.1.0
Bokaro	2.2.0	0.0.0	14 (1992-05)	0.0.0	2.2.0
Borivili	3.1.0	0.0.0	6 (1992-97)	0.0.0	3.1.0
Calcutta	5.3.0	0.0.0	27 (1971-97)	0.0.0	5.3.0
Chatbir	4.4.0	0.0.0	9 (1975-83)	0.0.0	4.4.0
Delhi	1.3.0	0.0.0	4 (1968-71)	0.0.0	0.3.0
Gangtok	1.1.0	0.0.0	1 (1978)	0.0.0	0.0.0
Hyderabad	4.5.0	0.0.0	16 (1986-01)	0.0.0	4.5.0
Kanpur	9.8.0	0.0.0	27 (1975-01)	4.0.0	9.8.0
Lucknow	0.1.0	0.0.0	1 (1979)	0.0.0	0.0.0
Nandankanan	3.2.0	0.0.0	26 (1971-96)	0.0.0	3.2.0
Patna	1.2.0	0.0.0	3 (1992-94)	0.0.0	0.0.0
Tripura	0.1.0	0.0.0	1 (1989)	0.0.0	0.0.0
Trivandrum	2.1.1	0.0.0	17 (1972-88)	0.0.0	1.1.1

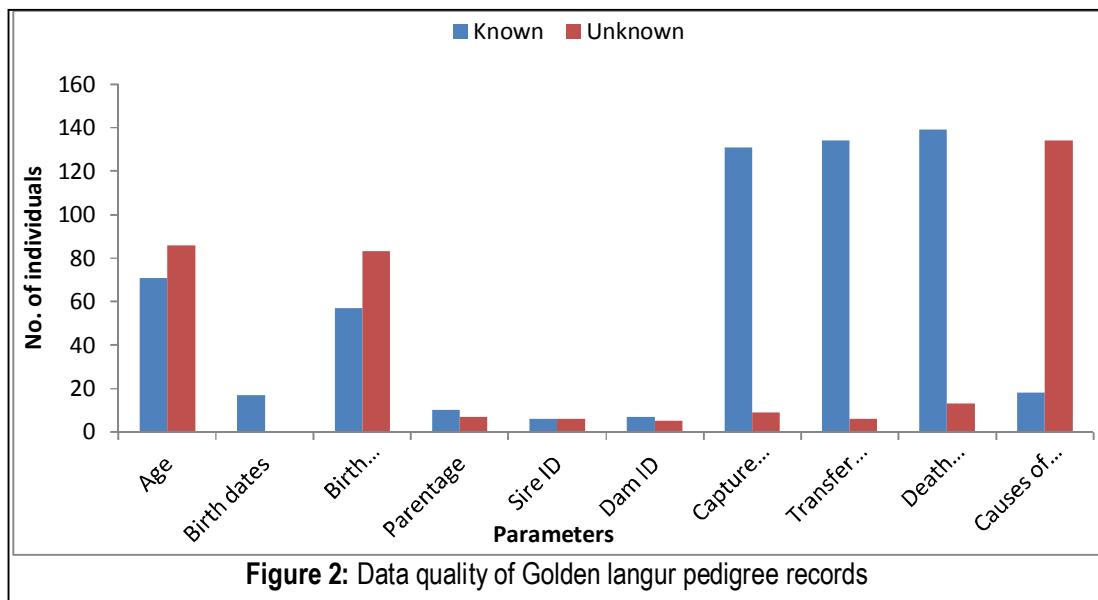
Methods

Pedigree data was collected by means of mailed questionnaires, zoo visits and from the websites of Central Zoo Authority and Zoological Information Management System (ZIMS). Questionnaires were sent to various institutions housing Golden langur in India, requesting information about each captive specimen. Data was entered in the Single Population Analysis and Records Keeping System (SPARKS v 1.66) (ISIS, 2004) and subsequently exported to population management program PMx v 1.2 (Ballou *et al.* 2010). Data was exported from SPARKS as *Exchange.csv* and *PMxCensus.csv* files which were then used as input files in PMx for further analysis. Further visualization and analysis of pedigree data was performed using the program Lineage v 1.06 (Pollak *et al.* 2001). The individuals that were released back (4) or were lost to follow up (7) have been excluded from analyses. Since, there is minimal representation of the historical population in the living population, historical population here refers to non-living individuals only.

Results

Data quality

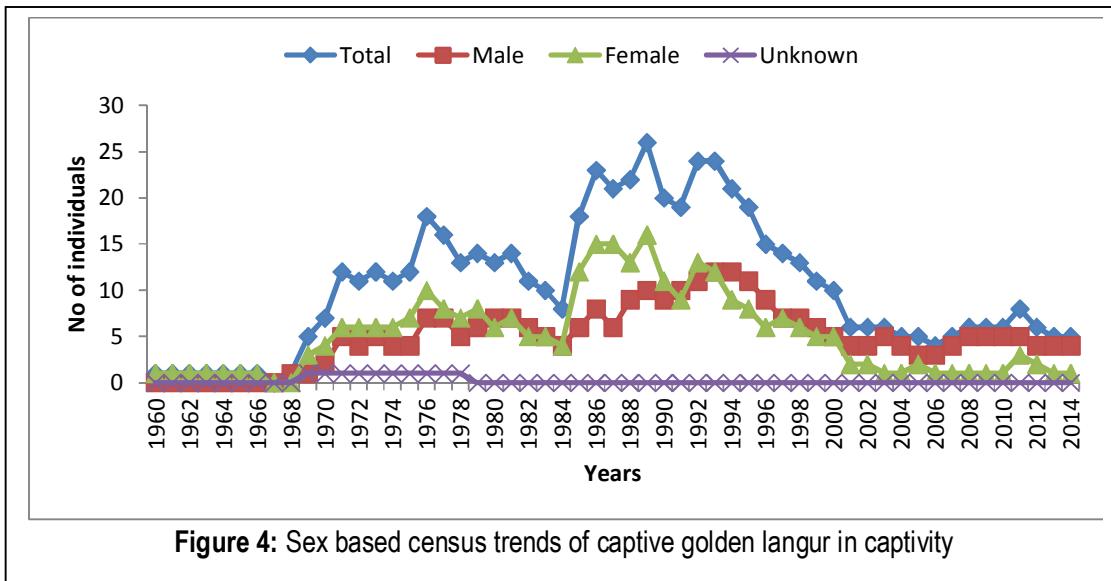
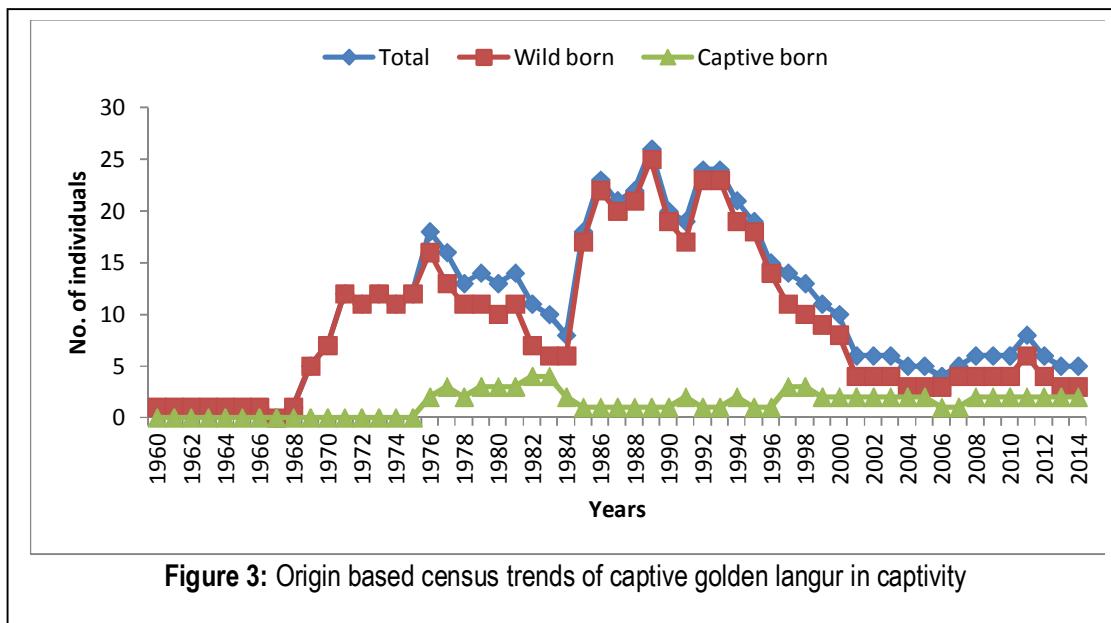
The analysis of studbook data largely depends on availability of accurate demographic data *i.e.* dates of birth and mortality and parentage records. Large proportion of unknown pedigrees and low numbers of births affect the results generated by PMx (Taylor-Holzer 2011). The captive population of golden langur has a large number of individuals of wild-origin with limited information on birth-dates and



parentage. The information obtained was not adequate for construction of life tables and for genetic analysis. Due to non availability of data concerning many of these parameters (Figure 2), demographic analysis was limited only to descriptive accounts of the population trends and no genetic analysis was performed.

Historical population

The historical population of the species in captivity in Indian zoos consists of 163 individuals (75: 86: 2). It consists predominantly of wild born individuals with limited captive births. The historical population includes 148 (65: 81: 2) wild origin and 15 (10: 5: 0) captive born individuals. The first Golden langur was brought into captivity in the year 1960 at Assam State Zoo cum Botanical Garden, Guwahati; thereafter wild born individuals have been added to the population regularly. A total of 54 individuals had been acquired before the first captive birth occurred at Assam zoo, in 1976. The census trends based on origin of animals and their sex respectively are presented in figures 3 & 4.



The census trends indicate an increase in the total population during 1970 and 1976 and 1985 to 1990, however; Figure 3 shows that this increase in population has been largely due to recruitment of wild

origin individuals. The contribution of captive born individuals has been minimal. The population has been decreasing since 1993, with a slight increase during 2006 and 2011 again due to inclusion of wild origin individuals and a dip again in 2011.

Age specific survivorship

The birth and death dates of 65 individuals in the historical population were known; hence ages of these individuals could be calculated. Figure 5 shows the survivorship of the known age individuals in the historical population. Approximately 49% (32) of the individuals survived to the age group 5 to 10 years with a median age of 6.84 ($7.16_{\text{Mean}} \pm 5.29_{\text{SD}}$) years; with a steep decline after the 6th year of life which continued till the 8th year of life. Thereafter approximately 10% of the population survived till 13 year of age; the age of optimum reproductive activity. Beyond this age the population again underwent a steep decline and had too few individuals in it to contribute to the growth of the population. Overall the known age individuals in the population survived for a median of 2 (3.68 ± 4.44) years in captivity.

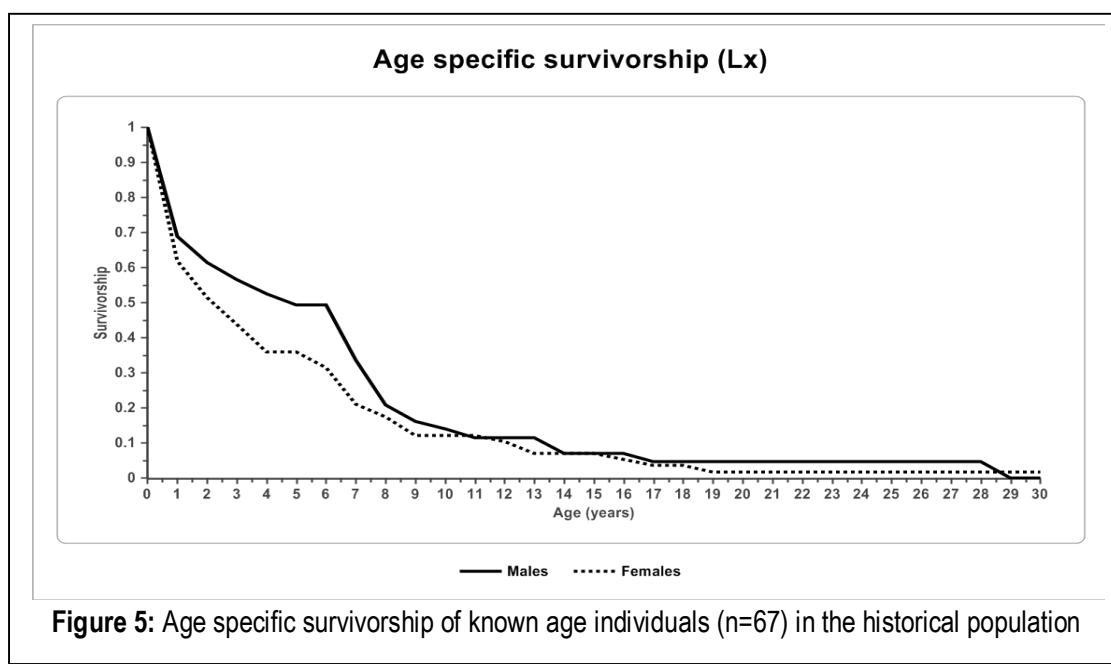


Figure 5: Age specific survivorship of known age individuals (n=67) in the historical population

Age- specific patterns of survivorship (L_x) can indicate the median survivorship (the age where $L_x = 0.5$), also called the median life expectancy

Living population

The living population consists of five individuals (four males, one female). Of these, three (two males and one female) are wild born and two (males) are captive born individuals. The median age of the living population is 9 ($10.4_{\text{Mean}} \pm 5.02_{\text{SD}}$) years. The studbook numbers, origin, sex and age of the individuals from the living population are provided in Table 2. The captive born individuals in the living population are derived from only 2 founders, and therefore have a small representation from the historical population (Figure 6).

Table 2: Age distribution of the living population

National Studbook No. (NSN)	Origin	Age (years)	Sex
162	Wild	19	Male
164	Captive	8	Male
165	Wild	9	Male
166	Captive	6	Male
168	Wild	10	Female

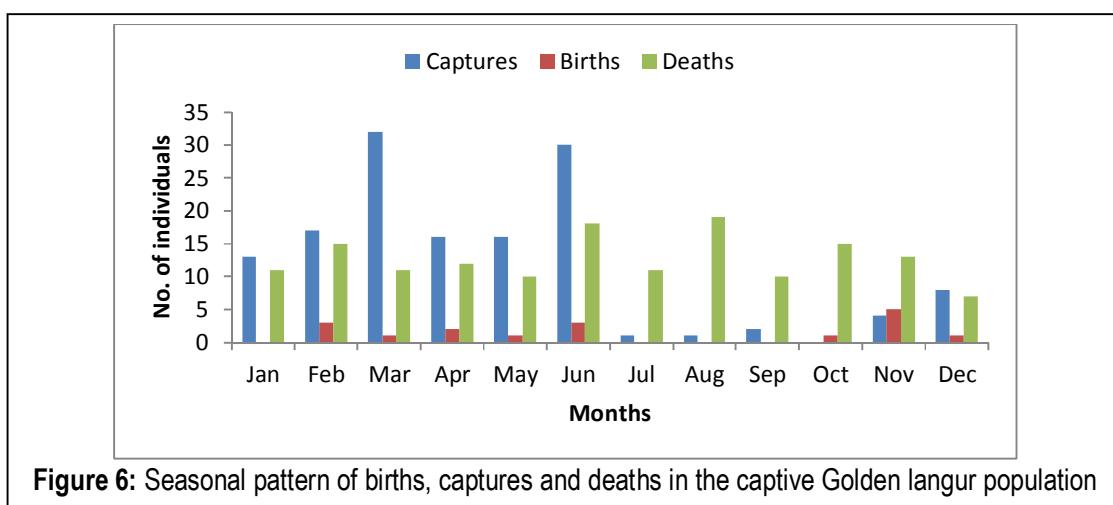
Captures, births and mortality

A total of 151 wild-born individuals have been brought into captivity (figure 3). Estimates of age at capture were available for 56 (37.1%) individuals, and the median age at capture was found to be 3.41 years (3.2 ± 2.25). The median time spent in captivity by all wild born individuals was 2 (3.72 ± 4.39) years.

A total of 17 births have been recorded between 1960 and 2013, of which parentage of 10 births were known. These births were contributed by 10 individuals (five males and five females), of which around 78% was contributed by 4 parents only. The median age of the captive born individuals was 2 years (4.35 ± 4.92).

About 94.1% (16) of the births were recorded in the first generation, while only one birth (NSN. 137) was recorded in the second generation. Breeding has been recorded in two zoos, Assam zoo (13) and Kanpur zoo (4). A total of 153 golden langur deaths have been recorded during 1960 to 2013. Infant mortality of 29.4% ($n=5$) was observed during the first year of life.

Figure 6 shows the seasonal pattern of captures, births and deaths. Most of the individuals were captured during the summer and pre-monsoon season (March–June). Most number of births was recorded in June and November, while deaths occurred during all the months with pronounced peaks during February, June, August and October.



Genetic Analysis

The analysis of genetic parameters of the captive population was not carried out due to the small number of captive births; a large proportion of which were of unknown parentage. Figure 7 summarizes the lineage of the captive born individuals of the Golden langur population in Indian zoos. The figure includes only those individuals which have reproduced. Reproductive activity was observed in the founder generation only with the exception of one offspring which was a first generation captive born individual. Multiple reproductive events were observed in 2 males and 2 females; all other individuals reproduced only once.

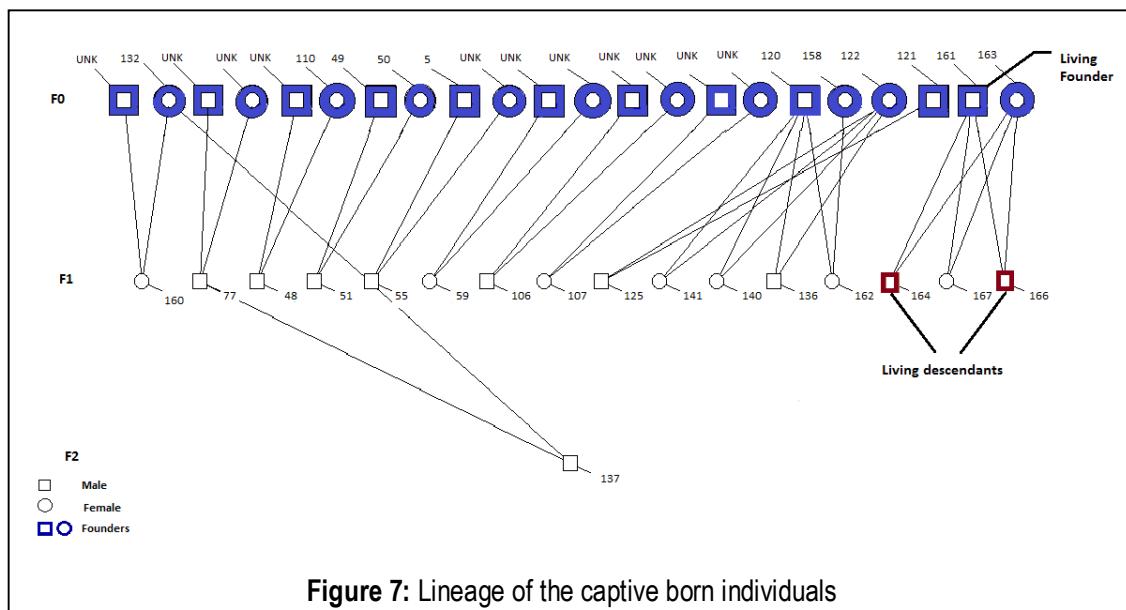


Figure 7: Lineage of the captive born individuals

Summary

Based on the analysis of data received from the holding zoo it is inferred that:

- The living population is maintained in an inappropriate social group at Assam State Zoo cum Botanical Garden.
- A large number of wild origin animals have entered the captive population. However; the contribution by wild origin animals to the gene pool has been limited with skewed founder representation.
- The population is characterized by low population growth rate and limited reproductive activity of captive bred animals as compared to the wild origin animals.
- Limitations of data quality in terms of dates of events (captures, births and deaths) and lineages rendered analysis and subsequent recommendations redundant.

Conclusion

The above observations suggest serious shortcomings in the husbandry practices being followed for maintaining the species in captivity. These may include features such as animal housing and enclosure enrichment, social structure of the animals, visitor induced stress and disease management. However detailed investigations on the above aspects need to be carried out to ensure the long term survival of the species in captivity. Additional animals will have to be brought into captivity to provide the necessary founding population needed to kick start the conservation breeding effort for this species; once the issues underlying the poor reproductive success in captivity have been addressed.

The species lives in troops comprising one to two males and multiple females. The social organization of the species must accordingly be maintained in captivity. It may not be possible to capture entire troops for conservation breeding, however; with appropriate socialization process the troop organization can be recreated in captive environments. This can be achieved by pooling together the single/pairs of animals received by way of rescue or planned captures to form viable social groups with appropriate socialization process.

With appropriate management interventions and modifications in the husbandry practices the species is capable of the rapid growth required to provide a demographically stable captive population. Once the population has achieved demographic stability the genetic diversity can be managed by regulation of mating choices and inclusion of additional founder animals as required. This will require all holding zoos to maintain complete records of all events in each individual's life history.

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Appendix I

Historical population of Golden langur (*Trachypithecus geei*) in captivity in Indian Zoos

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
1	1	Unnamed	F	????	Wild	Wild	India Assam Manas	~ 1960 01-Jun-60 06-Jul-67	Capture Transfer Release
2	2	Unnamed	M	????	Wild	Wild	India Assam	~ 1965 20-May-65 ????	Capture Transfer Death
3	3	Unnamed	M	????	Wild	Wild	India Assam	~ 1966 14-Mar-66 06-Apr-66	Capture Transfer Death
4	4	Unnamed	M	????	Wild	Wild	India Assam	~ 1966 14-Mar-66 ????	Capture Transfer Death
5	5	Unnamed	M	????	Wild	Wild	India Assam	~ 1966 14-Mar-66 ????	Capture Transfer Death
6	6	Unnamed	M	~ 1963	Wild	Wild	India Delhi Ahmedabad	~ 1968 20-Jan-68 25-Jan-75 18-Aug-76	Capture Transfer Transfer Death
7	7	Unnamed	F	????	Wild	Wild	India Delhi	~ 1968 02-Apr-68 02-Nov-68	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
8	8	Unnamed	F	????	Wild	Wild	India Delhi	~ 1968 02-Apr-68 24-Nov-68	Capture Transfer Death
9	9	Unnamed	F	????	Wild	Wild	India Delhi	~ 1969 11-Aug-69 23-Jun-71	Capture Transfer Death
10	10	Unnamed	F	~ 1964	Wild	Wild	India Assam	~ 1969 18-Dec-69 02-Jul-80	Capture Transfer Death
11	11	Unnamed	F	~ 1964	Wild	Wild	India Assam	~ 1969 18-Dec-69 07-Aug-72	Capture Transfer Death
12	12	Unnamed	F	????	Wild	Wild	India Assam	~ 1970 24-Mar-70 ????	Capture Transfer Death
13	13	Unnamed	F	????	Wild	Wild	India Assam	~ 1970 24-Mar-70 ????	Capture Transfer Death
14	14	Unnamed	M	????	Wild	Wild	India Assam	~ 1970 24-Mar-70 ????	Capture Transfer Death
15	15	Unnamed	M	????	Wild	Wild	India Assam	~ 1970 24-Mar-70 ????	Capture Transfer Death
16	16	Unnamed	M	????	Wild	Wild	India Assam	~ 1970 24-Mar-70 11-Sep-70	Capture Transfer Death
17	17	Unnamed	M	????	Wild	Wild	India Assam	~ 1970 24-Mar-70 07-Nov-71	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
18	18	Unnamed	M	~ 1962	Wild	Wild	India Assam	~ 1970 11-Apr-70 ????	Capture Transfer Death
19	19	Unnamed	F	~ 1962	Wild	Wild	India Assam	~ 1970 11-Apr-70 01-Jul-80	Capture Transfer Death
20	20	Unnamed	M	????	Wild	Wild	India Assam	~ 1970 21-Apr-70 29-Aug-70	Capture Transfer Death
21	21	Unnamed	M	????	Wild	Wild	India Calcutta	~ 1971 ~ Mar 1971 ~ Jan 1980	Capture Transfer Death
22	22	Unnamed	M	????	Wild	Wild	India Calcutta	~ 1971 ~ Mar 1971 ~ Feb 1972	Capture Transfer Death
23	23	Unnamed	M	????	Wild	Wild	India Calcutta	~ 1971 ~ Mar 1971 05-Aug-73	Capture Transfer Death
24	24	Unnamed	F	????	Wild	Wild	India Calcutta	~ 1971 ~ Mar 1971 ~ Mar 1972	Capture Transfer Death
25	25	Unnamed	F	????	Wild	Wild	India Calcutta	~ 1971 ~ Mar 1971 09-Jun-77	Capture Transfer Death
26	26	Unnamed	F	????	Wild	Wild	India Calcutta	~ 1971 ~ Mar 1971 ~ Feb 1979	Capture Transfer Death
27	27	Unnamed	M	????	Wild	Wild	India Assam	~ 1971 13-Mar-71 30-Sep-71	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
28	28	Unnamed	M	????	Wild	Wild	India Assam Manas	~ 1971 13-Mar-71 25-Sep-71	Capture Transfer Release
29	29	Unnamed	F	????	Wild	Wild	India Assam Manas	~ 1971 13-Mar-71 25-Sep-71	Capture Transfer Release
30	30	Unnamed	M	????	Wild	Wild	India Nandankanan	~ 1971 ~ Apr 1971 ~ Dec 1971	Capture Transfer Death
31	31	Unnamed	M	????	Wild	Wild	India Calcutta	~ 1971 ~ Dec 1971 18-Jul-74	Capture Transfer Death
32	32	Unnamed	?	????	Wild	Wild	India Trivandru	~ 1972 20-Jun-72 22-Dec-72	Capture Transfer Death
33	33	Unnamed MIG12-28968846 200001	F	~ Dec 1970	Wild	Wild	India Assam Kanpur	~15 dec 1972 16-Dec-72 17-Oct-79 04-Sep-80	Capture Transfer Transfer Death
34	34	Unnamed MIG12-28968847 200002	M	~ 1969	Wild	Wild	India Assam	~ 8 jan 1973 09-Jan-73 04-Oct-76	Capture Transfer Death
35	35	Unnamed	M	~ 1973	Wild	Wild	India Assam Chatbir Z	~ 1973 09-Jan-73 21-Aug-75 10-Mar-80	Capture Transfer Transfer Death
36	36	Unnamed MIG12-28968863 200003	M	~ 1974	Wild	Wild	India Assam	~ 1976 21-Feb-76 04-Apr-76	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
37	37	Unnamed MIG12-28968864 200005	M	~ 1970	Wild	Wild	India Assam Chatbir Z	~ 1976 02-Apr-76 29-Jul-78 02-Aug-78	Capture Transfer Transfer Death
38	38	Unnamed	F	????	Wild	Wild	India Assam Chatbir Z	~ 1976 02-Apr-76 29-Jul-78 02-Aug-78	Capture Transfer Transfer Death
39	39	Unnamed	F	????	Wild	Wild	India Assam	~ 1976 02-Apr-76 11-Nov-76	Capture Transfer Death
40	40	Unnamed	M	????	Wild	Wild	India Assam	~ 1976 28-Apr-76 26-Jun-76	Capture Transfer Death
41	41	Unnamed	M	????	Wild	Wild	India Assam	~ 1976 28-Apr-76 22-Apr-78	Capture Transfer Death
42	42	Unnamed	F	????	Wild	Wild	India Assam	~ 1976 28-Apr-76 07-Jul-76	Capture Transfer Death
43	43	Unnamed	F	????	Wild	Wild	India Assam	~ 1976 28-Apr-76 23-Jun-76	Capture Transfer Death
44	44	Unnamed	M	????	Wild	Wild	India Assam Unknown	~ 1976 21-May-76 26-May-76	Capture Transfer Itf
45	45	Unnamed	M	????	Wild	Wild	India Assam Unknown	~ 1976 21-May-76 26-May-76	Capture Transfer Itf

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
46	46	Unnamed	F	????	Wild	Wild	India Assam Unknown	~ 1976 21-May-76 26-May-76	Capture Transfer Itf
47	47	Unnamed	F	????	Wild	Wild	India Assam Unknown	~ 1976 21-May-76 26-May-76	Capture Transfer Itf
48	48	Unnamed MIG12-28968849 200006	M	29 May 1976	Unk	10	Assam	29-may-76 19-Feb-84	Birth Death
49	49	Unnamed	M	????	Wild	Wild	India Kanpur	06-nov-74 ???? ~ 1977	Capture Transfer Death
50	50	Unnamed	F	????	Wild	Wild	India Kanpur	~ 1974 ~ 1974 04-Sep-80	Capture Transfer Death
51	51	Unnamed	M	30 Jun 1976	49	50	Kanpur	30-Jun-76 ~ 1978	Birth Death
52	52	Unnamed MIG12-28968848 200004	M	~ 1972	Wild	Wild	India Assam Chatbir Z	~ 1976 07-Mar-76 03-Mar-77 22-Sep-77	Capture Transfer Transfer Death
53	53	Unnamed	F	????	Wild	Wild	India Assam Chatbir Z	~ 1976 07-Mar-76 03-Mar-77 21-May-77	Capture Transfer Transfer Death
54	54	Unnamed	F	????	Wild	Wild	India Assam Chatbir Z	~ 1976 07-Mar-76 03-Mar-77 23-Dec-79	Capture Transfer Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
55	55	Unnamed MIG12-28968850 200007	M	27 Dec 1977	5	UNK	Assam	27-Dec-77 06-Jan-85	Birth Death
56	56	Unnamed	M	????	Wild	Wild	India Assam	~ 1978 18-Mar-78 01-Apr-82	Capture Transfer Death
57	57	Unnamed	M	????	Wild	Wild	India Assam	~ 1978 18-Mar-78 07-May-78	Capture Transfer Death
58	58	Unnamed	F	????	Wild	Wild	India Assam	~ 1978 18-Mar-78 26-May-78	Capture Transfer Death
59	59	Unnamed	F	3 Mar 1979	Unk	Unk	Assam	03-mar-79 24-Mar-84	Birth Death
60	60	Unnamed	F	????	Wild	Wild	India Lucknow Kanpur	???? ???? 09-Dec-79 31-Aug-80	Capture Transfer Transfer Death
61	61	Unnamed	F	????	Wild	Wild	India Assam	~ 1980 11-Feb-80 08-Feb-82	Capture Transfer Death
62	62	Unnamed	M	????	Wild	Wild	India Assam	~ 1980 25-Feb-80	Capture Itf
63	63	Unnamed	M	????	Wild	Wild	India Assam	~ 1980 25-Feb-80 08-Aug-82	Capture Transfer Death
64	64	Unnamed	F	????	Wild	Wild	India Assam	~ 1980 25-Feb-80 01-Jan-81	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
65	65	Unnamed	F	????	Wild	Wild	India Assam	~ 1980 25-Feb-80 14-Apr-80	Capture Transfer Death
66	66	Unnamed	F	????	Wild	Wild	India Assam	~ 1980 25-Feb-80 11-Apr-80	Capture Transfer Death
67	67	Unnamed	F	????	Wild	Wild	India Assam	~ 1980 25-Feb-80 08-Aug-82	Capture Transfer Death
68	68	Unnamed	M	????	Wild	Wild	India Assam	~ 1980 03-Jun-80	Capture Itf
69	69	Unnamed	M	????	Wild	Wild	India Assam	~ 1980 03-Jun-80 12-Nov-85	Capture Transfer Death
70	70	Unnamed	F	????	Wild	Wild	India Kanpur	~ 1980 ~ Jun 1980 30-Sep-80	Capture Transfer Death
71	71	Unnamed	M	????	Wild	Wild	India Kanpur	~ 1980 ~ Jun 1980 ~ Oct 1980	Capture Transfer Death
72	72	Unnamed	M	????	Wild	Wild	India Kanpur	~ 1980 ~ Jun 1980 ????	Capture Transfer Death
73	73	Unnamed	M	????	Wild	Wild	India Kanpur	~ 1980 ~ Jun 1980 01-Apr-82	Capture Transfer Death
74	74	Unnamed	F	????	Wild	Wild	India Assam	~ 1981 04-Mar-81 02-Oct-85	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
75	75	Unnamed MIG12-28968865 200009	F	~ 1981	Wild	Wild	India Assam	~ 1981 04-Mar-81 29-Dec-85	Capture Transfer Death
76	76	Sheru	M	9 Oct 1982	Unk	Unk	Kanpur	09-oct-82 15-Jul-99	Birth Death
77	77	Unnamed	M	????	Wild	Wild	India Chatbir Z	~ 1982 22-Jun-82 16-Apr-83	Capture Transfer Death
78	78	Unnamed	F	????	Wild	Wild	India Chatbir Z	~ 1982 22-Jun-82 ????	Capture Transfer Death
79	79	Unnamed MIG12-28968867 2000010	F	~ 1985	Wild	Wild	India Assam	~ 1985 22-Jan-85 24-Apr-87	Capture Transfer Death
80	80	Unnamed	F	????	Wild	Wild	India Assam	~ 1985 22-Jan-85 14-Jun-87	Capture Transfer Death
81	81	Unnamed MIG12-28968861 2000012	F	~ Jan 1985	Wild	Wild	India Assam	~ 1985 25-Jan-85 01-Jan-88	Capture Transfer Death
82	82		F	????	Wild	Wild	India Assam	~ 1985 10-Feb-85 24-Feb-88	Capture Transfer Death
83	83	Unnamed MIG12-28968860 2000013	F	~ 1985	Wild	Wild	India Assam	~ 1985 18-Feb-85 25-Jul-88	Capture Transfer Death
84	84	Unnamed MIG12-28968858 2000015	F	~ 1985	Wild	Wild	India Assam	~ 1985 14-Mar-85 14-Oct-88	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
85	85	Unnamed MIG12-28968859 2000014	F	~ 1985	Wild	Wild	India Assam	~ 1985 14-Mar-85 25-Jul-88	Capture Transfer Death
86	86	Unnamed MIG12-28968857 2000016	F	~ 1985	Wild	Wild	India Assam	~ 1985 22-May-85 14-Feb-89	Capture Transfer Death
87	87	Unnamed	F	????	Wild	Wild	India Assam	~ 1985 22-May-85 22-Feb-90	Capture Transfer Death
88	88	Unnamed	M	????	Wild	Wild	India Trivandrum	~ 1985 03-Feb-85	Capture Itf
89	89	Unnamed	F	????	Wild	Wild	India Trivandrum	~ 1985 03-Jun-85 23-May-88	Capture Transfer Death
90	90	Unnamed	M	????	Wild	Wild	India Trivandrum	~ 1985 25-Nov-85 22-Jul-87	Capture Transfer Death
91	91	Unnamed	M	~ 1981	Wild	Wild	India Assam	~ 1985 17-Dec-85 10-Aug-89	Capture Transfer Death
92	92	Unnamed	M	~ 1981	Wild	Wild	India Assam	~ 1985 17-Dec-85 08-Nov-87	Capture Transfer Death
93	93	Unnamed	M	~ 1981	Wild	Wild	India Assam	~ 1985 17-Dec-85 02-Jan-88	Capture Transfer Death
94	94	Unnamed	F	~ 1981	Wild	Wild	India Assam	~ 1985 17-Dec-85 ????	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
95	95	Unnamed	F	~ 1983	Wild	Wild	India Assam Nandankanan	~ 1986 18-Mar-86 15-Mar-89 09-Sep-95	Capture Transfer Transfer Death
96	96	Unnamed	F	~ 1983	Wild	Wild	India Assam Nandankanan	~ 1986 18-Mar-86 15-Mar-89 01-Jun-90	Capture Transfer Transfer Death
97	97	Sudha	F	????	Wild	Wild	India Hyderabad	~ 1986 26-Jan-86 25-Aug-86	Capture Transfer Death
98	98	Radha	F	????	Wild	Wild	India Hyderabad	~ 1986 26-Jan-86 27-Mar-92	Capture Transfer Death
99	99	Vali	M	????	Wild	Wild	India Hyderabad	~ 1986 29-Dec-86 29-Oct-87	Capture Transfer Death
100	100	Unnamed	F	~ 1983	Wild	Wild	India Assam	~ 1987 04-May-87 03-Jul-90	Capture Transfer Death
101	101	Unnamed	F	~ 1983	Wild	Wild	India Assam	~ 1987 04-May-87 11-May-87	Capture Transfer Death
102	102	Unnamed	F	~ 1983	Wild	Wild	India Assam	~ 1987 04-May-87 10-Jul-90	Capture Transfer Death
103	103	Unnamed	M	~ 1983	Wild	Wild	India Assam	~ 1987 03-Aug-87 04-Oct-89	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
104	104	Unnamed	M	????	Wild	Wild	India Calcutta	???? ~ Nov 1987 ~ Oct 1997	Capture Transfer Death
105	105	Unnamed	M	8 Feb 1988	Unk	Unk	Assam	08-feb-88 24-Feb-88	Birth Death
106	106	Unnamed	F	10 Feb 1988	Unk	Unk	Assam	10-feb-88 11-Feb-88	Birth Death
107	107	Unnamed	F	????	Wild	Wild	India Assam	~ 1988 06-May-88 10-May-88	Capture Transfer Death
108	108	Unnamed	F	????	Wild	Wild	India Assam	~ 1988 06-May-88 29-Oct-90	Capture Transfer Death
109	109	Unnamed	F	????	Wild	Wild	India Assam	~ 1988 06-May-88 15-Jan-91	Capture Transfer Death
110	110	Unnamed	M	????	Wild	Wild	India Assam	~ 1988 06-May-88 18-Dec-90	Capture Transfer Death
111	111	Unnamed	M	????	Wild	Wild	India Assam	~ 1988 06-May-88 30-Sep-88	Capture Transfer Death
112	112	Unnamed	M	????	Wild	Wild	India Assam	~ 1988 06-May-88 15-Mar-90	Capture Transfer Death
113	113	Unnamed	F	~ 1984	Wild	Wild	India Assam	~ 1988 15-Sep-88 22-Jun-91	Capture Transfer Death
114	114	Unnamed	M	~ 1985	Wild	Wild	India Assam	~ 1988 26-Nov-88 18-Apr-92	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
115	115	Unnamed	F	~ 1985	Wild	Wild	India Assam	~ 1988 26-Nov-88 20-Jan-92	Capture Transfer Death
116	116	Unnamed	M	????	Wild	Wild	India Bannergha	???? ~ 1988 25-Feb-94	Capture Transfer Death
117	117	Unnamed	F	????	Wild	Wild	India Bannergha	???? ~ 1988 ????	Capture Transfer Death
118	118	Unnamed	M	~ 1986	Wild	Wild	India Assam Nandankan	~ 1989 16-Jan-89 18-Sep-91 27-Aug-92	Capture Transfer Transfer Death
119	119	Samunda MIG12-28968856 2000018	M	~ 1984	Wild	Wild	India Assam	~ 1989 15-Mar-89 20-Sep-12	Capture Transfer Death
120	120	Unnamed	M	~ 1984	Wild	Wild	India Assam	~ 1989 15-Mar-89 30-Aug-92	Capture Transfer Death
121	121	Unnamed	F	~ 1984	Wild	Wild	India Assam	~ 1989 15-Mar-89 11-Oct-99	Capture Transfer Death
122	122	Unnamed	F	~ Jun 1986	Wild	Wild	India Assam	~ 1989 08-Apr-89 19-Oct-94	Capture Transfer Death
123	123	Unnamed	F	????	Wild	Wild	India Assam	~ 1989 29-May-89 30-May-89	Capture Transfer Death
124	124	Unnamed	M	21 Jun 1991	121	122	Assam	21-Jun-91 07-May-92	Birth Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
125	125	Hanuman	M	????	Wild	Wild	India Hyderabad	~ 1990 05-Mar-90 23-Nov-94	Capture Transfer Death
126	126	Sita	F	????	Wild	Wild	India Hyderabad	~ 1990 05-Mar-90 24-Feb-96	Capture Transfer Death
127	127	Unnamed	F	~ 1987	Wild	Wild	India Assam	~ 1992 20-May-92 04-May-94	Capture Transfer Death
128	128	Unnamed	F	~ 1987	Wild	Wild	India Assam	~ 1992 20-May-92 ????	Capture Transfer Death
129	129	Shakuntala	F	????	Wild	Wild	India Hyderabad	~ 1992 20-Feb-92 14-Jan-01	Capture Transfer Death
130	130	Shasi	F	????	Wild	Wild	India Hyderabad	~ 1992 28-Feb-92 23-Mar-01	Capture Transfer Death
131	131	Dolly	F	~ 1989	Wild	Wild	India Patna Kanpur	~ 1989 ???? 05-Aug-92 26-Nov-01	Capture Transfer Transfer Death
132	132	Rolly	F	~ 1991	Wild	Wild	India Patna Kanpur	~ 1991 ???? 05-Aug-92 27-Jan-94	Capture Transfer Transfer Death
133	133	Unnamed JBMPO1	M	~ Jun 1990	Wild	Wild	India Bokaro	~ 1992 20-Jun-92 ~ 2004	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
134	134	Unnamed	M	~ 1986	Wild	Wild	India Assam	14-apr-93 15-Apr-93 11-Oct-96	Capture Transfer Death
135	135	Unnamed	M	10 Nov 1993	120	122	Assam	10-Nov-93 10-Nov-93	Birth Death
136	136	Unnamed	M	4 Feb 1994	77	132	Kanpur	04-Feb-94 21-Mar-95	Birth Death
137	137	Kanal	M	????	Wild	Wild	India Ahmedabad Hyderabad	???? ???? 20-Oct-94 01-Feb-00	Capture Transfer Transfer Death
138	138	Unnamed	M	????	Wild	Wild	India Patna Nandankanan	???? ???? 24-Mar-95 08-Aug-96	Capture Transfer Transfer Death
139	139	Unnamed	F	28 Nov 1996	120	122	Assam	28-Nov-96 28-Nov-96	Birth Death
140	140	Unnamed	F	2 Nov 1997	120	122	Assam	02-Nov-97 04-Nov-06	Birth Death
141	141	Unnamed JMP02	F	????	Wild	Wild	India Bokaro	~ 1992 20-Jun-92 17-Oct-92	Capture Transfer Death
142	142	Unnamed JMP03	F	????	Wild	Wild	India Bokaro	~ 1992 20-Jun-92 20-Oct-92	Capture Transfer Death
143	143	Unnamed	?	????	Wild	Wild	India Ahmedabad	~ 1969 25-Nov-69 15-Jan-79	Capture Transfer Death
144	144	Unnamed	M	~ 1990	Wild	Wild	India Borivili	~ 1992 21-Nov-92 03-May-97	Capture Transfer Death

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
145	145	Unnamed	M	~ 1990	Wild	Wild	India Borivili	~ 1992 21-Nov-92 19-Feb-95	Capture Transfer Death
146	146	Unnamed	F	~ 1990	Wild	Wild	India Borivili	~ 1992 21-Nov-92 30-Jul-96	Capture Transfer Death
147	147	Unnamed	M	~ 1990	Wild	Wild	India Borivili	~ 1992 21-Nov-92 04-Oct-97	Capture Transfer Death
148	148	Unnamed	F	????	Wild	Wild	India Ahmedabad	~ 1972 21-Jan-72 07-Jun-90	Capture Transfer Death
149	149	Unnamed	F	~ 1985	Wild	Wild	India Ahmedabad	~ 1985 20-Sep-85 04-Dec-93	Capture Transfer Death
150	150	Unnamed	F	~ 1982	Wild	Wild	India Tripura Trishna	~ 1989 11-Jun-89 01-Feb-03	Capture Transfer Release
151	151	Unnamed	F	????	Wild	Wild	India Kanpur	20-jan-75 20-Jan-75 02-Oct-80	Capture Transfer Death
152	152	Unnamed	F	????	Wild	Wild	India Gangtok Kanpur	???? ???? ~ 1979 16-Aug-80	Capture Transfer Transfer Death
153	153	Unnamed	M	????	Wild	Wild	India Gangtok Kanpur	???? ???? ~ 1979 26-Jun-87	Capture Transfer Transfer Death
154	154	Unnamed MIG12-28968866 200008	F	~ 1980	Wild	Wild	India Assam	25-feb-80 25-Feb-80	Capture Transfer

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
								22-Aug-85	Death
155	155		M	????	Wild	Wild	India Hyderabad	???? 29-Dec-86 14-Jan-01	Capture Transfer Death
156	156	Unnamed	F	~ 1985	Wild	Wild	India Assam	14-jun-87 14-Jun-87 14-Jun-87	Capture Transfer Death
157	157	Unnamed MIG12-28968869 2000017	F	~ 1987	Wild	Wild	India Assam	29-may-89 29-May-89 25-Dec-98	Capture Transfer Death
158	158	Hira	M	????	Wild	Wild	India Bokaro	20-jun-92 20-Jun-92 12-Feb-05	Capture Transfer Death
159	159	Unnamed	M	24 Apr 1993	Unk	132	Kanpur	24-apr-93 25-Apr-93	Birth Death
160	160	Ramunda MIG12-28968855 2000020 0006B761F0	M	~ 1995	Wild	Wild	India Assam	~ Apr 2003 22-Apr-03	Capture Transfer
161	161	Miranda MIG12-28968862 2000019	M	2 Nov 1997	120	158	Assam	02-Nov-97 04-Nov-06	Birth Death
162	162	Chameli MIG12-28968854 2000021	F	~ 2000	Wild	Wild	India Assam	09-apr-05 09-Apr-05 15-Feb-12	Capture Transfer Death
163	163	Joon MIG12-28968853 2000022 0006B71796	M	3 Nov 2006	161	163	Assam	03-Nov-06	Birth
164	164	Ramu MIG12-28968851 2000023 0006B769A3	M	~ 2005	Wild	Wild	India Assam	03-jul-07 03-Jul-07	Capture Transfer

Sl. No.	National Studbook No.	House Name Global Accession No. Local Identifiers Transponder No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
165	165	Moon 0006B715ED	M	4 Apr 2008	161	163	Assam	04-Apr-08	Birth
166	166	Unnamed MIG12-28968845 2000025	F	30 Jun 2010	161	163	Assam	30-Jun-10 06-Aug-10	Birth Death
167	167	Uma FBY12-00085 2000026 0006B71EB7	F	~ 2004	Wild	Wild	India Assam	13-feb-11 13-Feb-11	Capture Transfer
168	168	Aivey FBY12-00092 2000027 0006CDE41B	F	~ Dec 200	8 Wild	Wild	India Assam	~ 2011 04-Dec-11 18-Aug-13	Capture Transfer Death

Appendix II

Living population of Golden langur (*Trachypithecus geei*) in captivity in Indian Zoos

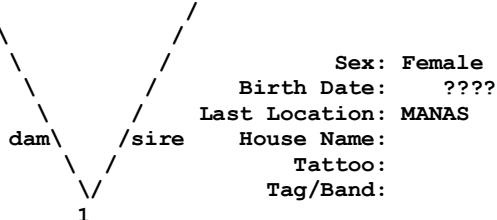
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1.	163	Joon MIG12-28968853 2000022 0006B71796	M	3 Nov 2006	161	163	Assam	03-Nov-06	Birth
2.	164	Ramu MIG12-28968851 2000023 0006B769A3	M	~ 2005	Wild	Wild	India Assam	03-jul-07 03-Jul-07	Capture Transfer
3.	165	Moon 0006B715ED	M	4 Apr 2008	161	163	Assam	04-Apr-08	Birth
4.	166	Unnamed MIG12-28968845 2000025	F	30 Jun 2010	161	163	Assam	30-Jun-10 06-Aug-10	Birth Death
5.	167	Uma FBY12-00085 2000026 0006B71EB7	F	~ 2004	Wild	Wild	India Assam	13-feb-11 13-Feb-11	Capture Transfer

Appendix III

Pedigree report of Golden langur in Indian zoos

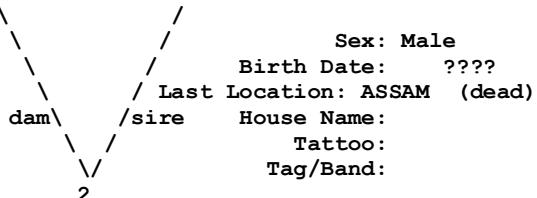
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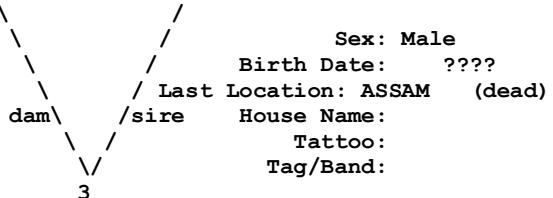
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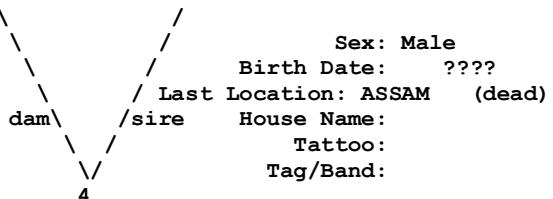
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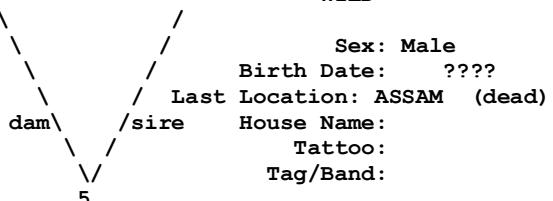
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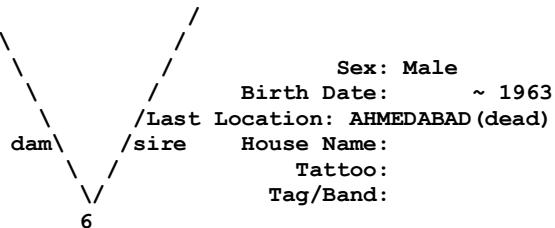


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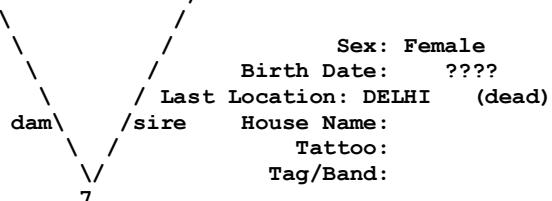


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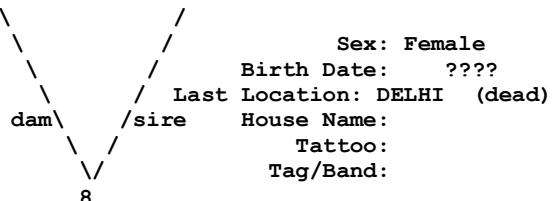


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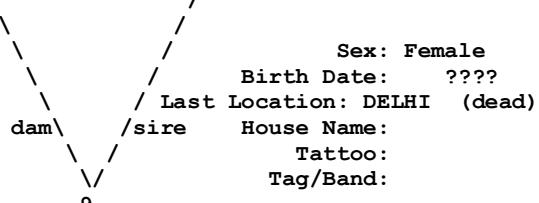


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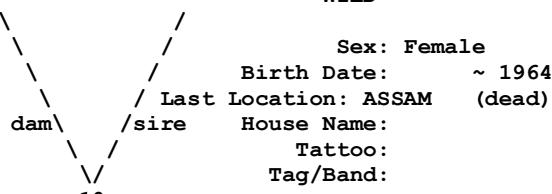


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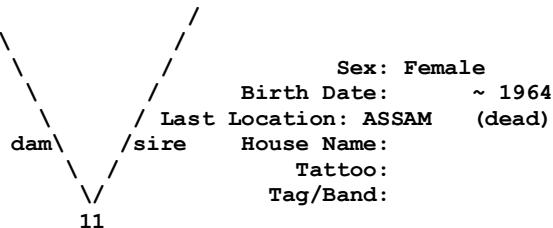


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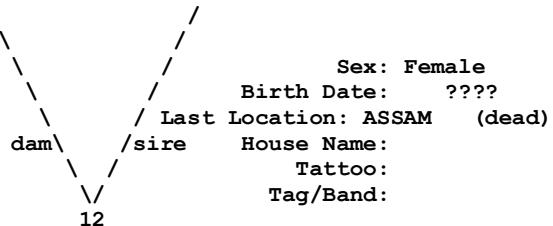


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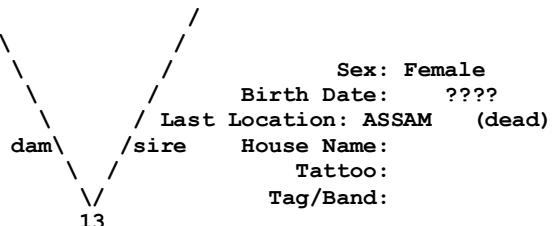


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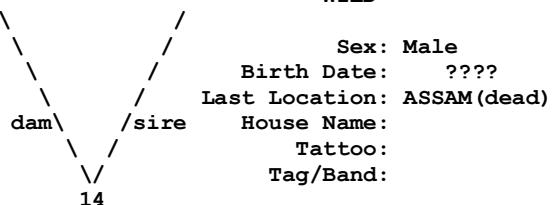


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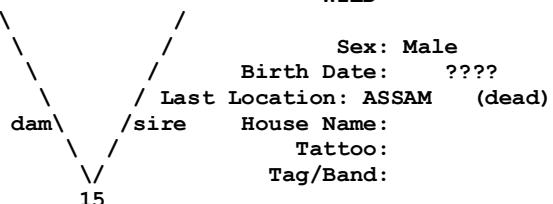


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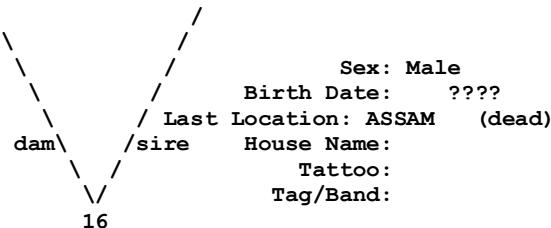


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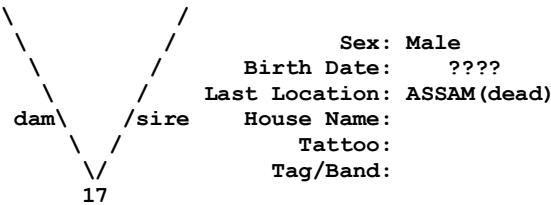


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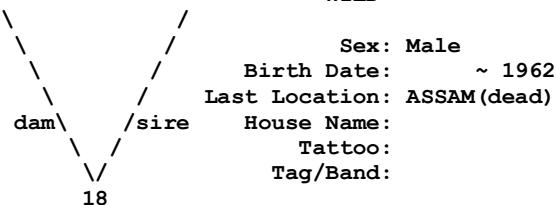


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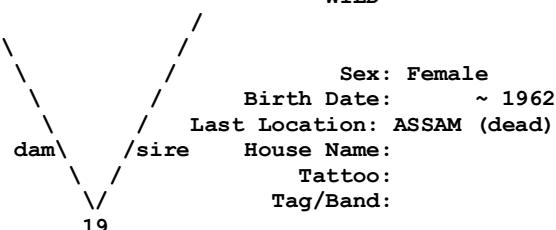


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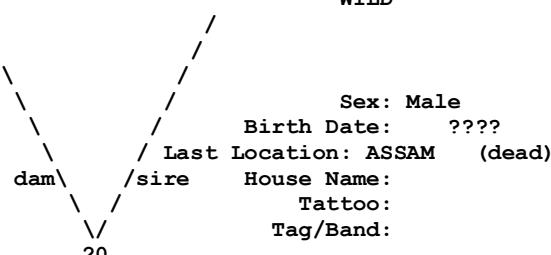


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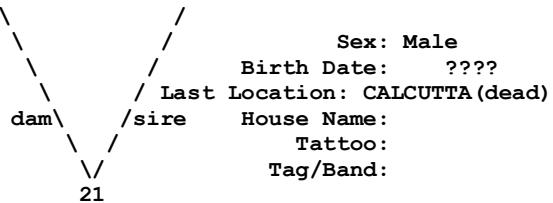


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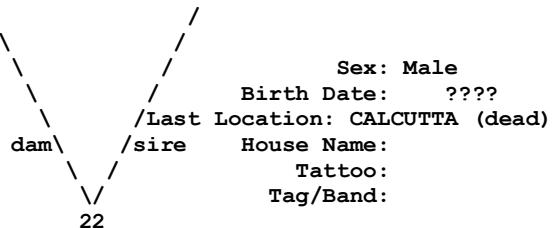


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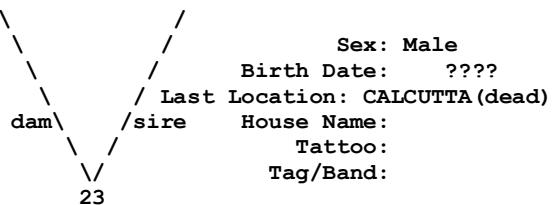


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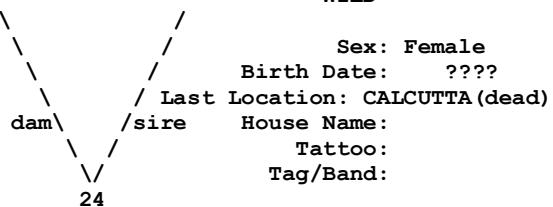


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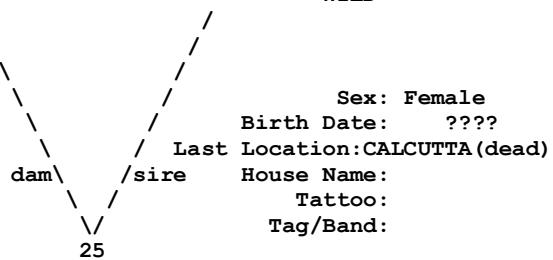


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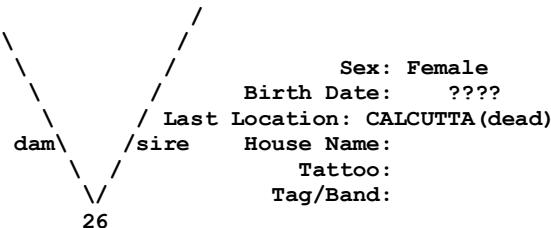


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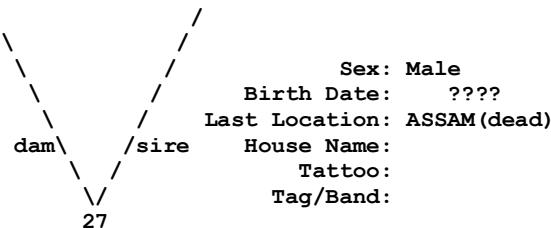


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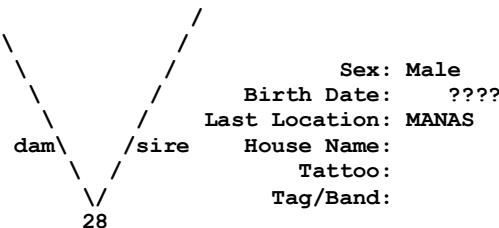


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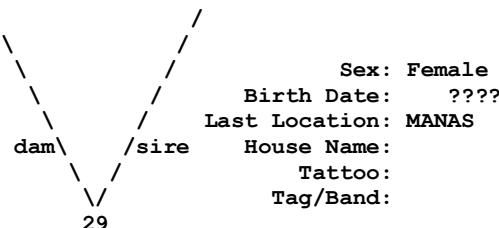


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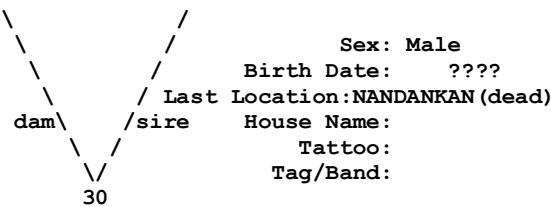


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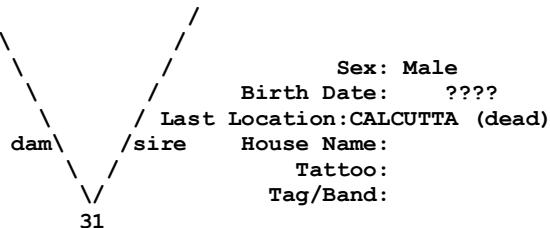


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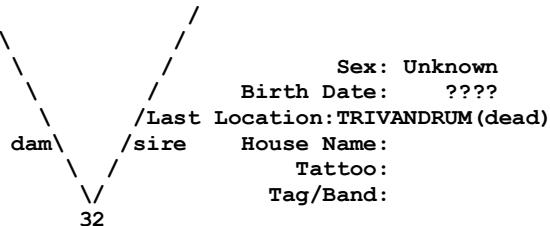


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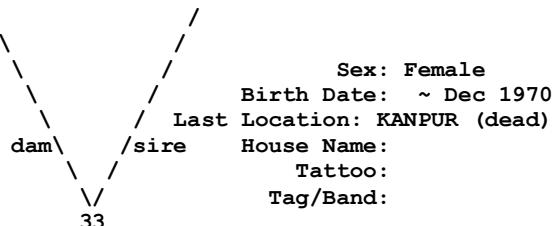


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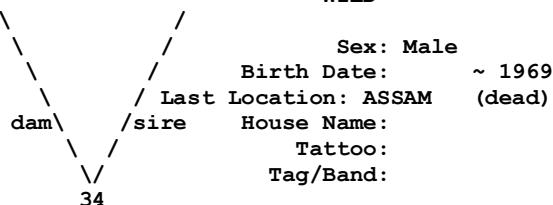


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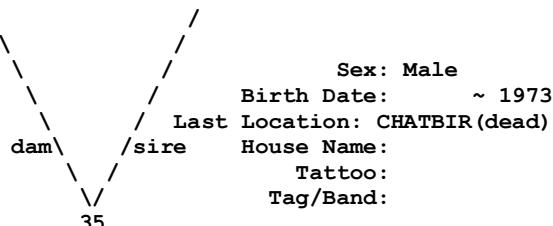


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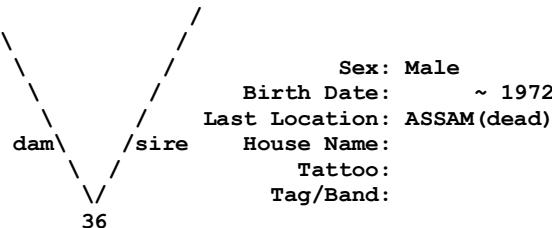


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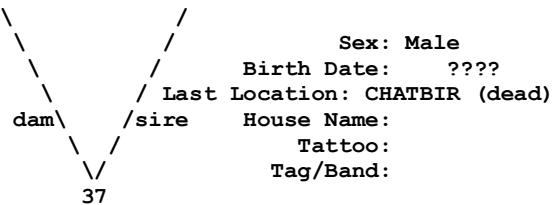


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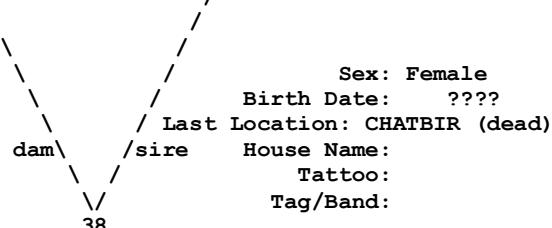


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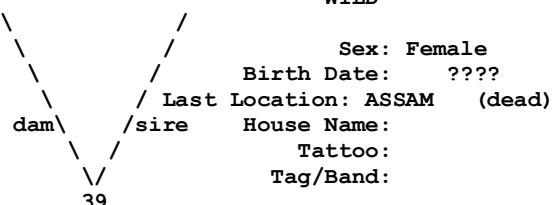


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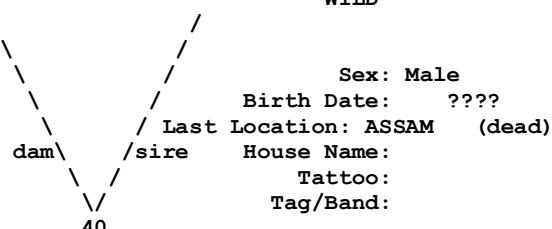


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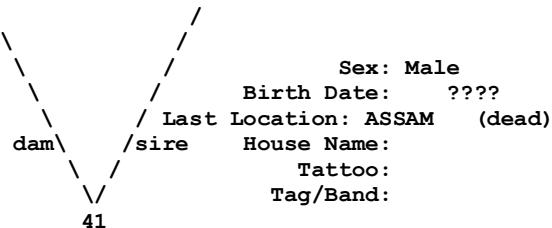


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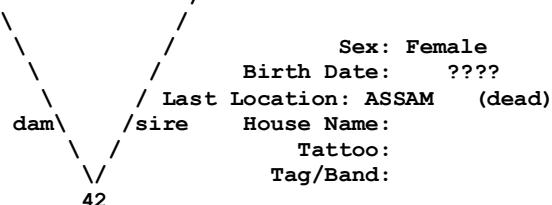


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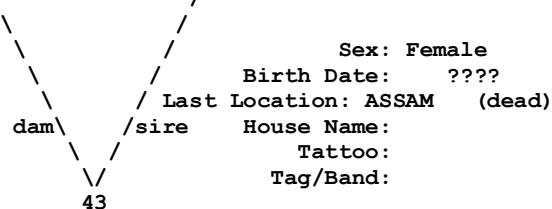


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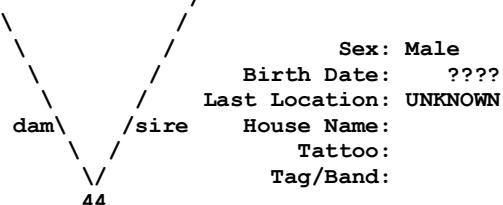


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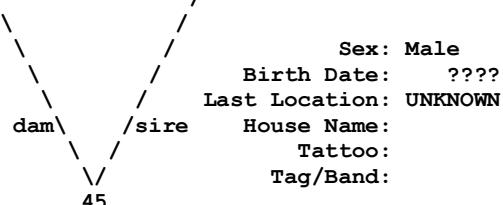


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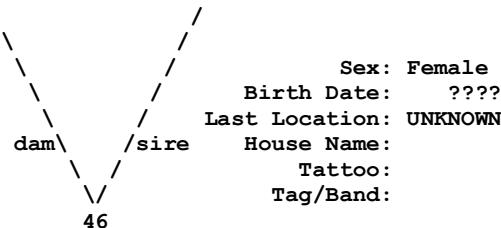


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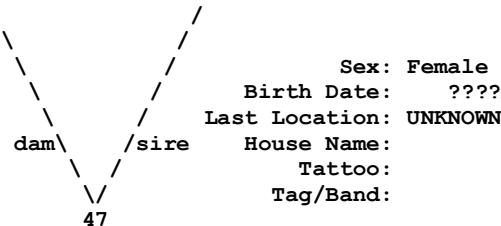


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Studbook Number: 47

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WILD



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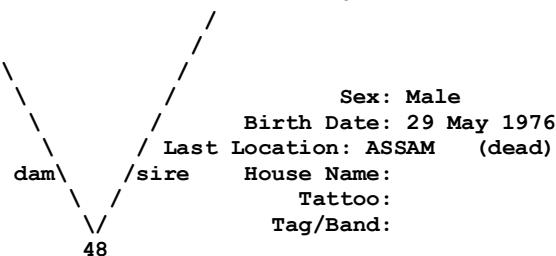
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WILD



MULTA1



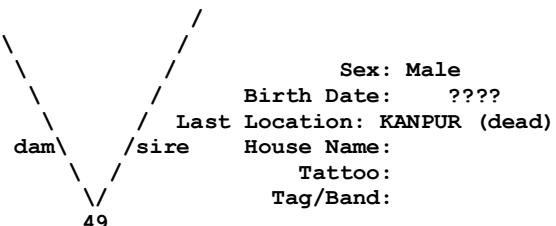
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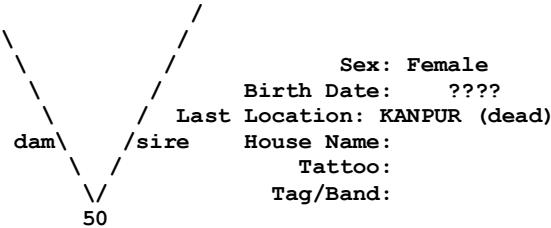


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WILD



50

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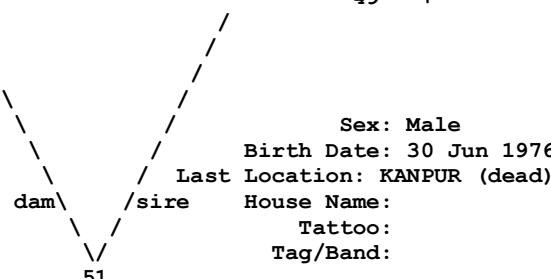
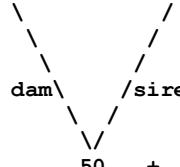
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WILD

WILD



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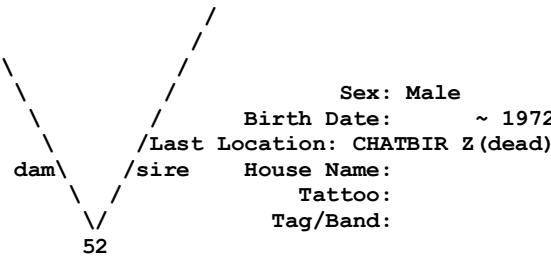
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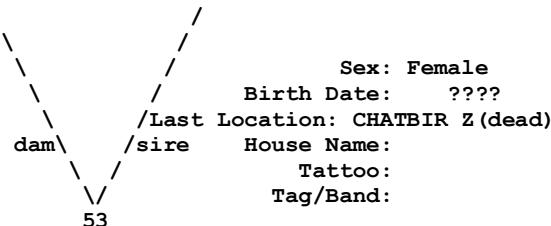


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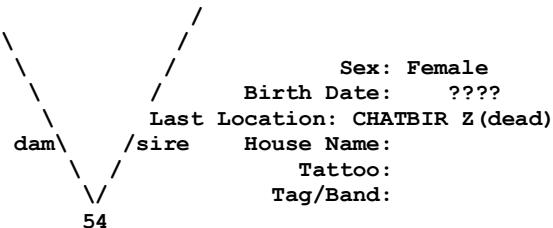


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 54

WILD

WILD



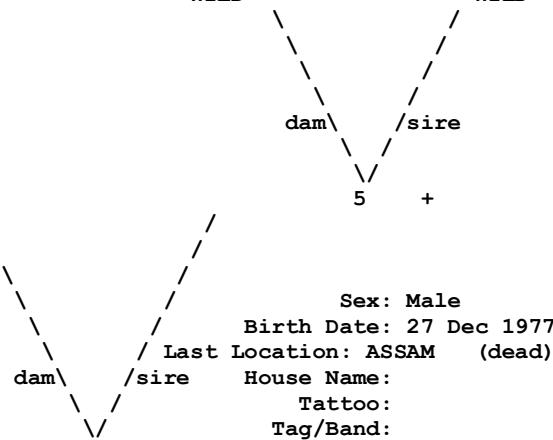
Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 55

MULTA2

WILD

WILD



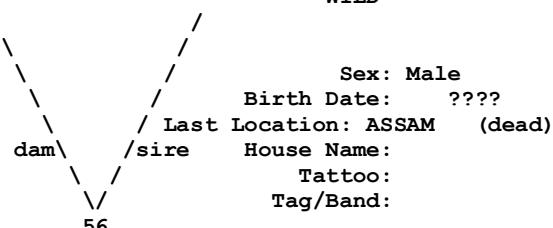
+ Wild-caught...

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 56

WILD

WILD

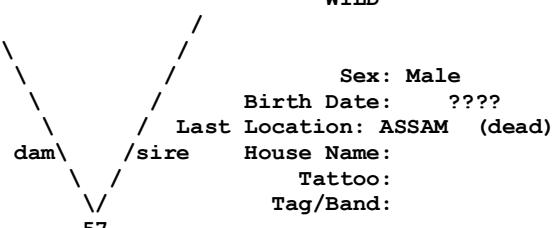


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 57

WILD

WILD

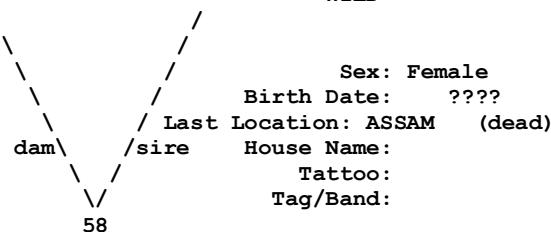


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 58

WILD

WILD

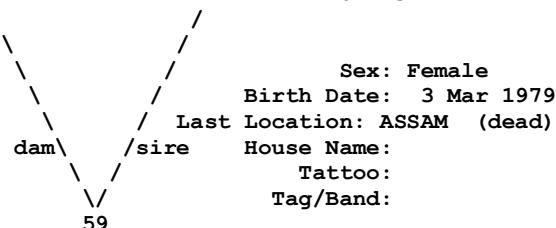


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 59

MULTA2

MULTA3

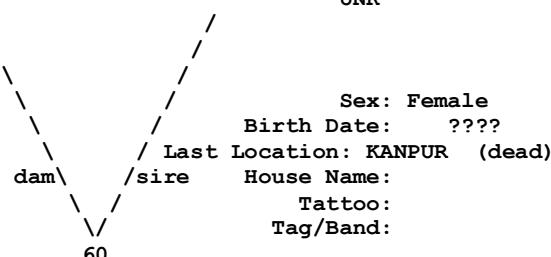


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 60

UNK

UNK

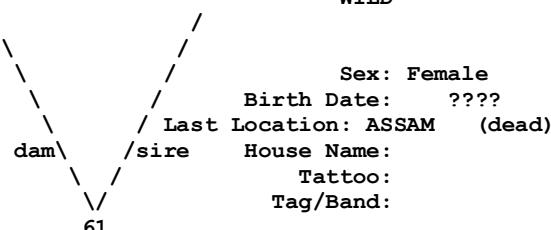


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 61

WILD

WILD

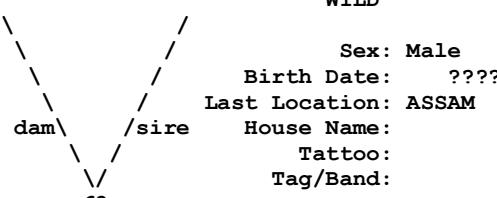


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 62

WILD

WILD



Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 63

WILD

WILD

Sex: Male
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

dam /sire

63

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 64

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

dam /sire

64

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 65

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

dam /sire

65

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 66

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

dam /sire

66

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 67

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

dam /sire

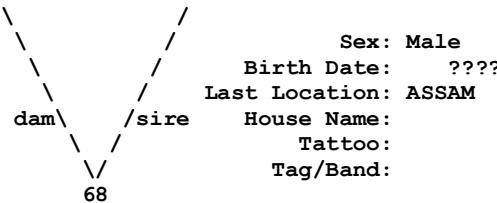
67

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 68

WILD

WILD

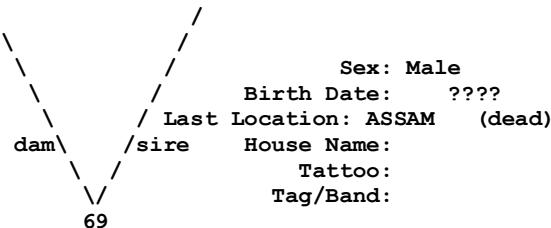


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 69

WILD

WILD

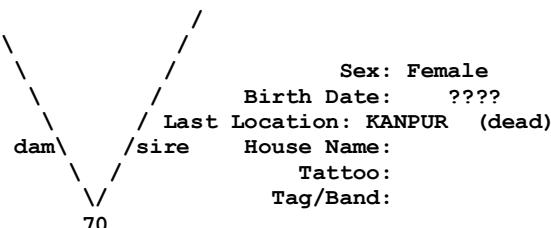


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 70

WILD

WILD

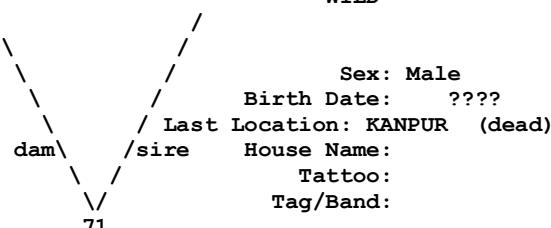


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 71

WILD

WILD

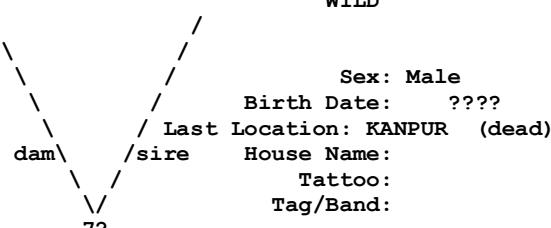


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 72

WILD

WILD

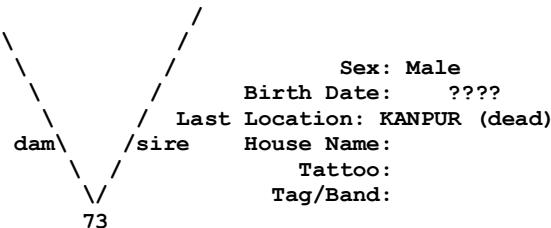


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 73

WILD

WILD

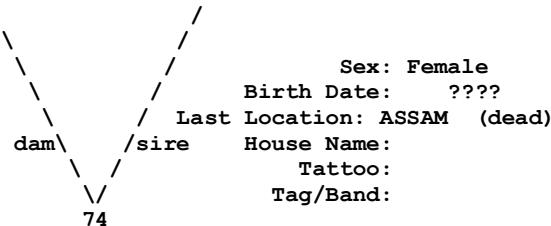


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Studbook Number: 74

WILD

WILD

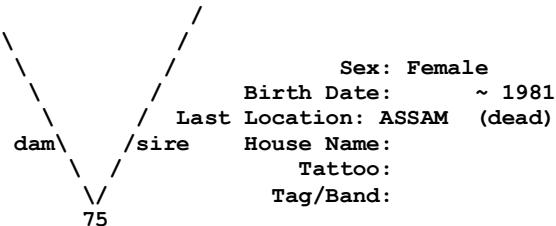


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 75

WILD

WILD

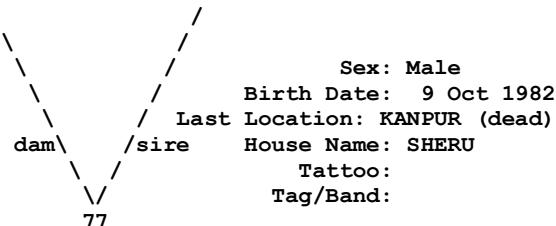


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 77

UNK

UNK

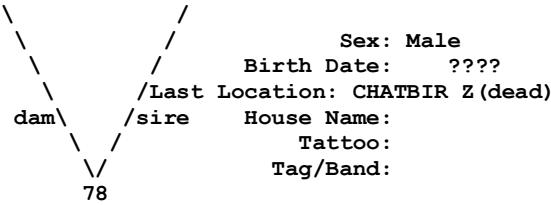


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 78

WILD

WILD

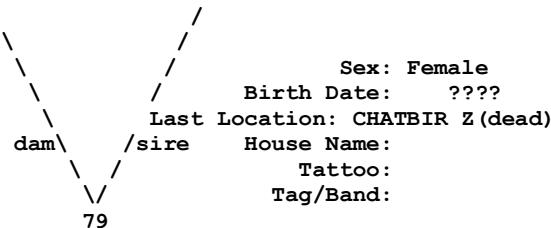


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 79

WILD

WILD

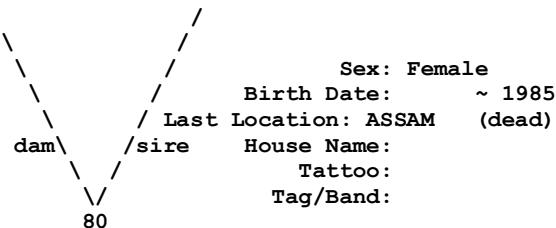


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 80

WILD

WILD

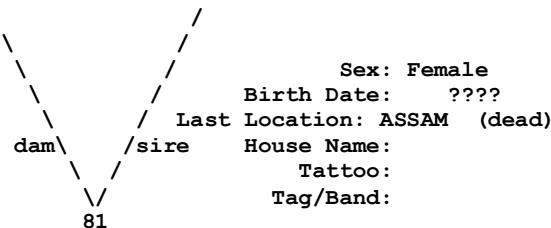


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 81

WILD

WILD

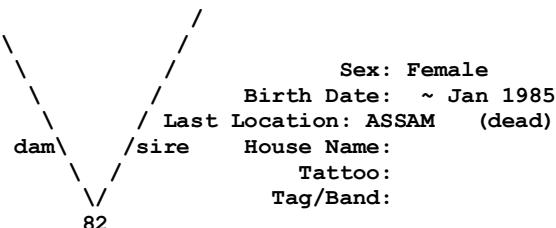


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 82

WILD

WILD

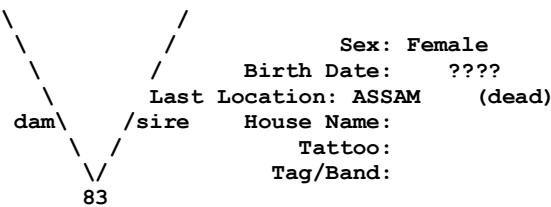


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 83

WILD

WILD

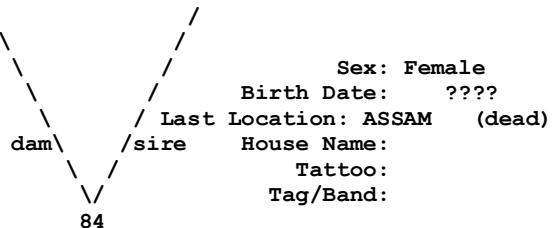


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 84

WILD

WILD

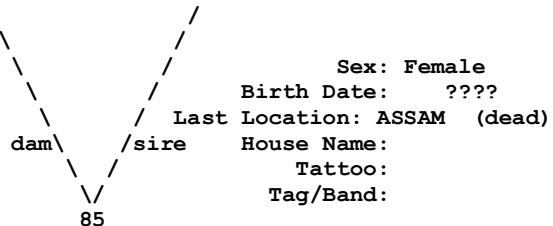


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Studbook Number: 85

WILD

WILD

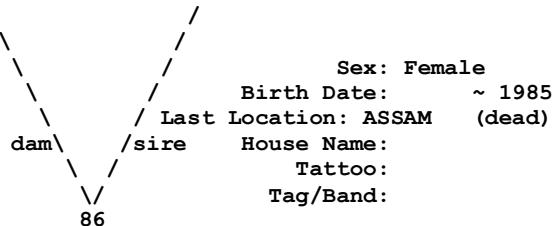


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 86

WILD

WILD

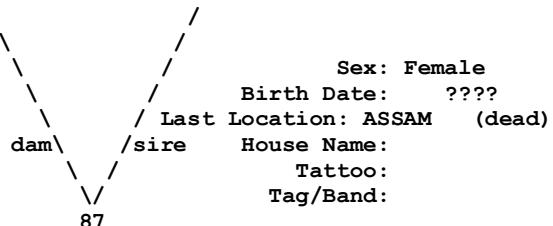


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 87

WILD

WILD

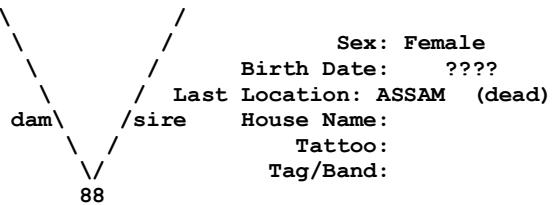


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Studbook Number: 88

WILD

WILD

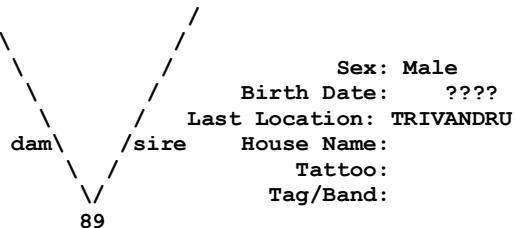


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Studbook Number: 89

WILD

WILD

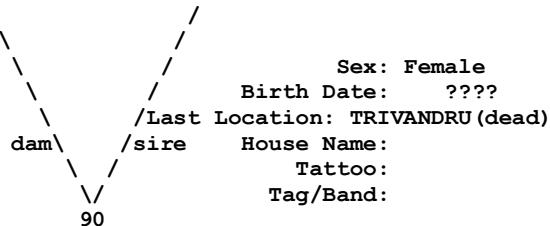


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WILD

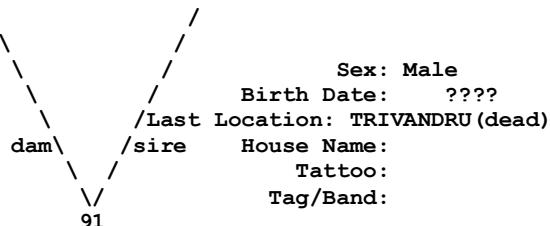


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Studbook Number: 91

WILD

WILD

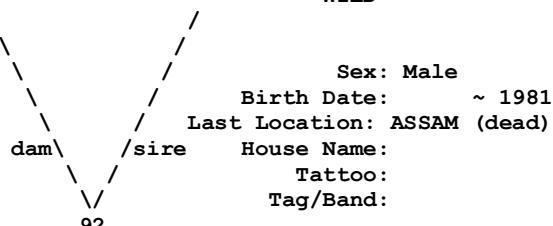


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Studbook Number: 92

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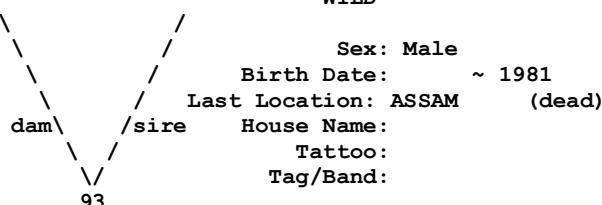


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Studbook Number: 93

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WILD

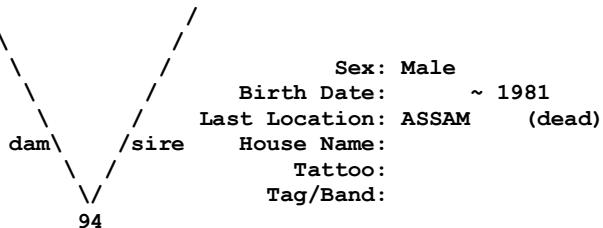


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Studbook Number: 94

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WILD

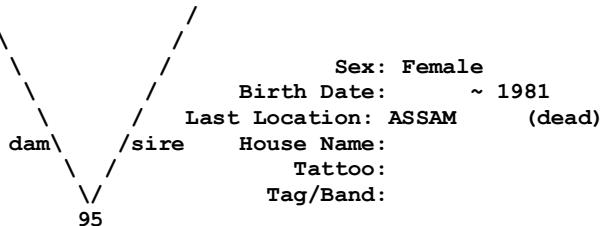


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Studbook Number: 95

WILD

WILD

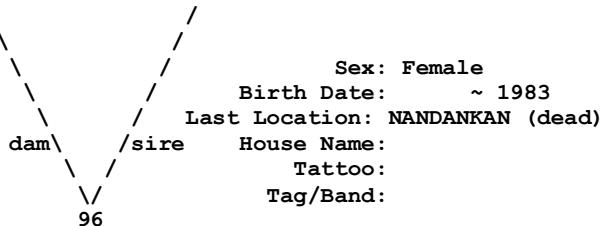


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 96

WILD

WILD

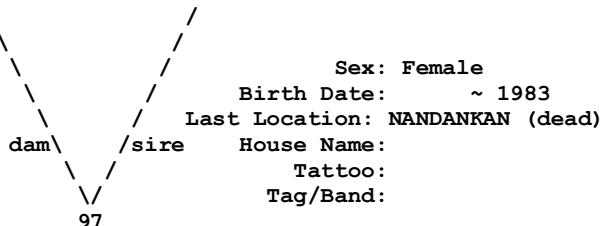


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 97

WILD

WILD

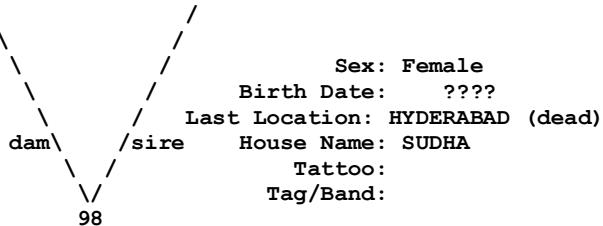


Taxon Name: TRACHYPITHECUS GEEI

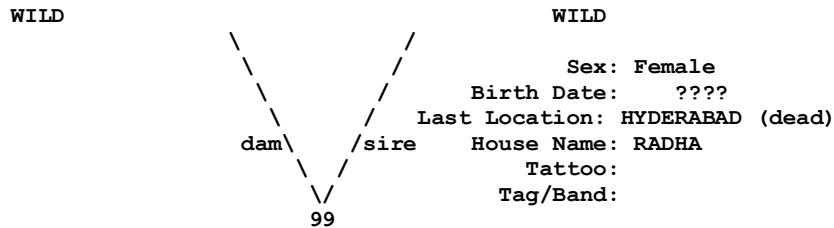
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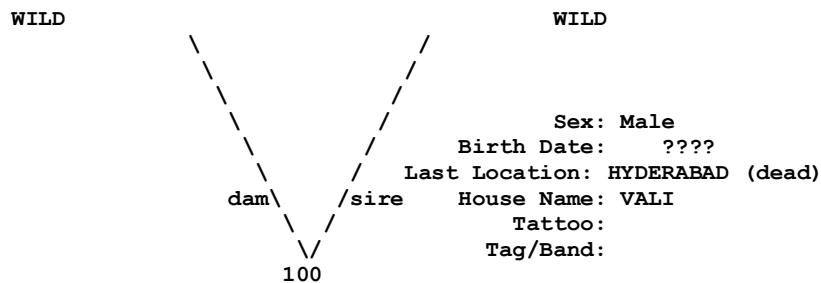
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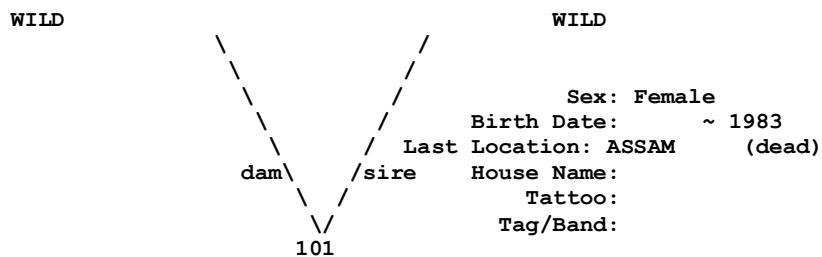
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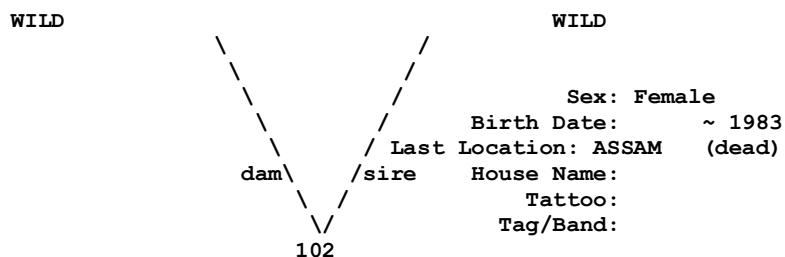
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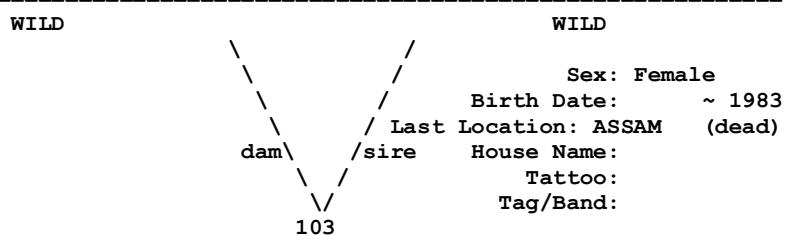
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=====
Taxon Name: TRACHYPITHECUS GEEI Studbook Number: 103
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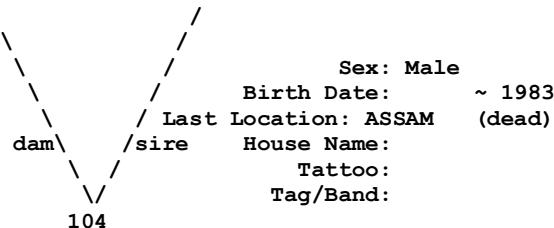


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 104

WILD

WILD

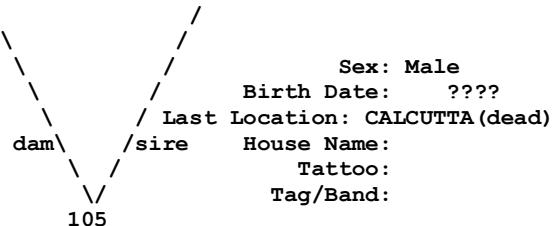


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Studbook Number: 105

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UNK

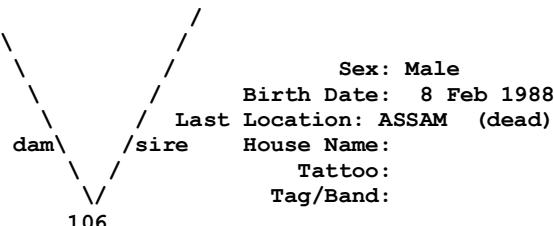


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 106

MULTA5

MULTA4

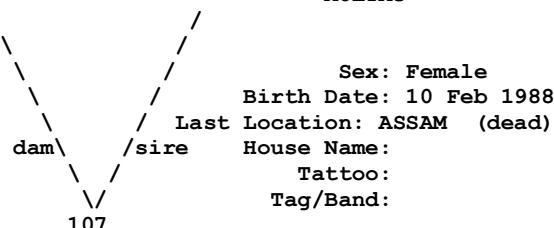


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 107

MULTA6

MULTA5

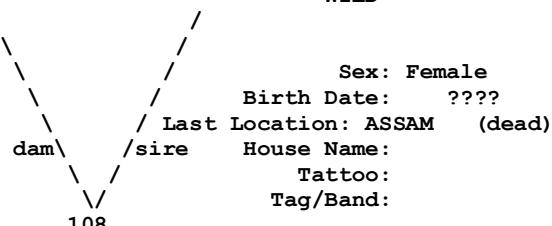


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 108

WILD

WILD



Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 109

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

109

dam

sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 110

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

110

dam

sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 111

WILD

WILD

Sex: Male
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

111

dam

sire

Name: TRACHYPITHECUS GEEI

Studbook Number: 112

WILD

WILD

Sex: Male
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

112

dam

sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 113

WILD

WILD

Sex: Male
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

113

dam

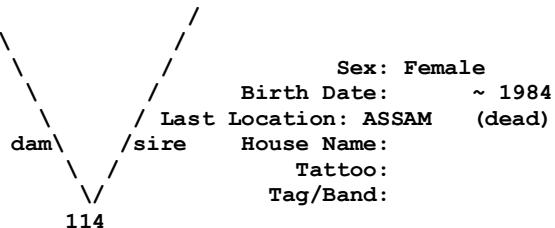
sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 114

WILD

WILD

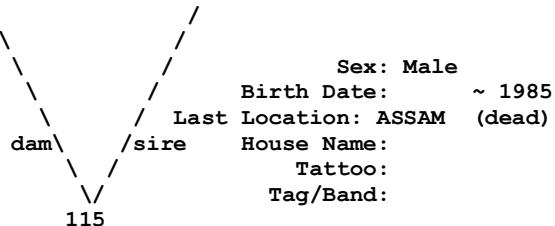


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 115

WILD

WILD

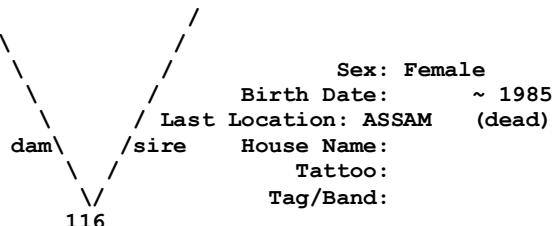


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 116

WILD

WILD

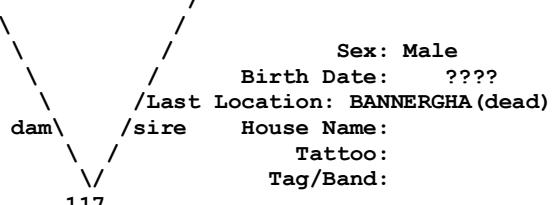


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 117

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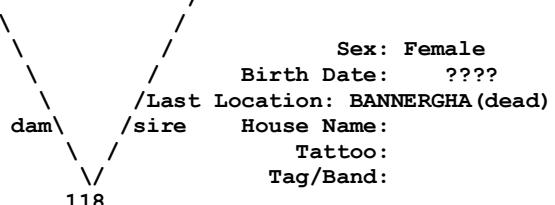


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 118

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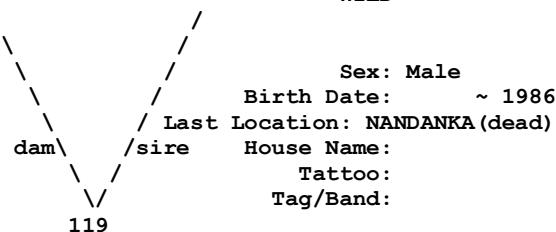


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 119

WILD

WILD

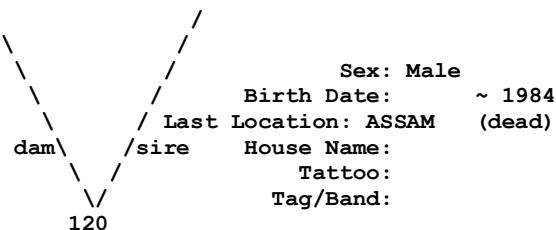


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 120

WILD

WILD

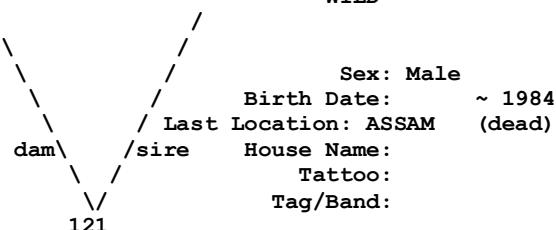


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 121

WILD

WILD

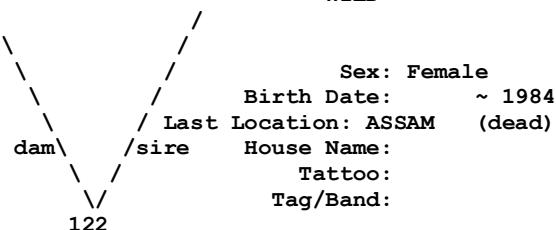


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 122

WILD

WILD

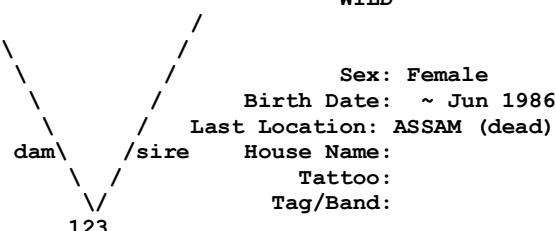


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 123

WILD

WILD



Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 124

WILD

WILD

Sex: Female
Birth Date: ????
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

124

dam

sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 125

WILD

WILD

WILD

WILD

dam sire

122

121

+

Sex: Male
Birth Date: 21 Jun 1991
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

125

dam

sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 126

WILD

WILD

Sex: Male
Birth Date: ????
Last Location: HYDERABAD (dead)
House Name: HANUMAN
Tattoo:
Tag/Band:

126

dam

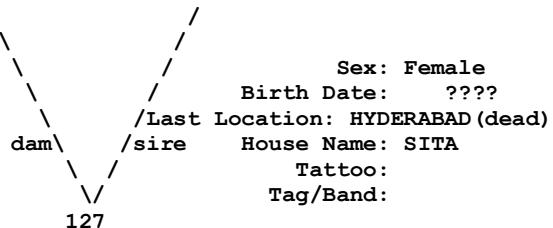
sire

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 127

WILD

WILD

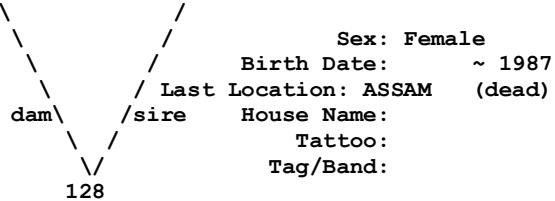


Name: TRACHYPITHECUS GEEI

Studbook Number: 128

WILD

WILD

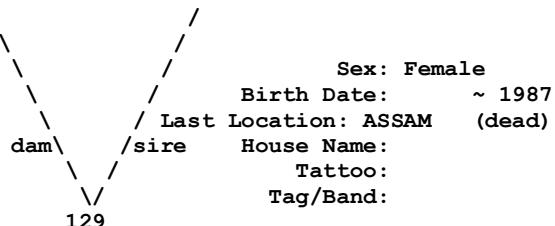


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 129

WILD

WILD

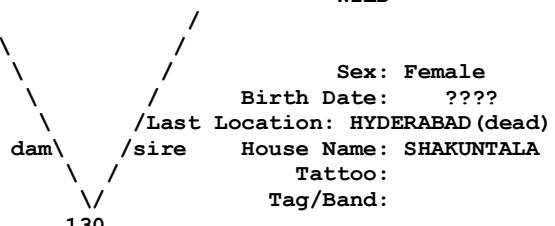


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 130

WILD

WILD

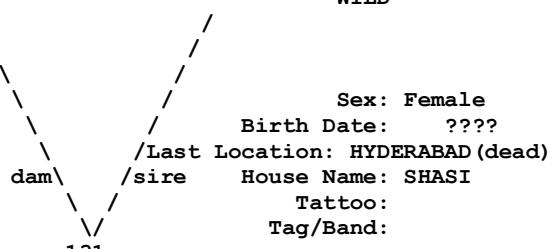


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 131

WILD

WILD



Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 132

UNK

UNK

Sex: Female
Birth Date: ~ 1989
Last Location: KANPUR (dead)
House Name: DOLLY
Tattoo:
Tag/Band:
dam sire
132

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 133

UNK

UNK

Sex: Female
Birth Date: ~ 1991
Last Location: KANPUR (dead)
House Name: ROLLY
Tattoo:
Tag/Band:
dam sire
133

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 134

WILD

WILD

Sex: Male
Birth Date: ~ Jun 1990
Last Location: BOKARO (dead)
House Name:
Tattoo:
Tag/Band:
dam sire
134

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 135

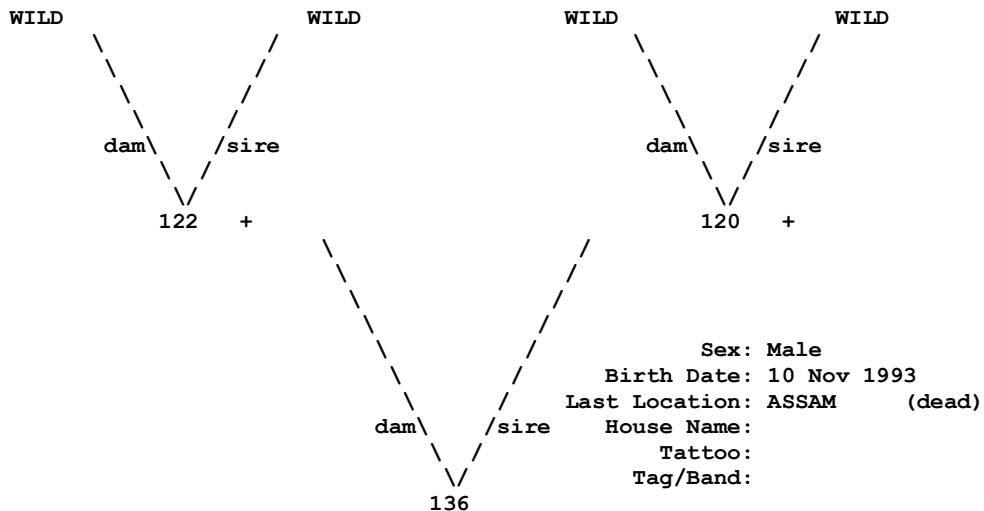
WILD

WILD

Sex: Male
Birth Date: ~ 1986
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:
dam sire
135

Taxon Name: TRACHYPITHECUS GEEI

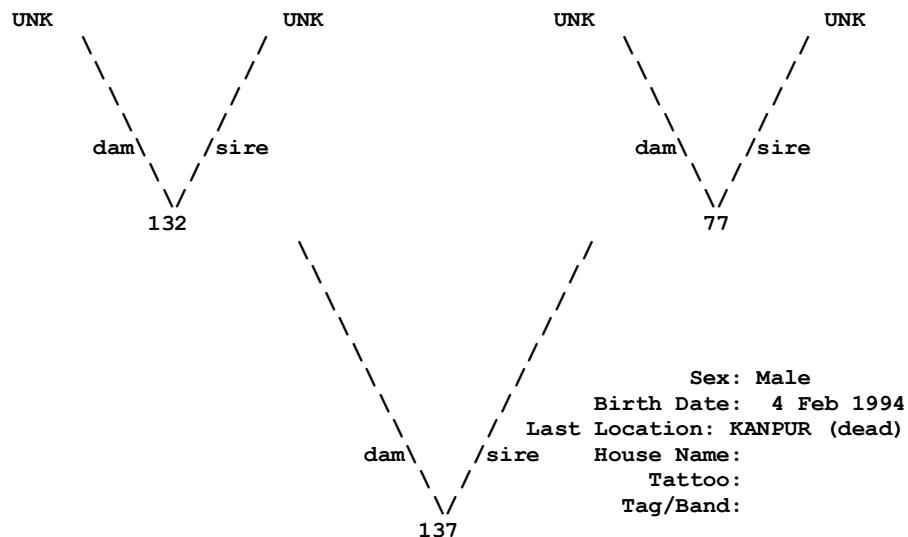
Studbook Number: 136



+ Wild-caught... * Appear more than once...

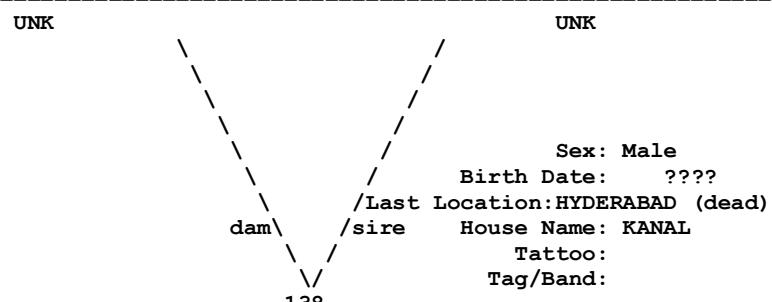
Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 137



Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 138

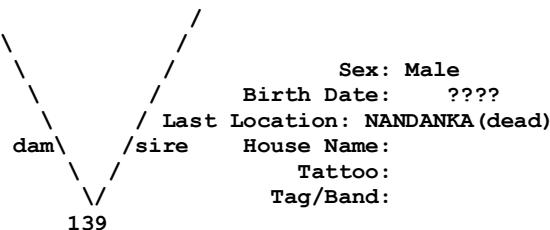


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 139

UNK

UNK



139

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 140

WILD

WILD

WILD

WILD

dam sire

122 +

dam sire

120 +

Sex: Female
Birth Date: 28 Nov 1996
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

140

+ Wild-caught... * Appear more than once...

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 141

WILD*

WILD*

WILD

WILD

dam sire

122 +

dam sire

120 +

Sex: Female
Birth Date: 2 Nov 1997
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:

141

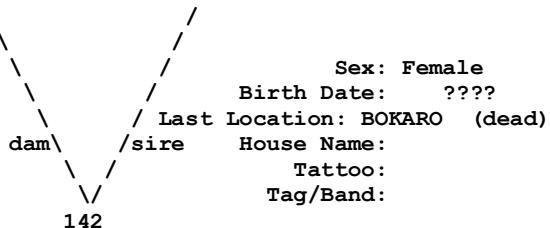
+ Wild-caught... * Appear more than once...

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 142

WILD

WILD

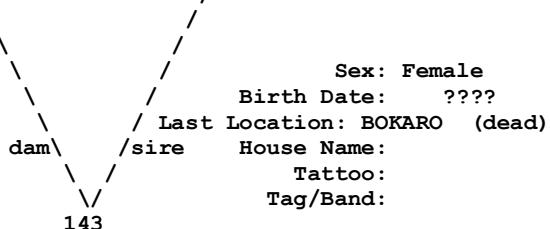


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 143

WILD

WILD

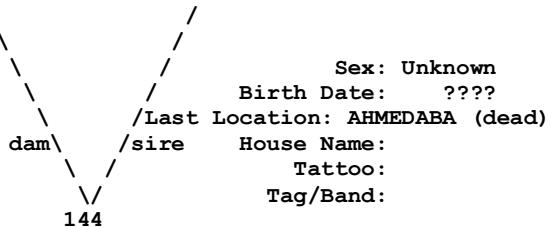


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 144

WILD

WILD

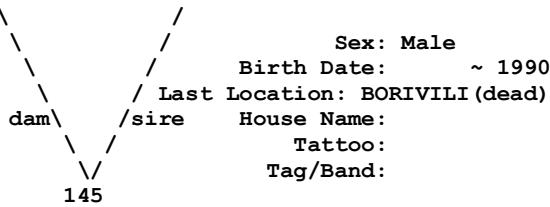


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 145

WILD

WILD

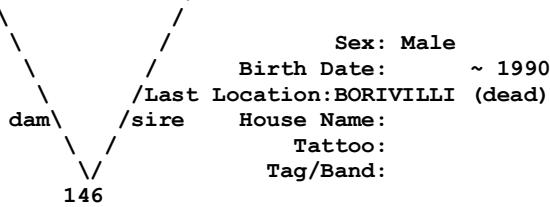


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 146

WILD

WILD

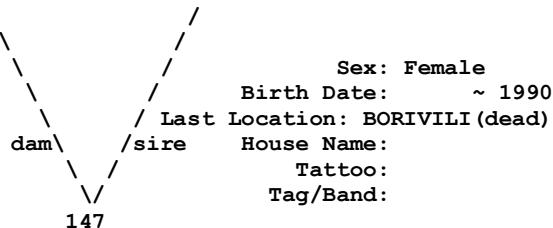


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 147

WILD

WILD

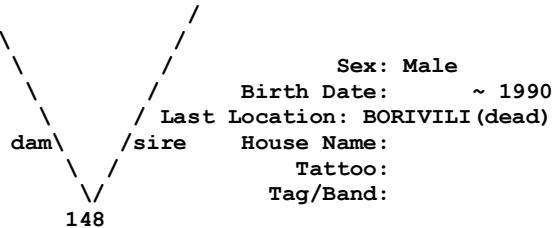


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 148

WILD

WILD

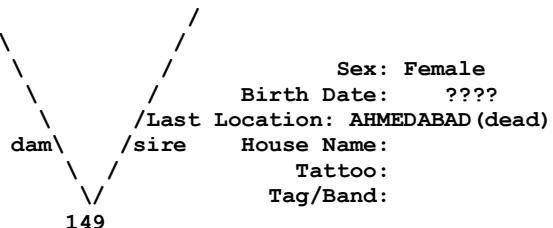


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 149

WILD

WILD

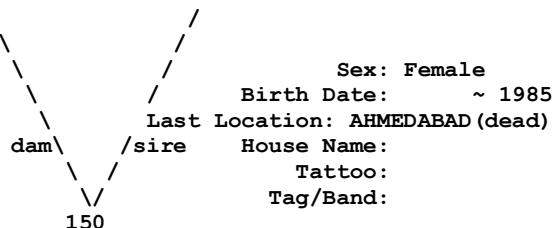


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 150

WILD

WILD

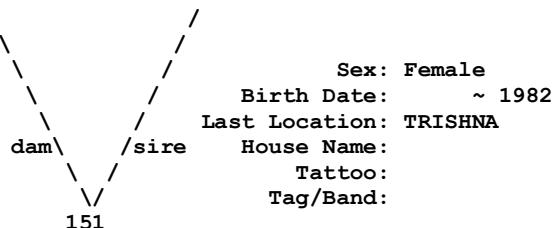


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 151

WILD

WILD

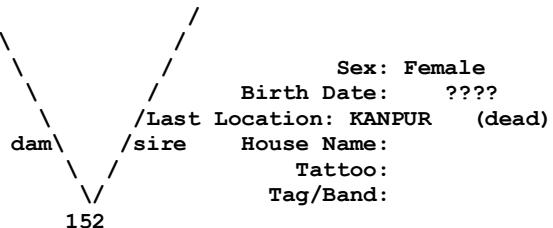


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 152

WILD

WILD

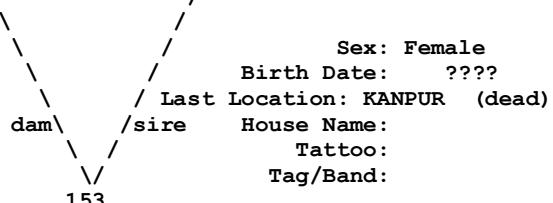


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 153

WILD

WILD

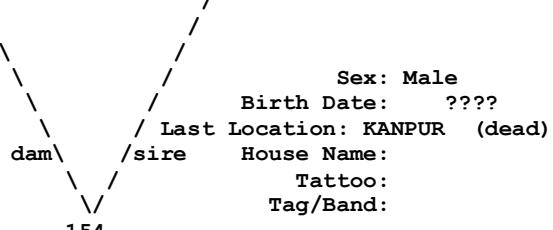


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 154

WILD

WILD

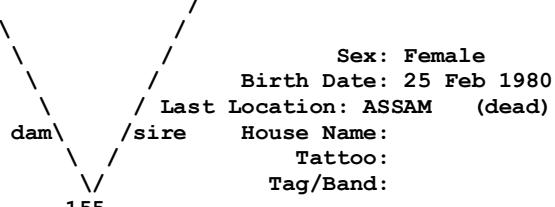


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 155

WILD

WILD

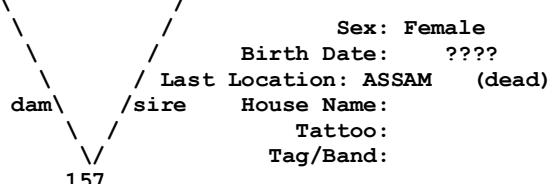


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 157

WILD

WILD

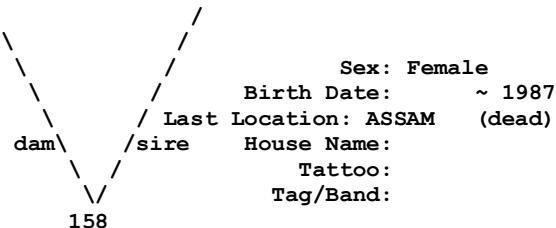


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 158

WILD

WILD

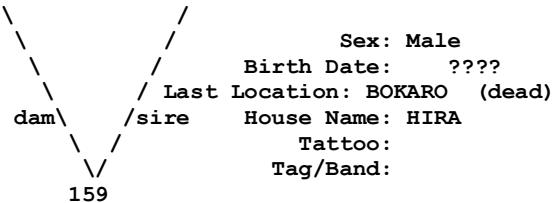


Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 159

WILD

WILD



Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 160

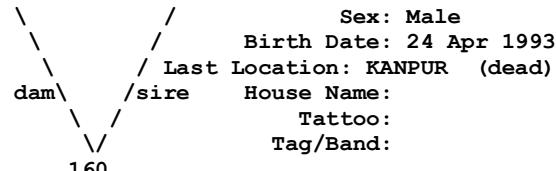
UNK

UNK

dam sire

132

UNK

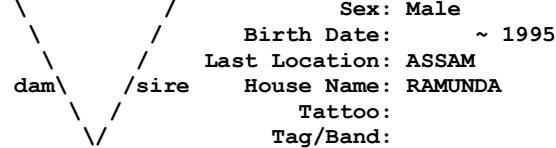


Taxon Name: TRACHYPITHECUS GEEI

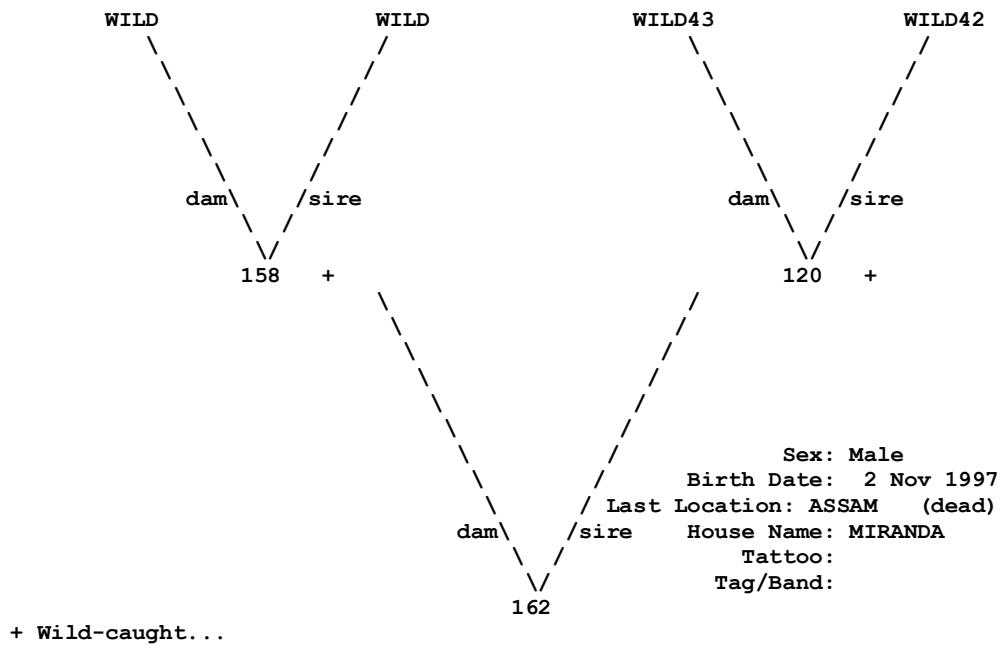
Studbook Number: 161

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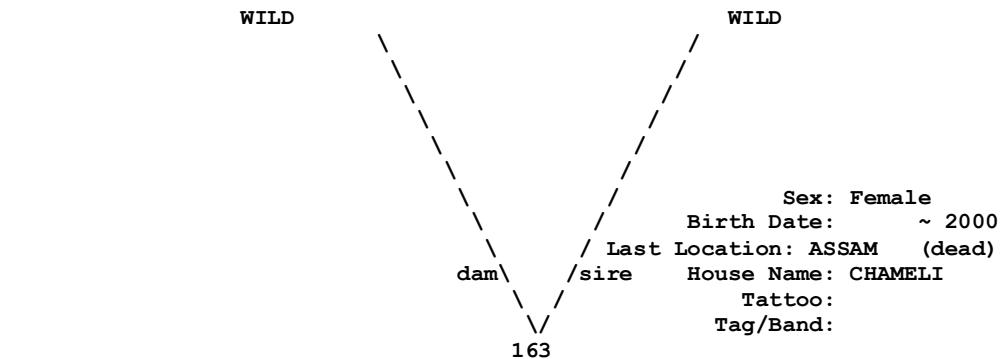
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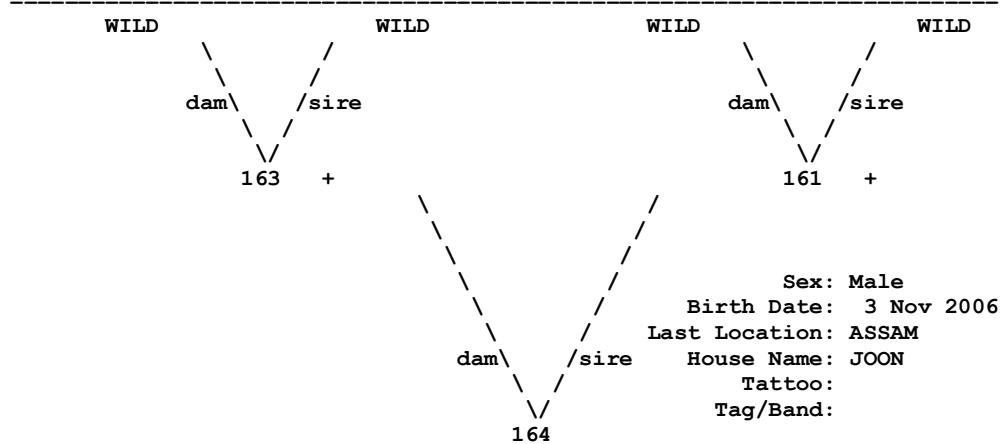
Taxon Name: TRACHYPITHECUS GEEI Studbook Number: 162



Taxon Name: TRACHYPITHECUS GEEI Studbook Number: 163



Taxon Name: TRACHYPITHECUS GEEI Studbook Number: 164



+ Wild-caught...

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 165

WILD

WILD

Sex: Male
Birth Date: ~ 2005
Last Location: ASSAM
House Name: RAMU
Tattoo:
Tag/Band:
165

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 166

WILD

WILD

WILD

WILD

dam sire

dam sire

163 +

161 +

Sex: Male
Birth Date: 4 Apr 2008
Last Location: ASSAM
House Name: MOON
Tattoo:
Tag/Band:
166

+ Wild-caught...

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 167

WILD

WILD

WILD

WILD

dam sire

dam sire

163 +

161 +

Sex: Female
Birth Date: 30 Jun 2010
Last Location: ASSAM (dead)
House Name:
Tattoo:
Tag/Band:
167

+ Wild-caught...

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 168

WILD

WILD

dam / sire

168

Sex: Female
Birth Date: ~ 2004
Last Location: ASSAM
House Name: UMA
Tattoo:
Tag/Band:

Taxon Name: TRACHYPITHECUS GEEI

Studbook Number: 169

WILD

WILD

dam / sire

169

Sex: Female
Birth Date: ~ Dec 2008
Last Location: ASSAM(dead)
House Name: AIEVY
Tattoo:
Tag/Band: