

NATIONAL STUDBOOK

Lion Tailed Macaque (*Macaca silenus*) III Edition

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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FOREWORD

Habitat loss, fragmentation and degradation coupled with poaching are limiting the growth of wild populations of several species; increasingly rendering them vulnerable to extinction. 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 II edition of the studbook of Lion tailed macaque (*Macaca silenus*) III edition 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 on a regular basis to enable the timely update of the studbook.

**(Vinod Ranjan, I.F.S.)
Member Secretary
Central Zoo Authority**

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1. Alipore Zoological Garden, Kolkata, West Bengal
2. Arignar Anna Zoological park, Chennai, Tamil Nadu
3. Assam State Zoo cum Botanical Garden, Guwahati, Assam
4. Bannerghatta Biological Garden - National Park, Bangalore, Karnataka
5. Children's Park, Guindy, Tamil Nadu
6. Dr. Shivarama Karanth Piliikula Biological Park, Mangalore, Karnataka
7. Jaipur Zoo, Jaipur, Rajasthan
8. Jodhpur Zoo, Jodhpur, Rajasthan
9. Kanpur Zoological Park, Kanpur, Uttar Pradesh
10. Kodanadu Zoo, Kodanadu, Kerala
11. Lady Hydari Park Animal Land, Shillong, Meghalaya
12. Lucknow Zoological Park, Lucknow, Uttar Pradesh
13. Mahendra Chaudhary Zoological Park, Chatbir, Punjab
14. Maitri Baagh Zoo, Bhilai, Chhattisgarh
15. Nandan Kanan Biological Park, Bhubaneswar, Orissa
16. National Zoological Park, New Delhi
17. Nehru Zoological Park, Hyderabad, Andhra Pradesh
18. Parassinikadavu Snake Park, Parassinikadavu, Kerala
19. Peshwe Park, Pune, Maharashtra
20. Rajiv Gandhi Zoological Park and Wildlife Research Centre, Pune, Maharashtra
21. Sanjay Gandhi Biological Park, Patna
22. Sayajibaug Zoo, Vadodara, Gujarat
23. Sepahijala Zoological Park, Bishalgarh, Tripura
24. Sri Chamarajendra Zoological Gardens, Mysore, Karnataka
25. State Museum and Zoo, Thrissur, Kerala
26. Thiruvananthapuram Zoo, Thiruvananthapuram, Kerala
27. Tiger and Lion Safari, Shimoga, Karnataka
28. Veermata Jijabai Bhosle Udyan Zoo, Mumbai, Maharashtra
29. VOC Park Mini Zoo, Erode, Tamil Nadu

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Authors

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Species Biology

The lion-tailed macaque (*Macaca silenus*) is an endangered primate endemic to evergreen rainforests of the southern part in Western Ghats. The species is of conservation significance due to its retention of primitive traits among macaques.

Taxonomy

Phylum:	Chordata
Sub-phylum :	Vertebrata
Class:	Mammalia
Order:	Primates
Family:	Cercopithecidae
Genus:	<i>Macaca</i> (Lacépède 1799)
Species:	<i>silenus</i> (Linnaeus, 1758)

The genus *Macaca* occupies a unique position among extant non-human primates in terms of its vast distribution range and the diversity of habitats colonized. The genus originated in northern Africa about 7 million years ago (mya) and from there in a series of disjunct migrations entered Eurasia and onward to south and south-east Asia (Delson, 1980, 1996; Campbell *et al.*, 2007). During its spread into Asia, the genus *Macaca* diversified into a number of distinct species groups which have been defined according to their geographical distribution, differences in male reproductive anatomy (Delson 1980) and more recently, molecular genetic data (Hayasaka *et al.*, 1996; Morales and Melnick, 1998; Tosi *et al.*, 2003). The *Silenus-Sylvanus* group is believed to be the first to have dispersed from Africa, and its 11 species are distributed throughout Asia and North Africa. After the macaques entered Asia, they diverged into the monophyletic *silenus* group from the common ancestor of all other Asian species at ~4.9 mya (Tosi *et al.*, 2003). A population in the Western-Ghats of India became isolated due to climatic changes and became the ancestors of present day Lion tailed macaques. The common ancestry of Lion tailed macaques to the *silenus-sylvanus* sub-group is attributed to its retaining the phylogenetically primitive genital morphological features (Fooden, 1976).

Ziegler and coworkers (2007) based on their studies on the molecular phylogeny of Southeast Asian primates in the *silenus* group suggested that the ancestors of the group split off from the proto-*M. fascicularis* group during the early-middle Pliocene. These ancestral members of the *silenus* group split into the eastern (Bornean) and the western (Sumatran, Malayasian) subgroups. The western sub-group migrated to peninsular India. The population that colonized the present day tropical evergreen and semi-deciduous forests of Western-Ghats in south-western India became isolated due to aridification caused by climatic changes resulting in loss of habitat connectivity. This population evolved into the present day *Macaca silenus*.



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Morphology

The species displays a number of phenotypic traits that distinguishes it from other macaques, most noticeable being the extreme blackness of the fur and the prominent silvery ruff. They are among the smaller sized macaques with males weighing on an average 8.9 kg and females weighing 6.1 kg (Harvey *et al.*, 1991). The respective head to body length in males and females is 510–610mm and 460mm (Fa, 1989). The tail length in males and females is 254–386mm and 254–370mm respectively (Kaumanns *et al.*, 2006). The pelage is predominantly black and like the trunk, the fur of the tail is uniformly blackish with elongated guard hairs at the tip of the tail forming a well-defined terminal tuft—hence, the name "liontail" from which it derives its common name (Fooden, 1975). Both the sexes possess a prominent silvery mane or ruff that first begins to appear when infants are 3-5 months of age that coincides in time with the change in the pink infantile face to the dark pigmented adult face (Lindburg and Harvey, 1996). Like the other members of the *silenus-sylvanus* sub-group, females have a pronounced phase of sexual skin tumescence, the general pattern of which is similar to the other members, although swelling is much less distended in estrous.

Geographic distribution

This species is endemic to the Western Ghats, roughly distributed from 8°25'N Kalakad Hills to 14°55'N north of Anshi Ghat (Groves, 2001) in south western India, with its range passing through the three states of Karnataka, Kerala and Tamil Nadu. Although the species has a relatively wide range, its area of occupancy is small and severely fragmented (Molur *et al.*, 2003). Historically the species was distributed as a continuous population in the entire Western Ghats, but is now locally extinct in Maharashtra and Goa. The lion tailed macaques are divided into two sub populations by a gap of about 40 km in the mountains at Palghat in Kerala (Singh *et al.*, 2002; Kaumanns *et al.*, 2006; Kumar *et al.*, 2008).

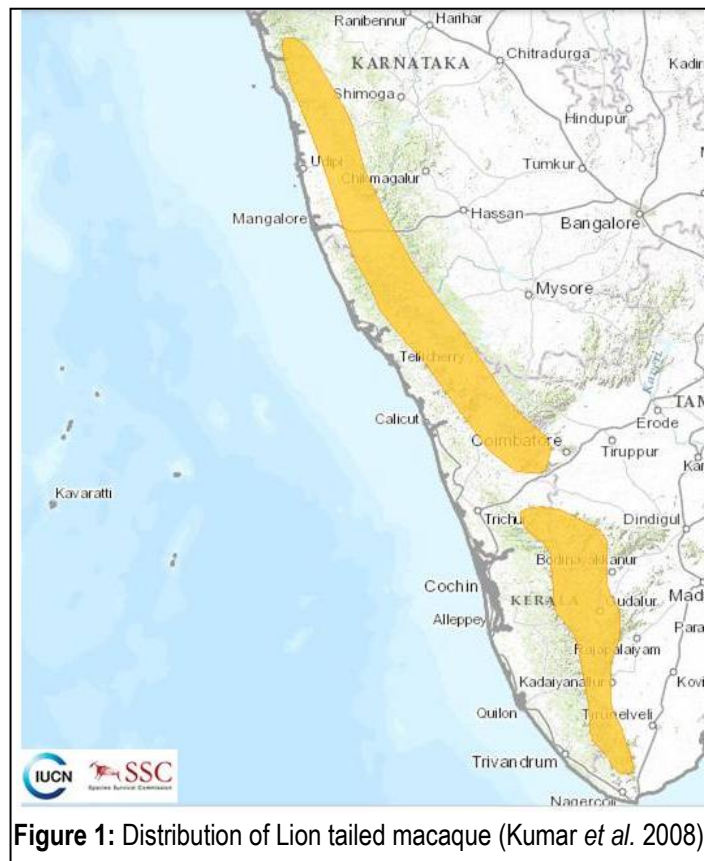


Figure 1: Distribution of Lion tailed macaque (Kumar *et al.* 2008)

Habitat

The lion tailed macaque is a habitat specialist, restricted to the evergreen forests of the Western Ghats (Singh *et al.*, 1997). They are found in mature mountainous forests, at altitudes between 610-1070m, with a large amount of canopy cover and protection from view (Kumara and Singh, 2008). They have home ranges varying between 1.25 km² (in forest fragments) (Kumar, 1987) and 5 km² (in continuous rainforest) (Green and Minkowski, 1977) and each troop's range includes perennial water resources. Lion tailed macaques are considered the most arboreal among macaques spending 93% of their time in

the middle and upper parts of the forest canopy, and less than 1% of their time on the ground (Kurup and Kumar, 1993).

In the wet and higher altitude regions of the Western Ghats, Lion-tailed macaques share the habitat with Nilgiri langurs (*Trachypithecus johnii*). The two sympatric species exhibit dietary and vertical separation in the utilization of resources (Singh *et al.*, 2000) with the former being frugivorous/faunivorous and the latter primarily folivorous. Further, lion-tailed macaques move and feed in the upper canopy, while the Nilgiri langurs use the middle and lower canopies.

Feeding ecology

They are selective feeders (Sushma and Singh, 2006), with food resources widely dispersed (Ganesh and Davidar, 1999). It is primarily a frugivorous species, but its diet also includes a variety of fauna (Green and Minkowski, 1977; Kumar, 1987). The diet of lion tailed macaque is dominated by plant parts (fruit flesh, nectar and resins), rich in simple sugars or polysaccharides, but poor in protein (Kumar, 1987). The dependence on animal protein is likely due to their inability to process foliage protein and lack of leguminous seeds in their diet (Kumar, 1987).

They feed on diverse undisturbed mature rainforest trees and depend on different food resources according to the availability of food species across locations (Santosh *et al.*, 2015). The number of plant species consumed varies by site, ranging from 80 species reported from Silent Valley National Park, Kerala (Joseph and Ramachandran, 2001) to 24 plant species in the southern forests of Sirsi-Honnava (Singh *et al.*, 2011a). The faunal component of the diet consist mostly invertebrates, frogs and frog nests, lizards, small birds, their eggs and nestlings, and giant squirrels and nestlings. Arachnids and arthropods constitute the primary source of animal food (Kumar 1987; Kumara *et al.*, 2000; Sushma and Singh, 2008).

The highly dispersed distribution of food trees and food items that require processing, result in a large part of the day being spent on foraging and feeding (Menon and Poirier, 1996; Sushma, 2004). Group members maintain long inter-individual distances while foraging (Kumar, 1987, Krishnamani and Kumar, 2000; Kumara *et al.*, 2000; Singh *et al.*, 2001; Singh and Kaumanns, 2005).

Social organization and behaviour

Lion-tailed macaques live in multi-male, multi-female groups containing adult males, females and offspring (Thierry 2004) with group sizes ranging from six to 53 individuals (Green and Minkowsky, 1977; Kumar, 1987; Singh *et al.*, 2002). Troops include females and usually one and occasionally two males. The species shows female natal philopatry with males dispersing (Thierry, 2007). The adult sex ratio bias in troops is attributed to the male biased dispersal strategy, male's monopolization of available females in the troop (Singh *et al.*, 2011b). Multiple males are present in very large troops that may later split into sub-groups (Rowe, 1996). The female dominance hierarchy remains stable unlike males that vary through their lifetimes, following shifts in their competitive abilities.

Lion tailed macaque show fusion-fission troops like other macaques; however, the inter-subgroup distance of more than 100m has been observed (Sakthivelou and Kumar, 1998) with various sub-groups occupying different sleeping sites at night (Singh *et al.*, 2006b). This inter-individual distance

increases at the time of foraging and ranging which take up more than 76% of the time of a day (Sushma, 2004). Males are spatially more widely distributed, display low degrees of social interactions and show high male to male aggression (Singh *et al.*, 2011b) preferentially interacting with only female troops. Studies in captivity also indicate low levels of mutual tolerance among adult males (Kaumanns and Singh, 2012).

Wild lion-tailed macaques spend only about 8% of their time in social activities, while 62% to 79% is spent on foraging and feeding (Menon and Poirier 1996; Singh *et al.*, 1998; Sushma, 2004). Affiliative behaviours such as proximity and grooming are more prevalent among the members of the same matriline (Birky, 1993).

Reproduction

Lion tailed macaques have a complex social and reproductive system, sensitive to both environmental and social changes that has adapted to its resource limited environment. The species as a consequence has evolved a life history trait to minimize investment in reproduction in having a low lifetime reproductive output (Singh *et al.*, 2006a) with a birth rate ranging between 0.28 to 0.42 (mean = 0.35) in the wild (Kumar, 1987; Sharma, 2002; Singh *et al.*, 2001). A female on an average contributes four to five offspring during its reproductive active period of 15 years (Singh *et al.*, 2006a). The offspring; however, have a high survivorship rate (infants: 0.87/year, juveniles: 0.90/year) (Kumar, 1987; Sharma, 2002) thereby ensuring adequate recruitment in the population for maintenance of population size.

The life history traits of the species are summarized in table 1.

Table 1: Life-history traits of Lion tailed macaque

Age at sexual maturity	In wild - 80 months (Kumar 1987) In captivity - 48 months (North American population) (Lindburg <i>et al.</i> , 1989) - 65.2 months (European population) (Krebs and Kaumanns, 2001)
Gestation period	172 days (Lasley <i>et al.</i> , 1985)
Birth seasonality	Partially seasonal with a - major birth peak period during January–April (Singh <i>et al.</i> , 2006a; Sharma <i>et al.</i> , 2006) - minor peak during September–December (Sharma <i>et al.</i> , 2006)
Mean inter-birth interval	34.3 months (Singh <i>et al.</i> , 2006a) 14 months if the infant dies (Singh <i>et al.</i> , 2006a)
Reproductive tenure	15 years from the age of sexual maturity (Singh <i>et al.</i> , 2006a)
Weaning age	10.5 months (Krishna <i>et al.</i> , 2008)

The species has the shortest female sexual cycle lasting on an average 30.5 days with estrous females conspicuous by their swollen sexual skin in the sub-caudal region soliciting extra-troop males if present in the vicinity (Lindburg, 1990; Singh *et al.*, 2006a). Female solicitation includes loud proceptive calls and culminates in sexual presentation (Lindburg, 1990 Lindburg and Harvey, 1996); while the male approaches for mounting may be preceded or accompanied by the Len expression

Estrous females form consort relationships with available males and typically leave their matriline associates to avoid harassment by other females (Kumar and Kurup, 1985; Kumar, 1987). Mating in lion-tailed macaques follows a Multiple-Mount-to-Ejaculate (MME) pattern *i.e.*, repeated mountings by the male with a short gap between the mounts, and each mount not resulting in ejaculation.

The females withdraw from the troop for a few days before and after parturition. Maternal care in the species has been described as protection, ambivalence and rejection (Kumar, 1987). As the young grows, the frequency of positive responses by mother like grooming, manipulation, cradling, submitting, presenting, clasping, restraining and retrieving decreases, while negative responses like threatening and punishment increases. A sex-biased parental investment is displayed in which male infants receive more investment than female infants (Krishna et al., 2008).

Threats and conservation measures

Lion-tailed macaques are the most threatened of the primates endemic to the Western Ghats (Easa *et al.*, 1997). The Nilgiri hills, Anamalai hills, and Cardamom hills in Kerala and Tamil Nadu are known to hold major portion of the population (Roonwal and Mohnot, 1977; Kumar, 1995; Singh *et al.*, 2002); however, habitat fragmentation has resulted in groups becoming isolated since decades (Singh *et al.*, 2002). The total number of mature lion-tailed macaques is estimated to be less than 2,500, distributed into 49 subpopulations with no subpopulation containing more than 250 individuals (Molur *et al.*, 2003).

Being primarily frugivorous with a narrow dietary niche, lion-tailed macaques are particularly vulnerable to habitat disturbances (Rode *et al.*, 2006; Bicknell and Peres, 2010), affecting their demography, ranging patterns, feeding habits and reproductive rates (Kumar *et al.*, 1995; Singh *et al.*, 2001; Kumara and Singh 2004).

Loss of habitats, due to deforestation, forest fragmentation (primary threat) and human-caused disturbance (encroachment and poaching, etc), conversion of forests to cardamom and tea plantations and developmental projects are the main threats faced by the species (Karanth, 1992; Jayson, 1996; Krishnamani and Kumar, 2000).

The Lion tailed macaque is categorized as endangered in the IUCN Mammal Red Data Book (C2a (i) ver 3.1). The species is listed in Appendix I of CITES, and in Schedule I, Part I, of the Indian Wildlife (Protection) Act, 1972. The lion-tailed macaque was considered as one of the ‘top 25 most endangered primates in the world’ in 2010.

Status in Captivity

Recognizing its threatened status, global attention was focused on developing both *in-situ* and *ex-situ* conservation strategies for lion tailed macaques. In the 1980s, international breeding programmes for the lion-tailed macaque were established under the Species Survival Plan (SSP) of North America and European Endangered Species

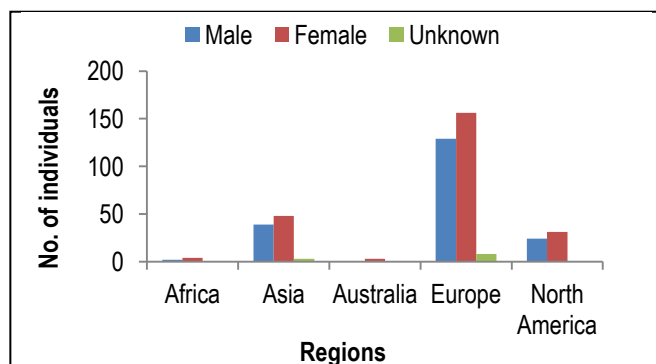


Figure 2: Global status of Lion tailed macaques in captivity

Breeding Programmes (EEP), to develop and maintain viable populations in captivity. The total global captive population comprises of 447 individuals (193.242.11) housed at 76 institutions across 5 regions including 1 in Africa, 20 in Asia, 1 in Australia, 36 in Europe and 18 in North America (ZIMS data until May 2015) (Figure 2). The record is inclusive of data from 10 Indian zoos.

A Global Animal Survival Plan was created after careful examination by the Captive Husbandry Group that emphasized the need for a demographically and genetically viable population to be maintained in India. A coordinated breeding programme based the International efforts was established by the Central Zoo Authority. Arignar Anna Zoological Park, Chennai was recognized as the Co-ordinating zoo with Mysore Zoo and Trivandrum Zoo as participating institutions for the conservation breeding of the species. The Wildlife Institute of India has been maintaining the National studbook of the species to assist in this *ex-situ* conservation attempt since 2003. The first edition was developed by Choudhury *et al.* in 2003; this was updated and revised by Malviya *et al.*, in 2011. The third edition of the studbook based on the earlier editions includes information made available for all specimens held in Indian zoos. The Indian captive population consisting of 63 individuals is housed across 13 facilities with 6 institutions holding lone individuals (Table 2).

Table 2: Status of Lion tailed macaque in Indian zoos

Location	Total no. of individuals (M.F.U)	Living Individuals (M.F.U)	Time span during which Lion Tailed Macaques were kept (years)	Births (M.F.U)	Deaths (M.F.U)
Assam	3.6.0	0.1.0	1966-15 (50)	0.1.0	3.4.0
Bannerghatta	1.4.0	1.1.0	1987-15 (29)	0.0.0	0.0.0
Bhilai	3.4.0	0.1.0	1982-15 (34)	2.3.0	2.2.0
Calcutta	1.5.0	0.0.0	1970-08 (39)	0.2.0	1.1.0
Chatbir	4.4.0	1.0.0	1979-15 (37)	2.0.0	3.3.0
Delhi	17.27.11	3.2.1	1959-15 (57)	14.19.11	5.16.10
Guindy	4.3.0	0.0.0	1990-09 (20)	0.0.0	1.0.0
Hyderabad	5.6.0	0.1.0	1964-15 (52)	0.0.0	4.3.0
Jaipur	6.9.1	0.0.0	1978-05 (28)	2.7.1	5.7.1
Jodhpur	0.1.0	0.0.0	1984 (1)	0.0.0	0.0.0
Kanpur	6.4.0	0.0.0	1973-03 (31)	2.2.0	6.4.0
Kodanadu	2.2.0	0.0.0	1988-89 (2)	0.0.0	0.0.0
Lucknow	2.1.0	1.0.0	1988-15 (28)	0.0.0	0.1.0
Madras	34.29.9	11.13.1	1983-15 (33)	27.19.9	14.11.8
Mangalore	0.2.0	0.0.0	1992-01 (10)	0.0.0	0.0.0
Mysore	9.8.2	2.3.1	1981-15 (35)	1.0.2	5.4.1
Nandankanan	10.8.0	0.0.0	1966-10 (45)	7.4.0	9.7.0
Parassinikkadavu	1.2.0	1.1.0	1986-15 (30)	0.0.0	0.6.0
Patna	1.6.0	0.1.0	1995-15 (21)	0.1.0	1.4.0
Peshwe	1.0.0	0.0.0	1984 (1)	0.0.0	0.0.0
Pune	2.0.0	0.0.0	1984-06 (23)	0.0.0	2.0.0
Shillong	1.0.0	0.0.0	1994-00 (7)	0.0.0	0.0.0
Shimoga	1.0.0	0.0.0	1990 (1)	0.0.0	0.0.0
Thrissur	11.10.0	1.1.0	1959-15 (57)	1.1.0	6.8.0

Tripura	0.1.0	0.0.0	1990-00 (11)	0.0.0	0.1.0
Trivandrum	21.17.1	8.6.0	1960-15 (56)	6.6.1	4.3.1
Vadodara	1.1.0	0.0.0	1986-96 (11)	0.0.0	1.1.0
Veerмата	5.7.0	0.0.0	1949-95 (47)	3.2.0	3.5.0
Voc Pk Zoo	1.0.0	0.0.0	1980 (1)	0.0.0	0.0.0

Methods

Pedigree data was collected by means of questionnaires, zoo visits and from the websites of CZA and ZIMS (Zoological Information Management System). Questionnaires were sent to the institutions housing Lion Tailed Macaques in India, requesting information for 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 programme PMx v 1.2 (Ballou *et al.*, 2011) for further analysis.

Scope of the studbook and data quality

The third edition of the National Studbook of Lion Tailed Macaque includes information on all captive specimens, held by Indian zoos currently and in the past. The studbook is current through June 2015, and is based on data made available by the holding zoos. Specimens born in groups containing multiple males where identification of sires was not possible, the sire has been listed as MULT (multiple). The availability of data with respect to compilation of the studbook is summarized in Figure 3.

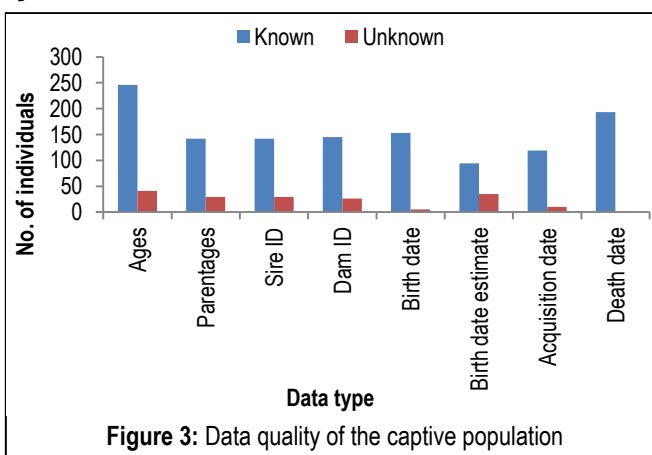


Figure 3: Data quality of the captive population

Out of the total 287 individual records, ages were known for 246 and complete parentages were known for 142 specimens. Birth dates were known for 151 captive-born and 2 wild-conceived individuals while estimated birth dates were known for 1 unknown-origin and 93 wild-born macaques. Dates of acquisition were available for 108 wild-born and 11 unknown-origin individuals respectively, while death dates were available for 193 out of the 194 mortalities.

ANALYSIS

Demographic Analysis

Historical population

Census trends: A historical population of 287 specimens (123.140.24) is documented in the current edition of the National Studbook; including 116 wild-born, 156 captive-born, 2 wild conceived and 13 unknown-origin individuals. The census trends of the population since 1959 are

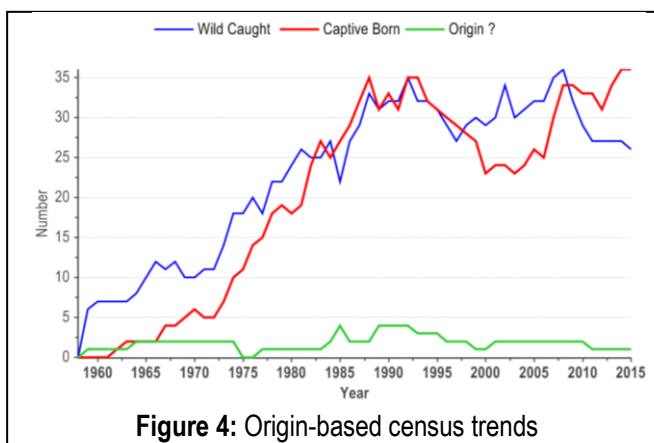


Figure 4: Origin-based census trends

represented in Figures 4 and 5. The initial captive stock that included four (2.2.0) individuals housed at Veermata Jijabai Bhosale Udyan zoo, Mumbai was born to parents of unknown identification in 1949. These animals were transferred to Melbourne in the same year and no further record of the species in Indian zoos is available till 1959. The captive population was reestablished with the acquisition of six (2.4.0) wild-born individuals in Delhi zoo and one (1.0.0) unknown origin animal in Thrissur.

The origin based census trends (figure 4) indicates that consistent recruitment of wild origin animals and births in captivity led to a peak population size of 74 (35.39.0) individuals in 1992. The population declined during 1993-2000 due to decline in captive births (n=14) that together with acquisition of wild origin animals did not compensate for mortalities (n=41) during the period. Post 2000, the population once again showed an increase in captive births that despite reduced acquisitions from wild was able to ensure an increase in population size till 2008. The population again declined during 2009 – 2012 due to an increased number of mortalities (n=25) and limited recruitment from wild (n=1).

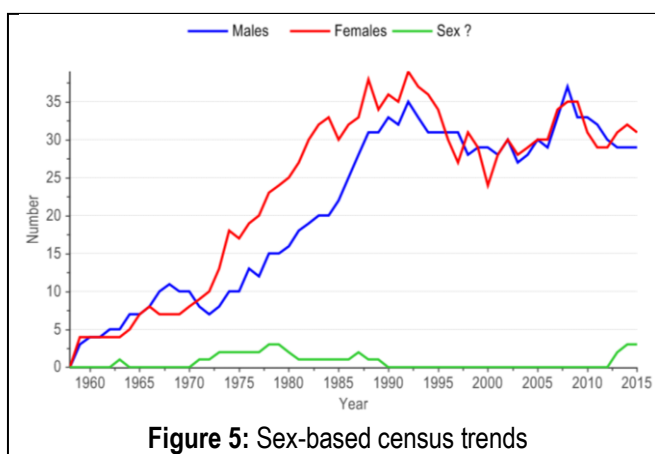


Figure 5: Sex-based census trends

The sex-based census trend (Figure 5) is indicative of a male-biased sex ratio during 1967 – 1970 while a female biased sex ratio is observed for most of its history, with short intervening periods that had an equitable sex ratio or a male biased sex ratio. The living population has a small female-bias (1.06 females per male). The historical population is summarized in table 3 and the specimen-wise details of the historical population are presented in Appendix I.

Table 3: Summary of the historical population

	Males	Females	Unknown	Total
Total studbook size	123	140	24	287
Total number of acquisitions from wild	51	65	0	116
Total number of births	65	67	24	156
Total number of wild conceived	2	0	0	2
Total number of unknown origin	5	8	0	13
Total number of exports	7	10	0	17
Total number of disposals (including 12 exports)	80	93	21	194
Total number of lost to follow up (Ltf) (including 4 exports)	13	16	0	29
Total number of breeding individuals	29	47	0	76
Wild-born that have bred	12	18	0	30
Captive-born that have bred	17	29	0	46

Living population

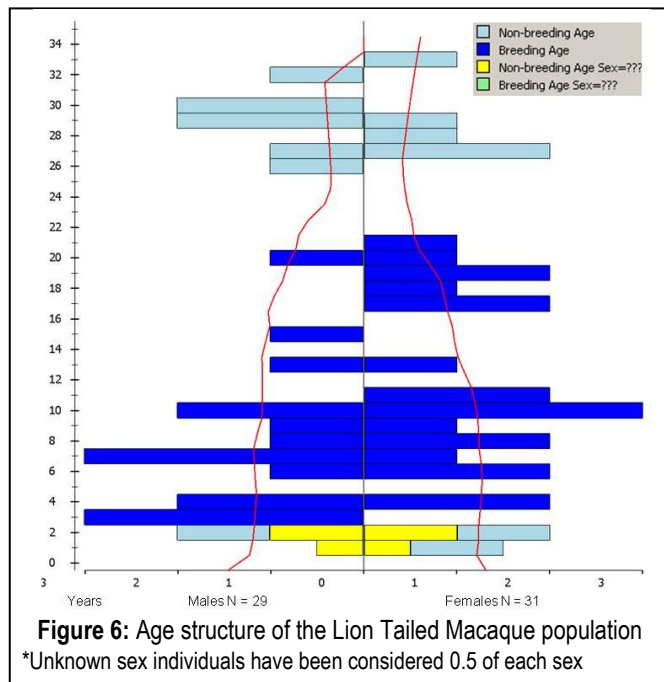
The living population consists of a total of 63 (29.31.3) individuals including 1 unknown-origin, 26 wild-born and 36 captive-born individuals. The living population is summarized in table 4 and details are presented in Appendix II.

Table 4: Summary of the living captive population

	Males	Females	Unknown	Total
Total no. of living individuals (excluding 1 export)	29	31	3	63
Total number of wild-born individuals	13	13	0	26
Total number of captive-born individuals	16	17	3	36
Total number of unknown origin individuals	0	1	0	1
Total number of breeding individuals	7	14	0	21
Wild-born that have bred	2	5	0	7
Captive-born that have bred	5	9	0	14

Age and sex structure

The living population includes 55 (24.28.3) known-age individuals and 8 (5.3.0) unknown-age individuals. The age-structure of the known-age individuals of this population is depicted in Figure 6. The figure indicates three distinct age-classes; the post-reproductive age-class (>20 years) comprising of 15 (7.8.0) individuals, the reproductive age class (3-20 years) comprising of 34 individuals (15.19.0) and the pre-reproductive age-class consisting of reproductively immature individuals born during 2013 and 2014 (1.2.3). The population has a marginal female bias (29.31.3) and includes three unknown sex specimens.



The age structure indicates that despite a high proportion of animals being present in the reproductively active age class, limited reproductive success has resulted in a small number of juveniles that may be insufficient to replace the older animals as they die.

Life table and population growth rates

Age-specific rates of survivorship and fecundity obtained from life-tables are used to predict growth and changes in the age-structure of the population over time. The life table for the captive population of Lion tailed macaque is based on a total sample size of 243 specimens (excluding 41 unknown-age individuals and additionally 3 wild-born individuals with no records of acquisition dates). The sample size of each age-class comprises of more than 30 individuals from 0-16 years for females and from 0-18 years for males, as required for valid results from life-tables but sample sizes in the older age-classes are too small to be useful for deriving specific life-history data. It is most likely to represent the future behaviour of the population under management, rather than, the biological characteristics of the species in captivity. With a small sample size of life-table data, conclusions about life-history characteristics should be treated with caution and hence the results of life-table rates have been excluded

from the Studbook. The growth rates for the population are summarized in Table 5 and population projections for the next 20 years are depicted in Figure 7.

Table 5: Life-table summary

	Male	Female	Total
Instantaneous rate of change (r)	-0.031	-0.048	-0.039
Population growth rate (λ)	0.970	0.953	0.961
Mean generation time (T)	11	10.3	10.7
N at 20 years	13	11	24

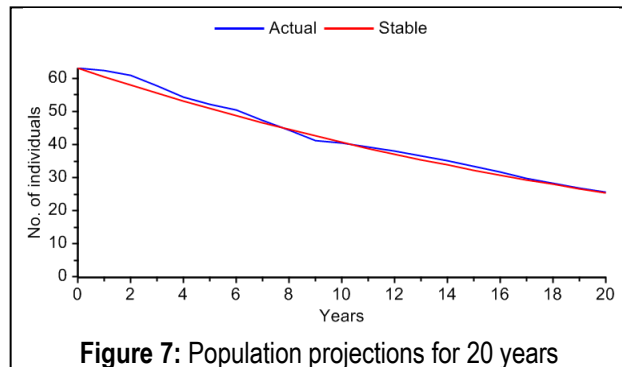


Figure 7: Population projections for 20 years

The instantaneous rate of change (r), as well as the population growth rate (λ) indicate a declining population. The generation length calculated using the age-specific reproductive data available from the studbook was 11 years for males and 10.3 years for females. The population projections simulation (Figure 7) using PMx suggests that the current population is not self-sustainable and without supplementation by wild origin specimens will decline to only 24 individuals after a period of 20 years. The male and female population sizes are projected to decline to size of N=13 and N=11 individuals respectively over the next 20 years.

Genetic Analysis

The current population includes contributions from 15 founders (5 living), with a highly variable founder representation. Four founders (Studbook Nos. 110, 132, 120 and 191) have contributed to majority of the living population with 31, 29, 17, and 10 descendants respectively, while the remaining founders are under-represented (with 1-3 descendants each). Majority of the wild origin animals (86 out of 116) from the historical population failed to breed at all. The gene diversity, measured as the fraction of the founder genetic variation remaining in the population, indicate that 86.62% of the gene diversity has been retained in the population, representing 3.74 founder genome equivalents (FGE). Levels of gene diversity increased gradually during 1960-2000 reaching a maximum of 92.84% in 2000. Post 2000, gene diversity, however has been decreasing with slight increases in 2014, mainly due to a decline in wild recruitment and breeding failure by most potential founders. Current mean inbreeding is moderately high ($F = 0.1011$) and with increasing relatedness among the potential breeders, inbreeding might increase further from its current level without genetic supplementation. The mean kinship of the population is 0.1338 which suggests that the individuals are related to each other at the level of half-siblings. The current population includes 21 potential founders which have not contributed to the gene pool; of these, ages of 7 individuals are not known (6 out of these have been in captive conditions for several years ranging from 7-13 years, without records of breeding), 9 are in the post-reproductive age-classes, 3 are nearing reproductive senescence (in the age-group 13-19 years), which suggest that only 2 potential founders may contribute to the gene pool of the population.

Table 6: Genetic summary

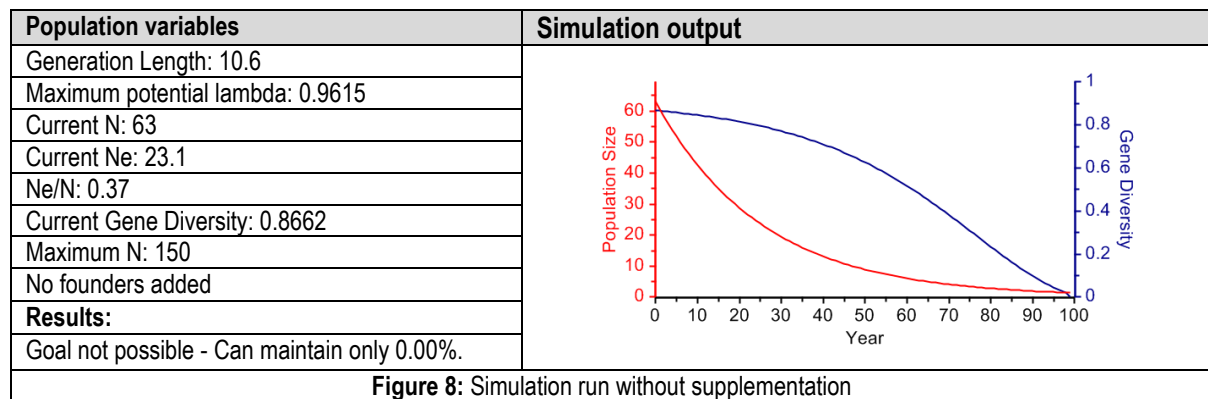
	Current	Potential
Founders	15	21
Gene Diversity	0.8662	0.9839
Founder Genome Equivalents	3.74	31.15
Population Mean Kinship	0.1338	
Mean Inbreeding	0.1011	

Targets for Population Management

The current captive population of Lion tailed macaque includes 63 individuals with a large proportion of specimens in the reproductively-active age classes (N=34). The population is declining and has a maximum potential lambda of 0.9615. It retains a gene diversity of 86.62% of the founder stock with a high level of relatedness among individuals as indicated by the mean kinship value of specimens and the mean inbreeding coefficient (MK= 0.1338, F= 0.1011). Multiple simulations were run using PMx to determine the fate of the current population, the effects of increased population growth rate and supplementation with wild origin animals that are effective founders; over the next 100 years.

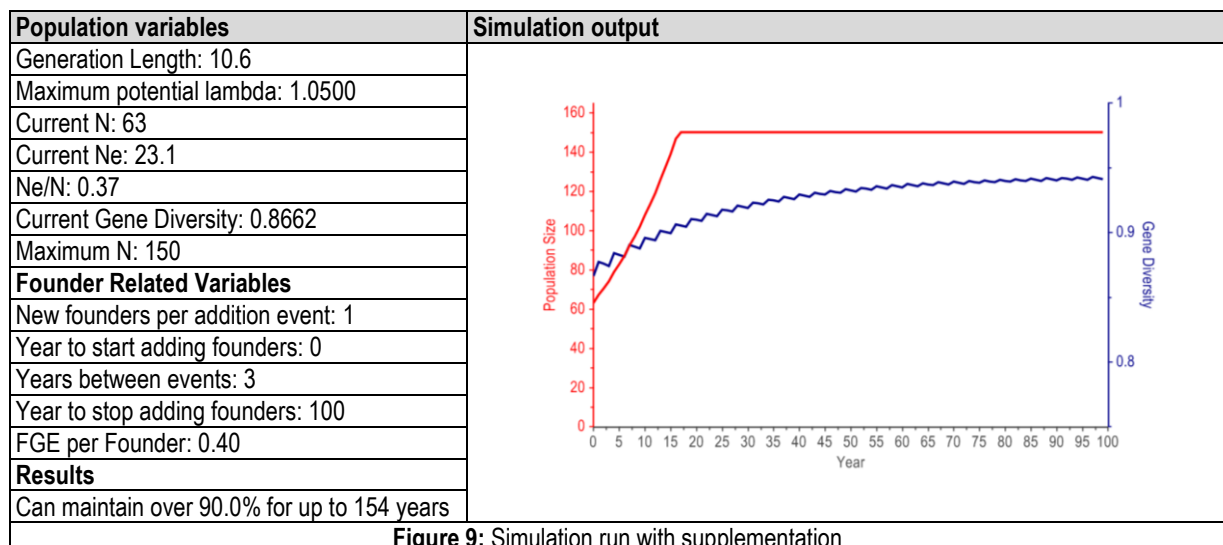
Scenario I:

The simulation was run keeping the current population variables with no supplementation. The outcomes indicate that the population was unlikely to survive over the next 100 years and would be unable to achieve the goal of maintaining a demographically and genetically viable population in captivity. The population variables used and the outcomes of the simulation are presented in Figure 8.



Scenario II:

The outcomes of the simulation that was run using a maximum potential lambda of 1.0500, increasing the maximum size of the population to 150 specimens and supplementation with one effective founder every three years indicates an effective means of maintaining a sustainable population in captivity. The population and founder related variables, and the simulation outcome are presented as Figures 9. The outcomes indicate that the population would be able to achieve its goals over the next 20 years with subsequent supplementation ensuring it sustainability.



Breeding Recommendations

Lion tailed macaques are endemic primates vulnerable to extinction due to a number of reasons, one of them being habitat fragmentation resulting in small isolated population vulnerable to inbreeding depression. Intensive population management efforts are therefore required towards ensuring the long term maintenance of genetically viable and demographically stable captive populations.

Regulated mating choices based on lack of; or minimal relatedness between breeding pairs can ensure the maintenance of current level of genetic diversity in the population. Pairing choices based on Mate Suitability Index (MSI) described in table 7 below; is a part of the toolkit of PMx software (Ballou *et al.*, 2011) used to determine the pairing choices for the captive lion tailed macaque population. The pairing recommendations made are summarized in table 7. While making mating choices it is suggested that pairs that have the least MSI score be preferred over pairs that have higher scores. Each dam has been paired several likely sires, the holding zoos may exercise suitable mating choices based on ease of availability of the possible sires and mutual compatibility of animals.

Table 7: Pairing options for the captive Lion tailed macaque population

Dam	Possible Sires	MSI	Mate Suitability Index (MSI)
116	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	<p>It is a numerical genetic assessment of a male-female pair that incorporates several variables into one ranking (MSI range is 1 to 7, with 1 being the most genetically beneficial). The default value in the table is the <i>MSI</i> (Mate Suitability Index) value for each male –female pair. <i>MSI</i> is a composite score that integrates four genetic components into a single index:</p> <p>Delta GD (dGD): Change in gene diversity (GD) of the population if one offspring is produced by the pair. Positive dGD increases the GD of the population, while negative dGD decreases GD.</p> <p>Differences in MK values (MKDiff): Difference in the genetic value (mean kinship value) of the male and female. Breeding a pair with a large MKDiff is detrimental because it combines under-represented and over-represented genetic lines.</p> <p>Inbreeding coefficient (F): Inbreeding coefficient of any offspring resulting from the pair (i.e., the kinship value for the pair). Inbreeding is considered to be detrimental to the fitness of the resulting offspring.</p> <p>Unknown ancestry: The amount of unknown ancestry in the male and female. Incomplete pedigree information means that the genetic value and relatedness of a pair cannot be accurately calculated.</p> <p>1 = very beneficial (genetically) to the population; 2 = moderately beneficial, 3 = slightly beneficial; 4 = slightly detrimental, 5 = detrimental, should only be used if demographically necessary 6 = very detrimental (should be considered only if demographic considerations override</p>
	280	3	
121	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
127	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
135	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
172	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
175	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
185	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
190	138	3	
191	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 280, 288, 313, 317	1	
	110, 186	3	
251	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
261	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
275	83, 96, 111, 123, 126, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	2	
281	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	

291	138	2	preservation of genetic diversity) “-“= very highly detrimental (should not be paired, due to high level of kinship of pair)
	83, 96, 111, 123, 126, 220, 266, 267, 270, 276, 288, 313, 317	3	
309	83, 96, 111, 123, 126, 220, 266, 267, 270, 276, 288, 313, 317	3	Using Pair-wise Info The default table of <i>MSI</i> values for pairs can be used to quickly assess the relative genetic value of a pair, subset of pairs, potential mates for one individual, and many other valuable data when making breeding recommendations. This can be especially helpful to quickly explore options for pairing individuals at one facility that houses numerous individuals of each sex or to quickly identify an alternative suitable mate if a recommended breeding fails. Source: Traylor-Holzer, K. (ed.). 2011.
312	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
340	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	
348	83, 96, 111, 123, 126, 138, 220, 266, 267, 270, 276, 288, 313, 317	1	
	280	3	

Conclusions

Lion tailed macaques are a primate species endemic to the Western Ghats of south-western India. The species in its range is threatened by a variety of reasons and is listed as endangered in the IUCN Red List. The maintenance of genetically viable and demographically stable populations is thus critical towards ensuring the long term survival of the species.

The captive population originates from wild origin founders that are already vulnerable to inbreeding depression due to continued habitat fragmentation resulting in small isolated populations. The current captive population of 63 individuals is characterized by a declining trend with a negative growth rate ($\lambda = 0.961$) and sub-optimal genetic diversity of 86.2% and relatedness at half-sibling level as evinced by mean inbreeding and mean kinship of the population ($F = 0.1011$ $MK = 0.1338$).

Analysis of the pedigree database also shows the following:

- The population includes a large number ($N = 86$) of wild origin animals that have not contributed to the captive gene pool. It further, has a small size due to the low reproductive output of the captive population and only a small portion of the population being present in the reproductive pool.
- A possible reason for the low founder representation could be inadequate socialization process prior to introduction to captive troops, reproductively unfit and aged animals.
- Lowered reproductive output may also be due to the suboptimal housing and husbandry conditions being practiced at holding zoos.

The captive Indian population therefore requires intensive management interventions that ensure the long term genetic viability and demographically stability. An important step in this direction without having an adverse impact on the in-situ population could be pooling together of single and unviable groups of animals present at multiple locations to form viable troops using appropriate socialization process can result in enlarging the number of animals in the reproductive pool thereby improving the reproductive output of the species. Improvements in the existing housing and husbandry practices that address the critical needs of the species in captivity can further assist in this endeavor.

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Appendix I

Historical population of Lion tailed macaque (*Macaca silenus*)

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
1.	1	Unnamed		M	~ 1955	Wild	Wild	India Assam	~ 1966 21-Sep-66 10-Apr-71	Capture Transfer Death
2.	6	Unnamed		M	~ 1957	Wild	Wild	India Delhi	~ 1959 11-Sep-59 20-Sep-90	Capture Transfer Death
3.	7	Unnamed	437	F	~ 1957	Wild	Wild	India Delhi	~ 1959 11-Sep-59 4-Oct-70	Capture Transfer Death
4.	8	Unnamed		F	~ 1957	Wild	Wild	India Delhi Burma	~ 1959 23-Oct-59 6-Nov-69	Capture Transfer ltf
5.	9	Unnamed		M	~ 1957	Wild	Wild	India Delhi Burma	~ 1959 23-Oct-59 6-Nov-69	Capture Transfer ltf
6.	10	Unnamed		F	~ 1957	Wild	Wild	India Delhi	~ 1959 23-Oct-59 31-Dec-76	Capture Transfer Death
7.	11	Unnamed	445	F	~ 1957	Wild	Wild	India Delhi	~ 1959 23-Oct-59 23-Nov-67	Capture Transfer Death
8.	12	Unnamed		F	~ 1958	Wild	Wild	India Assam	~ 1966 21-Sep-66	Capture Transfer ltf
9.	13	Unnamed		M	~ 1960	Wild	Wild	India Hyderabad	~ 1960 20-Feb-64 24-Jul-83	Capture Transfer Death
10.	14	Unnamed		M	~ 1960	Wild	Wild	India Hyderabad	~ 1964 20-Feb-64 24-Jul-83	Capture Transfer Death
11.	16	Unnamed		M	18-Mar-62	6	7	Delhi	18-Mar-62 10-Oct-77	Birth Death
12.	19	Unnamed		F	~ 1963	Wild	Wild	India Nandankanan	~ 1965 29-Jan-66 16-Jun-84	Capture Transfer Death
13.	20	Unnamed		F	~ 1963	Wild	Wild	India Nandankanan	~ 1965 29-Jan-66 18-May-67	Capture Transfer Death
14.	21	Unnamed		F	~ 1964	Wild	Wild	India Delhi	~ 1966 29-Apr-66 20-Nov-77	Capture Transfer Death
15.	23	Unnamed		M	~ 1965	Wild	Wild	India Nandankanan	~ 1967 29-Mar-67 15-Nov-75	Capture Transfer Death
16.	26	Angel 171042	970	F	13-Jun-67	6	7	Delhi San Diego Zoo	13-Jun-67 9-Mar-71 6-Jan-93	Birth Transfer Death
17.	27	Linus 171041	969	M	1-Mar-67	6	10	Delhi San Diego Zoo	1-Mar-67 9-Mar-71 2-Apr-93	Birth Transfer Death

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
18.	28	Unnamed		F	~ 1968	Wild	Wild	India Delhi	~Mar 1970 26-Mar-70 8-Nov-85	Capture Transfer Death
19.	29	Unnamed		F	7-Jan-69	6	7	Delhi	7-Jan-69 13-Aug-82	Birth Death
20.	31	Unnamed		F	15-Jun-69	Wild	Wild	India Calcutta Adelaide	~ 1971 ~ 1971 18-Oct-71 18-Jul-85	Capture Transfer Transfer Death
21.	32	Unnamed	1000	F	~ 1969	Wild	Wild	India Calcutta Adelaide	~ 1971 ~ 1971 18-Oct-71 9-Feb-96	Capture Transfer Transfer Death
22.	34	Unnamed		F	~ 1970	Wild	Wild	India Assam	~ 1973 14-Aug-73 12-Apr-77	Capture Transfer Death
23.	35	Unnamed		F	19-May-70	6	10	Delhi	19-May-70 16-Mar-79	Birth Death
24.	36	Kaloo 2301		M	~ 1970	Wild	Wild	India Kanpur	30-Jun-73 6-Oct-73 3-Feb-94	Capture Transfer Death
25.	37	Unnamed		M	~ 1971	Wild	Wild	India Assam	~ 1973 8-Oct-73 8-Oct-73	Capture Transfer Death
26.	38	Unnamed		?	7-May-71	16	10	Delhi	7-May-71 1-Dec-81	Birth Death
27.	39	Unnamed		M	9-Sep-71	16	21	Delhi	9-Sep-71 6-Nov-84	Birth Death
28.	40	Unnamed		M	~ 1972	Wild	Wild	India Nandankanan	~ 1974 13-Feb-74 10-Feb-82	Capture Transfer Death
29.	41	Unnamed		F	~ 1972	Wild	Wild	India Nandankanan	~ 1974 13-Feb-74 29-Aug-75	Capture Transfer Death
30.	42	Unnamed		F	1-Apr-72	16	10	Delhi	1-Apr-72	Birth ltf
31.	43	Bhola 2302		M	~ 1972	Wild	Wild	India Kanpur	~ 1974 ~ 1974 31-Mar-87	Capture Transfer Death
32.	44	Budha 2303		M	~ 1972	Wild	Wild	India Kanpur	~ 1974 6-Nov-74 21-Jun-93	Capture Transfer Death
33.	45	Meeta 2304		F	~ 1973	Wild	Wild	India Kanpur	~ 1974 20-Jan-75 11-Aug-90	Capture Transfer Death
34.	46	Unnamed		?	14-Apr-73	16	21	Delhi	14-Apr-73 11-Jun-79	Birth Death
35.	47	Unnamed		F	28-Sep-73	16	10	Delhi	28-Sep-73 17-Jun-89	Birth Death
36.	48	Unnamed		F	24-Sep-74	16	29	Delhi	24-Sep-74 1-Dec-87	Birth Death
37.	49	Unnamed		F	10-Nov-74	16	10	Delhi	10-Nov-74 12-Nov-85	Birth Death
38.	50	Unnamed		F	24-May-75	16	21	Delhi	24-May-75 21-May-87	Birth Death

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
39.	51	Unnamed		M	~ 1976	Wild	Wild	India Trivandrum Chatbir	~ 1978 1-Jul-78 6-Mar-79 29-Sep-84	Capture Transfer Transfer Death
40.	52	Unnamed		F	~ 1976	Wild	Wild	India Trivandrum Chatbir	~ 1978 ~ 1978 6-Mar-79 1-Jul-81	Capture Transfer Transfer Death
41.	53	Unnamed		M	23-Mar-76	16	29	Delhi Jaipur	23-Mar-76 27-May-87 14-Oct-94	Birth Transfer Death
42.	54	Ram LTM6		M	26-May-76	16	35	Delhi Nandankanan	26-May-76 20-Jan-82 6-Mar-01	Birth Transfer Death
43.	55	Unnamed		F	13-Nov-76	16	21	Delhi	13-Nov-76 27-Aug-89	Birth Death
44.	56	Unnamed		F	20-Feb-77	78	79	Trivandrum	20-Feb-77 3-Sep-84	Birth Death
45.	57	Unnamed	1311	F	18-Jul-77	16	42	Delhi Nandankanan	18-Jul-77 20-Jan-82 24-Aug-96	Birth Transfer Death
46.	58	Unnamed		M	26-Apr-78	39	35	Delhi Jaipur	26-Apr-78 11-Feb-81 16-Oct-82	Birth Transfer Death
47.	59	Unnamed	1371	F	29-Apr-78	39	29	Delhi Bhilai	29-Apr-78 ???? ~ 1991	Birth Transfer Itf
48.	60	Unnamed		?	11-Aug-78	39	35	Delhi	11-Aug-78 3-Sep-90	Birth Death
49.	61	Unnamed		F	29-Sep-78	78	79	Trivandrum	29-Sep-78 13-Aug-84	Birth Death
50.	62	Unnamed		?	1-Oct-78	39	42	Delhi	1-Oct-78 21-Oct-78	Birth Death
51.	63	Unnamed		?	17-Oct-78	39	48	Delhi	17-Oct-78 17-Oct-78	Birth Death
52.	64	Unnamed 5		F	~ 1979	Wild	Wild	India Hyderabad	~ 1983 12-Sep-83 10-Sep-85	Capture Transfer Death
53.	65	Unnamed		F	29-Jul-79	39	48	Delhi	29-Jul-79 16-Apr-91	Birth Death
54.	66	Neeta 2305		F	5-Aug-79	36	45	Kanpur	5-Aug-79 ~ 2000	Birth Death
55.	67	Unnamed		M	11-Sep-79	39	48	Delhi Bhilai	11-Sep-79 ???? ~ 1991	Birth Transfer Itf
56.	68	Unnamed		?	1-Oct-79	39	42	Delhi	1-Oct-79 3-Jan-80	Birth Death
57.	78	Unnamed		M	~ 1973	Wild	Wild	India Trivandrum Jaipur	30-Jun-75 9-Dec-75 12-May-81 18-Nov-96	Capture Transfer Transfer Death
58.	79	Unnamed		F	~ 1973	Wild	Wild	India Trivandrum Jaipur	~ 1975 16-Dec-75 12-May-81 10-Jun-90	Capture Transfer Transfer Death

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
59.	81	Soni		F	~ 1980	Wild	Wild	India Chatbir	~ 1981 26-Oct-81 16-Sep-89	Capture Transfer Death
60.	82	Mahiwal/Bugg		M	~ 1980	Wild	Wild	India Chatbir	~ 1981 26-Oct-81 16-Sep-89	Capture Transfer Death
61.	83	Rambo 101		M	????	Wild	Wild	India Bannerghatta	28-Dec-06 28-Dec-06	Capture Transfer
62.	86	Nethra M00036 00063AFF83	3489	F	~ 1982	Wild	Wild	India Bannerghatta Mysore	???? ???? 20-Jan-92 12-Mar-15	Capture Transfer Transfer Death
63.	87	Unnamed		M	4-Apr-80	39	47	Delhi	4-Apr-80	Birth lft
64.	88	Unnamed		?	10-Nov-80	39	49	Delhi	10-Nov-80 13-Nov-80	Birth Death
65.	91	Unnamed		F	1-May-81	39	42	Delhi	1-May-81 6-Feb-00	Birth Death
66.	92	Unnamed		F	10-Jul-81	39	49	Delhi	10-Jul-81	Birth lft
67.	93	Pavan ML0001		M	~ 1982	Wild	Wild	India Hyderabad	~ 1983 12-Jul-83 21-Oct-90	Capture Transfer Death
68.	94	Sumitra ML0002		F	~ 1982	Wild	Wild	India Hyderabad	~ 1984 8-Mar-84 2-Feb-90	Capture Transfer Death
69.	95	Unnamed		F	~ 1982	Wild	Wild	India Hyderabad	~ 1984 8-Mar-84 14-Jan-97	Capture Transfer Death
70.	96	Mohan	1943	M	~ 1982	Wild	Wild	India Trivandrum	~ 1987 22-Apr-87	Capture Transfer
71.	97	Unnamed 10029	1540	F	31-Mar-82	154	56	Trivandrum Veermata	31-Mar-82 22-Dec-92 9-Nov-93	Birth Transfer Death
72.	98	Kalua 1KAN3		M	28-Apr-82	39	47	Delhi Lucknow Kanpur	28-Apr-82 24-Mar-88 23-Jan-96 ~ 2000	Birth Transfer Transfer Death
73.	99	Unnamed		F	2-Jul-82	39	48	Delhi Chatbir	2-Jul-82 21-Oct-89 17-Aug-95	Birth Transfer Death
74.	100	Unnamed		F	26-Aug-82	39	42	Delhi Lucknow	26-Aug-82 24-Mar-88 10-Jun-88	Birth Transfer Death
75.	101	240001	1651	M	2-Dec-82	39	50	Delhi	2-Dec-82 2-Apr-98	Birth Death
76.	102	Unnamed	1736	M	~ 1983	Wild	Wild	India Peshwe Pune	~ 1983 ~ 1983 11-Jan-84 27-Dec-06	Capture Transfer Transfer Death
77.	103	Bori		F	26-Nov-82	78	79	Jaipur Tripura	26-Nov-82 26-Apr-90 3-Aug-00	Birth Transfer Death
78.	104	Jaya		F	~ 1983	Wild	Wild	India Madras	???? ????	Capture Transfer

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
								Assam	15-Jun-86 31-Jan-92	Transfer Death
79.	105	Raman		M	~ 1983	Wild	Wild	India Kodanadu	~ 1995 14-Nov-95	Capture Transfer lft
80.	106	Raju	1652	M	24-Jan-83	154	61	Trivandrum	24-Jan-83 10-Nov-06	Birth Death
81.	107	Simba 891092 91049		M	14-May-83	39	47	Delhi Ny Bronx Baltimore	14-May-83 31-Mar-89 15-May-91 24-Sep-03	Birth Transfer Transfer Death
82.	108	Unnamed		M	17-Jul-83	36	45	Kanpur	17-Jul-83 18-Jul-83	Birth Death
83.	109	FEMAL2		F	4-Oct-83	54	57	Nandankanan	4-Oct-83 24-Aug-96	Birth Death
84.	110	Mohan 100001		M	~ 1984	Wild	Wild	India Guindy Madras	7-Apr-90 7-Apr-90 26-May-90	Capture Transfer Transfer
85.	111	Raja	3289	M	~ 1984	Wild	Wild	India Parassinikada vu	~ 1986 1-Feb-86	Capture Transfer
86.	112	Rama 20487 502160 000634EA4C	1713	M	19-Feb-84	Wild	161	Trivandrum Mysore Toronto Sandiego Zoo Sd-Wap Sandiego Zoo	19-Feb-84 4-Aug-84 9-Mar-86 5-Jun-02 25-Jul-02 6-Jun-05 18-Sep-13	Birth Transfer Transfer Transfer Transfer Transfer Death
87.	113	Unnamed		F	22-Jun-84	36	45	Kanpur	22-Jun-84 23-Jun-84	Birth Death
88.	114	Unnamed		?	21-Nov-84	39	42	Delhi	21-Nov-84 21-Nov-84	Birth Death
89.	116	Laxmi		F	~ 1985	Wild	Wild	India Kodanadu Trivandrum	~ 1988 5-Sep-88 15-Dec-02	Capture Transfer Transfer
90.	117	Mani 0006B73EB1		F	~ 1985	Wild	Wild	India Trivandrum Hyderabad	~ 1987 13-Jul-87 24-Sep-03	Capture Transfer lft
91.	118	Salsa 891093 91M059 102005	1854	F	20-Feb-85	67	50	Delhi Ny Bronx Colo Sprg Garden City	20-Feb-85 31-Mar-89 13-Aug-91 17-May-02 28-Jan-04	Birth Transfer Transfer Transfer Death
92.	119	Unnamed Female3		F	28-Mar-85	54	57	Nandankanan	28-Mar-85 9-Apr-91	Birth Death
93.	120	Bhama 00-0610-DG53		F	~ 1986	Wild	Wild	India Guindy Madras	~ 1990 7-Apr-90 26-May-90 9-Dec-10	Capture Transfer Transfer Death
94.	121	Bindu	2053	F	~ 1986	Wild	Wild	India Trivandrum	~ 1988 25-May-88	Capture Transfer
95.	123	Majnu		M	1-Apr-86	82	81	Chatbir	1-Apr-86	Birth
96.	124	Unnamed	1860	M	6-May-86	36	45	Kanpur	6-May-86 7-May-86	Birth Death
97.	125	Unnamed		F	????	Unk	Unk	Unknown	????	Birth

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
								Bannerghatta	????	lft
98.	126	Ganesh	2163	M	~ 1986	Wild	Wild	India Trivandrum	~ 1989 18-May-89	Capture Transfer
99.	127	Gunjan		F	~ 1987	Wild	Wild	India Kodanadu Trivandrum	~ 1989 13-Dec-89 15-Dec-02	Capture Transfer Transfer
100.	128	Unnamed		M	19-Jan-87	54	109	Nandankanan	19-Jan-87 19-Jan-87	Birth Death
101.	129	Unnamed MALE2		M	21-Jan-87	54	57	Nandankanan	21-Jan-87 26-May-91	Birth Death
102.	131	Laila		M	14-Nov-87	82	81	Chatbir	14-Nov-87 25-Sep-90	Birth Death
103.	132	Rukumani		F	~ 1988	Wild	Wild	India Madras	~ 1990 26-May-90 25-May-97	Capture Transfer Death
104.	133	Ramu 00-0611-IA D5		M	~ 1988	Wild	Wild	India Madras Guindy	~ 1994 20-Jun-94 7-May-04 10-May-09	Capture Transfer Transfer Death
105.	134	Ranjan		M	~ 1988	Wild	Wild	India Kodanadu Trivandrum	~ 1989 23-Sep-89 15-Dec-02 27-Aug-03	Capture Transfer Transfer Death
106.	135	Muni		F	31-Jan-88	330	332	Assam	31-Jan-88	Birth
107.	136	Thara	2027	F	13-Mar-88	106	97	Trivandrum Hyderabad	13-Mar-88 22-Sep-03	Birth lft
108.	137	Unnamed		?	1-Jun-87	67	47	Delhi	1-Jun-87 11-Jun-88	Birth Death
109.	138	Unnamed 240004	2075	M	19-Jul-88	67	42	Delhi	19-Jul-88	Birth
110.	140	Unnamed		M	3-Nov-88	54	57	Nandankanan	3-Nov-88 20-Aug-89	Birth Death
111.	141	Unnamed		M	14-Nov-88	54	109	Nandankanan	14-Nov-88 14-Nov-88	Birth Death
112.	142	Babu	2067	M	30-Jun-90	215	203	Thrissur Trivandrum Hyderabad	30-Jun-90 16-Nov-94 22-Sep-03	Birth Transfer lft
113.	143	Nalu Male3	2127	M	25-Jan-89	54	119	Nandankanan	25-Jan-89 3-Jul-10	Birth Death
114.	145	Unnamed		F	????	Unk	Unk	Calcutta Rangoon	???? 20-Feb-71	Birth lft
115.	146	Unnamed		F	????	Unk	Unk	Calcutta Kuala Lumpur	???? 15-Dec-70	Birth lft
116.	148	Unnamed		F	????	Wild	Wild	India Madras	~ 1983 9-Feb-83	Capture lft
117.	154	Kishore		M	~ 1975	Wild	Wild	India Trivandrum Madras	~ 1980 3-Jun-80 18-Sep-85	Capture Transfer lft
118.	159	Manja ZAK02	1596	M	????	Wild	Wild	India Trivandrum Mysore	???? ???? 7-Dec-82 30-Mar-03	Capture Transfer Transfer Death
119.	160	Leena	1357	F	????	Wild	Wild	India Trivandrum	~ 1980 14-May-85 5-Aug-85	Capture Transfer Death

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
120.	161	Sita 20488	1668	F	~ 1980	Wild	Wild	India Trivandrum Mysore Toronto	~ 1984 14-Feb-84 4-Aug-84 9-Mar-86 15-Nov-99	Capture Transfer Transfer Transfer Death
121.	162	Unnamed		F	4-Nov-88	78	79	Jaipur	4-Nov-88 16-Sep-99	Birth Death
122.	165	Rajan	1944	M	????	Wild	Wild	India Trivandrum	~ 1987 21-Jun-87 16-Aug-87	Capture Transfer Death
123.	166	Unnamed		M	9-Jan-90	54	109	Nandankanan	9-Jan-90 29-Sep-94	Birth Death
124.	167	Geeta 3		F	19-Feb-90	67	59	Bhilai	19-Feb-90 6-Sep-04	Birth Death
125.	168	Unnamed		F	16-Mar-90	54	57	Nandankanan	16-Mar-90 5-Sep-99	Birth Death
126.	170	Shahidhar/Sh ML0003		M	28-May-90	110	243	Madras Hyderabad	28-May-90 27-Aug-92 10-Feb-11	Birth Transfer Death
127.	172	Pachi		F	~ 1996	Wild	Wild	India Trivandrum	~ 1998 20-Nov-98	Capture Transfer
128.	173	Malar		F	31-Dec-91	110	120	Madras	31-Dec-91 8-Sep-94	Birth Death
129.	174	Sekar		M	~ 1992	Wild	Wild	India Madras	~ 1993 2-May-93 8-Aug-93	Capture Transfer Death
130.	175	Priya M00038 00063B3B7F	2274	F	~ 1982	Wild	Wild	India Bannerghatta Mysore	~ 1990 ~ 1990 10-Oct-92	Capture Transfer Transfer
131.	176	Rama ZAK05	2242	M	~ 1990	Wild	Wild	India Shimoga Mysore	~ 1990 ~ 1990 13-Mar-96 31-Jan-98	Capture Transfer Transfer Death
132.	177	Krishna LTM17 LTMP1	2403	M	12-Jan-92	54	57	Nandankanan Patna	12-Jan-92 26-Mar-95 10-Nov-12	Birth Transfer Death
133.	178	Geetha		F	14-Jan-92	110	132	Madras	14-Jan-92 21-Jul-95	Birth Death
134.	179	Unnamed LTM18 LTMP2		F	29-Jan-92	54	109	Nandankanan Patna	29-Jan-92 26-Mar-95 11-Dec-00	Birth Transfer Death
135.	180	Padan/Sankar		M	18-Aug-92	110	120	Madras	18-Aug-92 21-Jun-95	Birth Death
136.	182	Vijayan 100003 00-0611-8273	2468	M	1-Oct-93	110	132	Madras	1-Oct-93 2-Sep-12	Birth Death
137.	183	Umar		M	21-Dec-93	110	120	Madras Guindy	21-Dec-93 7-Aug-98	Birth If
138.	184	Shanthi M00037 00063AFBBC	2263	F	~ 1990	Wild	Wild	India Mangalore Mysore	~ 1992 ~ 1992 13-Mar-96 15-Jul-11	Capture Transfer Transfer Death
139.	185	Rani		F	~ 1994	Wild	Wild	India Parassinikada vu	~ 1995 7-Sep-95	Capture Transfer

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140.	186	Seenu 00-0611-7E4A		M	4-Jan-95	110	132	Madras Trivandrum	4-Jan-95 27-Dec-03	Birth Transfer
141.	187	Unnamed Aazp13 100004		F	14-Jun-95	110	120	Madras	14-Jun-95	Birth
142.	188	Unnamed Aazp29 100005		F	13-Jul-96	110	132	Madras Guindy Madras	13-Jul-96 7-Aug-98 12-Mar-04	Birth Transfer Transfer
143.	189	Lingan 00-0611-7E09		M	17-Sep-96	110	120	Madras Mysore	17-Sep-96 18-Dec-03 ????	Birth Loan to Death
144.	190	Unnamed Aazp-17 100006 00.0611.41 BE		F	27-May-98	110	120	Madras	27-May-98	Birth
145.	191	Apsara 100007 00.00611-1F1F		F	~ 1997	Wild	Wild	India Madras	4-Aug-99 4-Aug-99	Capture Transfer
146.	192	Mani		M	26-Oct-99	110	120	Madras	26-Oct-99 28-Sep-02	Birth Death
147.	193	Unnamed		F	????	Wild	Wild	India Renuka Chatbir	???? ???? 21-Apr-95	Capture Transfer lft
148.	194	Unnamed		M	????	Wild	Wild	India Calcutta	~ 1992 30-Sep-92 3-Jan-01	Capture Transfer Death
149.	195	Unnamed		F	????	Wild	Wild	India Calcutta	~ 1992 20-Feb-92 9-Sep-08	Capture Transfer Death
150.	196	Unnamed		M	~ 1980	Wild	Wild	India Voc Pk zoo	~ 1980 ~ 1980	Capture Transfer lft
151.	197	Unnamed		F	11-Dec-93	78	162	Jaipur	11-Dec-93 30-Jan-04	Birth Death
152.	198	Unnamed		?	20-May-94	78	162	Jaipur	20-May-94 15-Jun-94	Birth Death
153.	199	Unnamed		M	15-Oct-95	78	162	Jaipur	15-Oct-95 30-Apr-05	Birth Death
154.	200	Unnamed		M	10-Jun-99	199	197	Jaipur	10-Jun-99	Birth lft
155.	201	Unnamed		F	????	Wild	Wild	India Thrissur	~ 1988 17-Apr-88 7-Mar-93	Capture Transfer Death
156.	203	Unnamed		F	30-Apr-74	208	204	Thrissur	30-Apr-74 24-Jan-96	Birth Death
157.	204	Unnamed		F	~ 1967	Wild	Wild	India Thrissur	~ 1973 5-Sep-73 1-Aug-82	Capture Transfer Death
158.	208	Unnamed		M	~ 1955	Wild	Wild	India Thrissur	~ 1968 14-Sep-68 19-Apr-74	Capture Transfer Death
159.	209	Unnamed		?	11-Oct-63	Mult	Mult	Delhi	11-Oct-63 22-Nov-64	Birth Death
160.	211	Seeta		F	~ 1977	Wild	Wild	India Jaipur	~ 1978 15-Mar-78	Capture Transfer

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
								Jodhpur Jaipur Kanpur	7-Mar-84 17-Oct-92 10-Sep-93 14-Jan-03	Transfer Transfer Transfer Death
161.	212	Unnamed		M	~ 1977	Wild	Wild	India Jaipur	~ 1978 15-Mar-78 17-Dec-83	Capture Transfer Death
162.	215	Unnamed		M	~ 1984	Wild	Wild	India Thrissur	~ 1986 1-May-86 23-Oct-03	Capture Transfer Death
163.	216	Unnamed		F	5-Jun-84	78	79	Jaipur	5-Jun-84 24-Aug-92	Birth Death
164.	217	Unnamed		F	30-Jan-86	78	79	Jaipur	30-Jan-86 1-Dec-86	Birth Death
165.	218	Unnamed		M	~ 1986	Wild	Wild	India Thrissur	~ 1988 11-Aug-88 28-Feb-05	Capture Transfer Death
166.	219	Ram 1	T1033	M	26-Feb-86	67	59	Bhilai	26-Feb-86 8-Jan-11	Birth Death
167.	220	Unnamed 1004		M	~ 1987	Wild	Wild	India Thrissur	5-Feb-90 5-Feb-90	Capture Transfer
168.	221	Shyam 2		M	10-Apr-87	67	59	Bhilai	10-Apr-87 21-Apr-11	Birth Death
169.	222	Unnamed		F	4-May-87	78	79	Jaipur	4-May-87 15-Oct-97	Birth Death
170.	226	Unnamed		F	19-Jul-92	78	162	Jaipur	19-Jul-92 11-Mar-93	Birth Death
171.	228	Unnamed		M	????	Unk	Unk	Unknown Thrissur	???? 22-Mar-59 29-Oct-71	Birth Transfer Death
172.	229	Unnamed		M	????	Unk	Unk	Unknown Thrissur Trivandrum	???? 9-Jul-64 5-Jan-72	Birth Transfer lft
173.	230	Unnamed		F	????	Unk	Unk	Trivandrum Thrissur	???? 8-Sep-64 6-Jun-71	Birth Transfer Death
174.	231	Unnamed		F	????	Unk	Unk	Unknown Thrissur	???? 8-Dec-71 15-Jan-75	Birth Transfer Death
175.	232	Unnamed		F	????	Unk	Unk	Unknown Thrissur	???? 23-Jun-72 16-Aug-75	Birth Transfer Death
176.	233	Unnamed		F	????	Unk	Unk	Unknown Thrissur	???? 18-Feb-73	Birth lft
177.	234	Reena 10023	1007	F	~ 1970	Wild	Wild	India Veermata	~ 1971 ~ 1971 6-Nov-86	Capture Transfer Death
178.	235	Unnamed		M	????	Unk	Unk	Trivandrum Thrissur	???? 12-Jun-76	Birth Transfer lft
179.	236	Unnamed		M	????	Unk	Unk	Trivandrum Thrissur	???? 11-Oct-75	Birth Transfer lft
180.	237	Unnamed		F	????	Unk	Unk	Unknown Thrissur	???? 31-Mar-77	Birth Transfer

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
									24-Jan-96	Death
181.	238	Meena M15	1283	F	~ 1974	Wild	Wild	India Veermata	22-Nov-76 22-Nov-76 1-May-95	Capture Transfer Death
182.	239	Jani 10026	1284	M	~ 1975	Wild	Wild	India Veermata	~ 1976 22-Nov-76 30-Jun-93	Capture Transfer Death
183.	240	Unnamed		F	????	Unk	Unk	Unknown Thrissur	???? 8-May-89 18-Jan-99	Birth Transfer Death
184.	241	Unnamed		M	????	Unk	Unk	Unknown Thrissur	???? 19-Jul-85 3-May-86	Birth Transfer Death
185.	242	Unnamed		M	????	Unk	Unk	Unknown Thrissur	???? 3-Jul-89 18-Jul-90	Birth Transfer Death
186.	243	Radha		F	~ 1985	Wild	Wild	India Guindy Madras	7-Apr-90 7-Apr-90 26-May-90 16-Nov-95	Capture Transfer Transfer Death
187.	244	Ravi	1851	M	31-Mar-86	Unk	Unk	Trivandrum	31-Mar-86 20-Apr-86	Birth Death
188.	245	Ramu 10028	1564	M	13-Jul-81	239	238	Veermata	13-Jul-81 13-Sep-93	Birth Death
189.	246	Kamraj		M	~ 1991	Wild	Wild	India Guindy Madras	???? ???? 12-Mar-04 13-Dec-06	Capture Transfer Transfer Death
190.	248	Krishna M00035 00063B2551		M	~ 1991	Wild	Wild	Karnataka Mysore	~ 4 Nov 2001 4-Nov-01 30-Sep-12	Capture Transfer Death
191.	251	Basanti LTMP6	3307	F	~ 1993	Wild	Wild	India Patna	15-Jul-98 15-Jul-98	Capture Transfer
192.	252	Mani/Ragav		M	~ 1997	Wild	Wild	India Madras	~14 May 2005 14-May-05 10-May-09	Capture Transfer Death
193.	253	Geetha M00005 00063B1763		F	~ 1997	Wild	Wild	India Mangalore Mysore	10-Jan-01 10-Jan-01 28-Oct-06 14-Nov-11	Capture Transfer Transfer Death
194.	254	Unnamed LTMP3		F	29-Sep-97	177	179	Patna	29-Sep-97 29-Sep-97	Birth Death
195.	255	Unnamed LTMP4	3308	F	~ Sep 1992	Wild	Wild	India Patna	6-Mar-98 6-Mar-98 13-Apr-00	Capture Transfer Death
196.	256	Venket		M	15-Jun-00	182	120	Madras	15-Jun-00 11-Dec-09	Birth Death
197.	258	Unnamed		F	????	Wild	Wild	India Parassinikada vu	~ 2008 ~ 2008 ~ 2010	Capture Transfer Death
198.	259	Viji		F	14-Apr-01	110	120	Madras	14-Apr-01 16-Feb-10	Birth Death

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
199.	260	Ramya AAZP50 981098102057 903		F	~ 2001	Wild	Wild	India Madras	~12 Sep 08 12-Sep-08 24-Apr-09	Capture Transfer Death
200.	261	Ankitha MOOOO3 00063B96F1	3496	F	~ 2001	Wild	Wild	Karnataka Mysore	~20 Oct 2007 20-Oct-07	Capture Transfer
201.	262	Rajkumari 4		F	16-Dec-01	219	167	Bhilai	16-Dec-01 5-Jan-09	Birth Death
202.	263	Dass 100455 240006		M	17-Jan-02	182	187	Madras Delhi	17-Jan-02 1-Oct-06	Birth Transfer
203.	264	Unnamed		?	10-Jul-02	186	120	Madras	10-Jul-02 10-Jul-02	Birth Death
204.	265	Aswath M00006 00063B2623	T0401	M	~ 2002	Wild	Wild	India Mysore Singapore	~21 Jul 2007 21-Jul-07 27-Oct-13	Capture Transfer Transfer
205.	266	Rajesh		M	????	Wild	Wild	India Trivandrum	~16 Aug 2002 16-Aug-02	Capture Transfer
206.	267	Kiran		M	????	Wild	Wild	India Trivandrum	~15 Dec 02 15-Dec-02	Capture Transfer
207.	268	Rani 240005		F	~ 1995	Wild	Wild	India Trivandrum Delhi	~15 Dec 02 15-Dec-02 24-Mar-04 5-Jan-10	Capture Transfer Transfer Death
208.	269	Unnamed		M	9-Jan-03	189	191	Madras	9-Jan-03 9-Jan-03	Birth Death
209.	270	Raman		M	????	Wild	Wild	India Trivandrum	~ 8 Feb -05 8-Feb-05	Capture Transfer
210.	271	Murugan 100010 9.81098E+14		M	23-Jul-03	182	187	Madras	23-Jul-03 28-Jan-13	Birth Death
211.	272	Banu		F	25-Nov-03	186	120	Madras Delhi	25-Nov-03 1-Oct-06	Birth Transfer
212.	273	Unnamed Aazp-27 100011		F	4-Jan-04	182	191	Madras	4-Jan-04	Birth
213.	274	Sumi		F	11-Feb-04	182	190	Madras	11-Feb-04 15-Feb-04	Birth Death
214.	275	Kumari 5		F	1-Jul-04	219	167	Bhilai	1-Jul-04	Birth
215.	276	Appu M00034 00063B1431	3500	M	~ 2004	Wild	Wild	India Mysore	~ 6 Nov 2006 6-Nov-06	Capture Transfer
216.	277	Unnamed Aazp39 100012 9.81098E+14		F	16-Aug-04	182	187	Madras	16-Aug-04	Birth
217.	278	Unnamed		?	11-Feb-05	256	188	Madras	11-Feb-05 12-Feb-05	Birth Death
218.	279	Unnamed		F	5-Apr-05	182	190	Madras	5-Apr-05	Birth

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		Aazp-36 100014 9.81098E+14								
219.	280	Kannan		M	13-May-05	186	121	Trivandrum	13-May-05	Birth
220.	281	Swathi M00004 00063B010B	3501	F	~ 2005	Wild	Wild	India Mysore	~21 Jul 07 21-Jul-07	Capture Transfer
221.	282	Unnamed		?	16-Jul-05	256	120	Madras	16-Jul-05 23-Jul-05	Birth Death
222.	283	Unnamed		?	11-Aug-05	256	259	Madras	11-Aug-05 3-Sep-05	Birth Death
223.	284	Anand 100015 9.81098E+14		M	5-Nov-05	182	191	Madras	5-Nov-05	Birth
224.	285	Guna	3328	F	13-May-06	256	188	Madras	13-May-06 19-Sep-10	Birth Death
225.	286	Unnamed		M	2-Jul-06	182	187	Madras	2-Jul-06 ~ 2 Jul 06	Birth Death
226.	287	Unnamed		M	2-Jul-06	182	187	Madras	2-Jul-06 ~ 2 Jul 06	Birth Death
227.	288	Abhi M00007 00063B4C07	3502	M	~Aug 06	Wild	Wild	India Mysore	~ 5 Nov-06 5-Nov-06	Capture Transfer
228.	289	Unnamed		M	25-Aug-06	256	120	Madras	25-Aug-06 2-Sep-06	Birth Death
229.	290	Unnamed		?	21-Oct-06	186	116	Trivandrum	21-Oct-06 24-Oct-06	Birth Death
230.	291	Manju		F	1-Mar-07	186	121	Trivandrum	1-Mar-07	Birth
231.	292	Vimala 100017		F	25-Apr-07	256	259	Madras	25-Apr-07	Birth
232.	293	Unnamed		?	14-May-07	182	187	Madras	14-May-07 28-May-07	Birth Death
233.	294	Unnamed Aazp-43 100018	3331	M	9-Jun-07	182	191	Madras	9-Jun-07	Birth
234.	295	Unnamed AAZP44		?	18-Jun-07	182	190	Madras	18-Jun-07 19-Jun-07	Birth Death
235.	296	Unnamed AAZP45		?	2-Aug-07	256	120	Madras	2-Aug-07 2-Aug-07	Birth Death
236.	297	Unnamed		?	2-Aug-07	256	120	Madras	2-Aug-07 2-Aug-07	Birth Death
237.	298	Aazp-46 100019		M	1-Sep-07	256	188	Madras	1-Sep-07	Birth
238.	299	Unnamed		M	27-Sep-07	263	272	Delhi	27-Sep-07 12-Nov-10	Birth Death
239.	300	Unnamed Aazp-47 100020		F	20-Mar-08	182	273	Madras	20-Mar-08	Birth
240.	301	Unnamed Aazp-48 100021		M	5-Apr-08	182	187	Madras	5-Apr-08	Birth
241.	302	Aazp-49 100022		M	11-Aug-08	256	259	Madras	11-Aug-08 3-Dec-09	Birth Death
242.	303	Unnamed		M	20-Nov-08	Unk	272	Delhi	20-Nov-08	Birth
243.	304	Unnamed		F	19-Feb-09	182	191	Madras	19-Feb-09	Birth

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		Aazp-51 100024								
244.	305	Ragavi 100025		F	16-Apr-09	256	188	Madras	16-Apr-09	Birth
245.	306	Ranjani AAZP55		F	10-Dec-09	256	188	Madras	10-Dec-09 26-Apr-12	Birth Death
246.	307	Unnamed Aazp-53 100026		M	2-Aug-10	182	273	Madras	2-Aug-10	Birth
247.	308	Unnamed Aazp-54 100027		M	12-Aug-10	182	191	Madras	12-Aug-10	Birth
248.	309	Unnamed	T1055	F	7-Sep-10	138	272	Delhi	7-Sep-10	Birth
249.	310	Radha LTMP5		F	~ 1992	Wild	Wild	India Patna	18-Nov-98 19-Nov-98 1-Nov-08	Capture Transfer Death
250.	311	Unnamed 72390		F	????	Unk	Unk	Unknown Patna	???? ????	Birth lft
251.	312	Radha		F	????	Wild	Wild	India Trivandrum	~15 Jun 2002 15-Jun-02	Capture Transfer
252.	313	Kuttan		M	????	Wild	Wild	India Trivandrum	~26 May 2008 26-May-08	Capture Transfer
253.	314	Unnamed		F	????	Wild	Wild	India Shillong	~12 May 1998 13-May-98	Capture Transfer lft
254.	315	Unnamed		F	????	Wild	Wild	India Shillong	~ 6 Jun 1994 7-Jun-94	Capture Transfer lft
255.	316	Unnamed		M	????	Wild	Wild	India Shillong	~ 1 Mar 2000 2-Mar-00	Capture Transfer lft
256.	317	Raja 130		M	~ 1999	Wild	Wild	India Lucknow	1-Aug-03 1-Aug-03	Capture Transfer
257.	318	10030 490000	266	M	~ 1949	Unk	Unk	Veermata Melbourne	~ 1949 1-Dec-49 1-Aug-58	Birth Transfer Death
258.	319	Unnamed 10031 490001	267	M	~ Jul 1949	Unk	Unk	Veermata Melbourne	~ Jul 1949 1-Dec-49 1-Jan-59	Birth Transfer Death
259.	320	Unnamed 10032 490002	287	F	~ Jul 1949	Unk	Unk	Veermata Melbourne	~ Jul 1949 1-Dec-49 1-Jun-64	Birth Transfer Death
260.	321	Unnamed 10033 490003	288	F	~ Jul 1949	Unk	Unk	Veermata Melbourne	~ Jul 1949 1-Dec-49 1-Jul-64	Birth Transfer Death
261.	322	Kunda 10024	1005	F	~ 1969	Wild	Wild	India Veermata	~ 1971 29-Nov-71 17-Jul-89	Capture Transfer Death
262.	323	Teena M16	1285	F	~ 1973	Wild	Wild	India Veermata	22-Nov-76 22-Nov-76	Capture Transfer

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		10027							11-Sep-85	Death
263.	324	Raja M14		M	~ 1977	Unk	Unk	Unknown Veermata	~ 1977 8-May-85 10-Jun-93	Birth Transfer Death
264.	325	Sharavathi	1528	F	~ 1979	Wild	Wild	India Mysore	~ 1981 ~ 1981 ~ 1998	Capture Transfer Death
265.	326	Unnamed 240002		F	5-Sep-82	Unk	Unk	Delhi	5-Sep-82 16-Jul-06	Birth Death
266.	327	Unnamed PUNE01		M	~ 1983	Wild	Wild	India Pune	11-Jan-84 11-Jan-84 27-Dec-06	Capture Transfer Death
267.	328	Unnamed 31		M	~ 1985	Unk	Unk	Madras Vadodara	~ 1985 6-Mar-89 ~ 1995	Birth Transfer Death
268.	329	Unnamed 32		F	~ 1984	Wild	Wild	India Vadodara	~ 1986 17-Mar-86 ~ 1996	Capture Transfer Death
269.	330	Zombo/Jambo		M	????	Wild	Wild	India Madras Assam	???? ???? 15-Jun-86 7-Sep-89	Capture Transfer Transfer Death
270.	331	Guno		F	????	Wild	Wild	India Madras Assam	???? ???? 15-Jun-86 25-Apr-89	Capture Transfer Transfer Death
271.	332	Jamini		F	????	Wild	Wild	India Madras Assam	???? ???? 15-Jun-86 22-Oct-90	Capture Transfer Transfer Death
272.	333	Unnamed		F	????	Wild	Wild	India Madras	26-May-87 26-May-87 9-Dec-09	Capture Transfer Death
273.	334	Beena 0006B72390		F	????	Unk	Unk	Unknown Hyderabad	???? 12-Oct-01	Birth Transfer
274.	335			?	17-Mar-11	248	281	Mysore	17-Mar-11 17-Mar-11	Birth Death
275.	336	Vimal 100349		M	19-Jun-11	271	292	Madras	19-Jun-11	Birth
276.	337	Ramesh 100348		M	2-Sep-11	271	188	Madras	2-Sep-11	Birth
277.	338	Unnamed M00765		M	10-Sep-11	248	261	Mysore	10-Sep-11 27-Oct-11	Birth Death
278.	339	Arjun 100347		M	5-Jan-12	182	191	Madras	5-Jan-12	Birth
279.	340	Renuka 102		F	~ 2011	Wild	Wild	India Bannerghatta	11-Jan-12 11-Jan-12	Capture Transfer
280.	341	Unnamed		?	6-Mar-13	Unk	272	Delhi	6-Mar-13	Birth
281.	342	Unnamed AAZP59		M	15-Mar-13	271	305	Madras	15-Mar-13 17-Mar-13	Birth Death
282.	343	Unnamed Aazp-60 100421		M	19-Mar-13	271	292	Madras	19-Mar-13	Birth
283.	344	Swapna		?	8-May-13	276	281	Mysore	8-May-13	Birth
284.	345	Unnamed		F	22-May-13	294	304	Madras	22-May-13	Birth

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		Aazp-61 100422								
285.	346	Unnamed 100526		F	1-May-14	294	300	Madras	1-May-14	Birth
286.	347	Unnamed Aazp63 100527		?	25-May-14	298	305	Madras	25-May-14	Birth
287.	348	Sitha		F	????	Wild	Wild	India Thrissur	3-Jan-13 3-Jan-13	Capture Transfer
Totals: 123.140.24 (287)										

Appendix II

Living population of Lion tailed macaque (*Macaca silenus*)

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
Assam- Assam State Zoo cum Botanical Garden										
1.	135	Muni		F	31-Jan-88	330	332	Assam	31-Jan-88	Birth
Totals: 0.1. 0 (1)										
Bannerghatta- Bannerghatta National Park										
1.	83	Rambo 101		M	????	Wild	Wild	India Bannerghatta	28-Dec-06 28-Dec-06	Capture Transfer
2.	340	Renuka 102		F	~ 2011	Wild	Wild	India Bannerghatta	11-Jan-12 11-Jan-12	Capture Transfer
Totals: 1.1. 0 (2)										
Bhilai- Maitri Baag Zoo										
1.	275	Kumari		F	1-Jul-04	219	167	Bhilai	1-Jul-04	Birth
Totals: 0.1. 0 (1)										
Chatbir- Mahendra Chaudhury Zoological Park										
1.	123	Majnu		M	1-Apr-86	82	81	Chatbir	1-Apr-86	Birth
Totals: 1.0. 0 (1)										
Delhi- National Zoological Park										
1.	138	Unnamed 240004	2075	M	19-Jul-88	67	42	Delhi	19-Jul-88	Birth
2.	263	Dass 100455 240006		M	17-Jan-02	182	187	Madras Delhi	17-Jan-02 1-Oct-06	Birth Transfer
3.	272	Banu		F	25-Nov-03	186	120	Madras Delhi	25-Nov-03 1-Oct-06	Birth Transfer
4.	303	Unnamed		M	20-Nov-08	Unk	272	Delhi	20-Nov-08	Birth
5.	309	Unnamed	T1055	F	7-Sep-10	138	272	Delhi	7-Sep-10	Birth
6.	341	Unnamed		?	6-Mar-13	Unk	272	Delhi	6-Mar-13	Birth
Totals: 3.2. 1 (6)										
Hyderabad- Nehru Zoological Park										
1.	334	Beena 0006B72390		F	????	Unk	Unk	Unknown Hyderabad	???? 12-Oct-01	Birth Transfer
Totals: 0.1. 0 (1)										
Lucknow- Lucknow Zoological Park										
1.	317	Raja		M	~ 1999	Wild	Wild	India	1-Aug-03	Capture
		130						Lucknow	1-Aug-03	Transfer
Totals: 1.0.0 (1)										
Madras- Arignar Anna Zoological Park										
1.	110	Mohan 100001		M	~ 1984	Wild	Wild	India Guindy Madras	7-Apr-90 7-Apr-90 26-May-90	Capture Transfer Transfer
2.	187	Unnamed Aazp13 100004		F	14-Jun-95	110	120	Madras	14-Jun-95	Birth
3.	188	Unnamed Aazp29 100005		F	13-Jul-96	110	132	Madras Guindy Madras	13-Jul-96 7-Aug-98 12-Mar-04	Birth Transfer Transfer
4.	190	Unnamed Aazp-17 100006 00.0611.41 BE		F	27-May-98	110	120	Madras	27-May-98	Birth
5.	191	Apsara 100007		F	~ 1997	Wild	Wild	India Madras	4-Aug-99 4-Aug-99	Capture Transfer

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		00.00611-1F1F								
6.	273	Unnamed Aazp-27 100011		F	4-Jan-04	182	191	Madras	4-Jan-04	Birth
7.	277	Unnamed AAZP39 100012 9.81098E+14		F	16-Aug-04	182	187	Madras	16-Aug-04	Birth
8.	279	Unnamed AAZP-36 100014 9.81098E+14		F	5-Apr-05	182	190	Madras	5-Apr-05	Birth
9.	284	Anand 100015 9.81098E+14		M	5-Nov-05	182	191	Madras	5-Nov-05	Birth
10.	292	Vimala 100017		F	25-Apr-07	256	259	Madras	25-Apr-07	Birth
11.	294	Unnamed AAZP-43 100018	3331	M	9-Jun-07	182	191	Madras	9-Jun-07	Birth
12.	298	Unnamed AAZP-46 100019		M	1-Sep-07	256	188	Madras	1-Sep-07	Birth
13.	300	Unnamed AAZP-47 100020		F	20-Mar-08	182	273	Madras	20-Mar-08	Birth
14.	301	Unnamed AAZP-48 100021		M	5-Apr-08	182	187	Madras	5-Apr-08	Birth
15.	304	Unnamed AAZP-51 100024		F	19-Feb-09	182	191	Madras	19-Feb-09	Birth
16.	305	Ragavi 100025		F	16-Apr-09	256	188	Madras	16-Apr-09	Birth
17.	307	Unnamed AAZP-53 100026		M	2-Aug-10	182	273	Madras	2-Aug-10	Birth
18.	308	Unnamed AAZP-54 100027		M	12-Aug-10	182	191	Madras	12-Aug-10	Birth
19.	336	Vimal 100349		M	19-Jun-11	271	292	Madras	19-Jun-11	Birth
20.	337	Ramesh 100348		M	2-Sep-11	271	188	Madras	2-Sep-11	Birth
21.	339	Arjun 100347		M	5-Jan-12	182	191	Madras	5-Jan-12	Birth
22.	343	Unnamed AAZP-60 100421		M	19-Mar-13	271	292	Madras	19-Mar-13	Birth
23.	345	Unnamed AAZP-61 100422		F	22-May-13	294	304	Madras	22-May-13	Birth
24.	346	Unnamed 100526		F	1-May-14	294	300	Madras	1-May-14	Birth
25.	347	Unnamed		?	25-May-14	298	305	Madras	25-May-14	Birth

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
		AAZP63 100527								
Totals: 11.13.1 (25)										
Mysore- Sri Chamarajendra Zoological Garden										
1.	175	Priya M00038 00063B3B7F	2274	F	~ 1982	Wild	Wild	India Bannerghatta Mysore	~ 1990 ~ 1990 10-Oct-92	Capture Transfer Transfer
2.	261	Ankitha M00003 00063B96F1	3496	F	~ 2001	Wild	Wild	Karnataka Mysore	~20-Oct-07 20-Oct-07	Capture Transfer
3.	276	Appu M00034 00063B1431	3500	M	~ 2004	Wild	Wild	India Mysore	~6-Nov-06 6-Nov-06	Capture Transfer
4.	281	Swathi M00004 00063B010B	3501	F	~ 2005	Wild	Wild	India Mysore	~21-Jul-07 21-Jul-07	Capture Transfer
5.	288	Abhi M00007 00063B4C07	3502	M	~Aug 2006ñ1m	Wild	Wild	India Mysore	~5-Nov-06 5-Nov-06	Capture Transfer
6.	344	Swapna M01042		?	8-May-13	276	281	Mysore	8-May-13	Birth
Totals: 2.3.1 (6)										
Parassinikkadavu- Parassinikkadavu Reptile Park										
1.	111	Raja	3289	M	~ 1984	Wild	Wild	India Parassinikkadavu	~ 1986 1-Feb-86	Capture Transfer
2.	185	Rani		F	~ 1994	Wild	Wild	India Parassinikkadavu	~ 1995 7-Sep-95	Capture Transfer
Totals: 1.1. 0 (2)										
Patna- Sanjay Gandhi Biological Park										
1.	251	Basanti LTMP6	3307	F	~ 1993	Wild	Wild	India Patna	15-Jul-98 15-Jul-98	Capture Transfer
Totals: 0.1. 0 (1)										
Thrissur- State Museum and Zoo										
1.	220	Unnamed 1004		M	~ 1987	Wild	Wild	India Thrissur	5-Feb-90 5-Feb-90	Capture Transfer
2.	348	Sitha		F	????	Wild	Wild	India Thrissur	3-Jan-13 3-Jan-13	Capture Transfer
Totals: 1.1. 0 (2)										
Trivandrum- Thiruvananthapuram Zoo										
1.	96	Mohan	1943	M	~ 1982	Wild	Wild	India Trivandrum	~ 1987 22-Apr-87	Capture Transfer
2.	116	Laxmi		F	~ 1985	Wild	Wild	India Kodanadu Trivandrum	~ 1988 5-Sep-88 15-Dec-02	Capture Transfer Transfer
3.	121	Bindu	2053	F	~ 1986	Wild	Wild	India Trivandrum	~ 1988 25-May-88	Capture Transfer
4.	126	Ganesh	2163	M	~ 1986	Wild	Wild	India Trivandrum	~ 1989 18-May-89	Capture Transfer
5.	127	Gunjan		F	~ 1987	Wild	Wild	India Kodanadu Trivandrum	~ 1989 13-Dec-89 15-Dec-02	Capture Transfer Transfer

Sl. No.	National Studbook No.	House name Local ID Transponder No.	International Studbook No.	Sex	Birth Date	Sire	Dam	Location	Date	Event
6.	172	Pachi		F	~ 1996	Wild	Wild	India	~ 1998	Capture
								Trivandrum	20-Nov-98	Transfer
7.	186	Seenu 00-0611-7E4A		M	4-Jan-95	110	132	Madras Trivandrum	4-Jan-95 27-Dec-03	Birth Transfer
8.	266	Rajesh		M	????	Wild	Wild	India Trivandrum	~16-Aug-02 16-Aug-02	Capture Transfer
9.	267	Kiran		M	????	Wild	Wild	India Trivandrum	~15-Dec-02 15-Dec-02	Capture Transfer
10.	270	Raman		M	????	Wild	Wild	India Trivandrum	~8-Feb-05 8-Feb-05	Capture Transfer
11.	280	Kannan		M	13-May-05	186	121	Trivandrum	13-May-05	Birth
12.	291	Manju		F	1-Mar-07	186	121	Trivandrum	1-Mar-07	Birth
13.	312	Radha		F	????	Wild	Wild	India Trivandrum	~15-Jun-02 15-Jun-02	Capture Transfer
14.	313	Kuttan		M	????	Wild	Wild	India Trivandrum	~26-May-08 26-May-08	Capture Transfer
Totals: 8.6. 0 (14)										
TOTALS: 29.31.3 (63)										
13 Institutions										

Appendix III

Pedigree Chart Report LION-TAILED MACAQUE (*Macaca silenus*)

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Taxon Name: MACACA SILENUS                      Studbook Number: 1
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WILD                                          WILD
                        \     /
                        /     \
    dam \                / sire          Sex: Male
        \                /                Birth Date: ~ 1955
         \                /                Last Location: ASSAM (dead)
          \              /                House Name:
           \            /                Tattoo:
            \          /                Tag/Band:
             \        /
              \      /
               \    /
                \  /
                 \|/
                  1
  
```

```

=====
axon Name: MACACA SILENUS                      Studbook Number: 6
=====

WILD                                          WILD
                        \     /
                        /     \
    dam \                / sire          Sex: Male
        \                /                Birth Date: ~ 1957
         \                /                Last Location: DELHI (dead)
          \              /                House Name:
           \            /                Tattoo:
            \          /                Tag/Band:
             \        /
              \      /
               \    /
                \  /
                 \|/
                  6
  
```

```

=====
axon Name: MACACA SILENUS                      Studbook Number: 7
=====

WILD                                          WILD
                        \     /
                        /     \
    dam \                / sire          Sex: Female
        \                /                Birth Date: ~ 1957
         \                /                Last Location: DELHI (dead)
          \              /                House Name:
           \            /                Tattoo:
            \          /                Tag/Band:
             \        /
              \      /
               \    /
                \  /
                 \|/
                  7
  
```

```

=====
axon Name: MACACA SILENUS                      Studbook Number: 8
=====

WILD                                          WILD
                        \     /
                        /     \
    dam \                / sire          Sex: Female
        \                /                Birth Date: ~ 1957
         \                /                Last Location: BURMA
          \              /                House Name:
           \            /                Tattoo:
            \          /                Tag/Band:
             \        /
              \      /
               \    /
                \  /
                 \|/
                  8
  
```

```

=====
Taxon Name: MACACA SILENUS                      Studbook Number: 9
=====

WILD                                          WILD
                        \     /
                        /     \
    dam \                / sire          Sex: Male
        \                /                Birth Date: ~ 1957
         \                /                Last Location: BURMA
          \              /                House Name:
           \            /                Tattoo:
            \          /                Tag/Band:
             \        /
              \      /
               \    /
                \  /
                 \|/
                  9
  
```



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 10
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1957
                                                     Last Location: DELHI (dead)
dam \ / sire                                         House Name:
   \ /                                             Tattoo:
    V                                             Tag/Band:
    10

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 11
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1957
                                                     Last Location: DELHI (dead)
dam \ / sire                                         House Name:
   \ /                                             Tattoo:
    V                                             Tag/Band:
    11

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 12
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1958
                                                     Last Location: ASSAM
dam \ / sire                                         House Name:
   \ /                                             Tattoo:
    V                                             Tag/Band:
    12

```

```

=====T
axon Name: MACACA SILENUS                               Studbook Number: 13
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1960
                                                     Last Location: HYDERABAD (dead)
dam \ / sire                                         House Name:
   \ /                                             Tattoo:
    V                                             Tag/Band:
    13

```

```

=====T
axon Name: MACACA SILENUS                               Studbook Number: 14
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1960
                                                     Last Location: HYDERABAD (dead)
dam \ / sire                                         House Name:
   \ /                                             Tattoo:
    V                                             Tag/Band:
    14

```

=====
axon Name: MACACA SILENUS Studbook Number: 16
=====

WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire
7 + 6 +
Sex: Male
Birth Date: 18 Mar 1962
Last Location: DELHI (dead)
House Name:
Tattoo:
Tag/Band:
+ Wild-caught... 16

=====
axon Name: MACACA SILENUS Studbook Number: 19
=====

WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire
19
Sex: Female
Birth Date: ~ 1963
Last Location: NANDANKAN (dead)
House Name:
Tattoo:
Tag/Band:

=====
Taxon Name: MACACA SILENUS Studbook Number: 20
=====

WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire
20
Sex: Female
Birth Date: ~ 1963
Last Location: NANDANKAN (dead)
House Name:
Tattoo:
Tag/Band:

=====
axon Name: MACACA SILENUS Studbook Number: 21
=====

WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire
21
Sex: Female
Birth Date: ~ 1964
Last Location: DELHI (dead)
House Name:
Tattoo:
Tag/Band:

=====
axon Name: MACACA SILENUS Studbook Number: 23
=====

WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire WILD dam \ /sire
23
Sex: Male
Birth Date: ~ 1965
Last Location: NANDANKAN (dead)
House Name:
Tattoo:
Tag/Band:

=====
axon Name: MACACA SILENUS Studbook Number: 26
=====

```
WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
      \ /      \ /      \ /      \ /      \ /      \ /
       7 +      6 +      6 +
                Sex: Female
                Birth Date: 13 Jun 1967
                Last Location: SANDIEGOZ (dead)
                House Name: angel
                Tattoo:
                Tag/Band:

+ Wild-caught... 26
```

=====
axon Name: MACACA SILENUS Studbook Number: 27
=====

```
WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
      \ /      \ /      \ /      \ /      \ /      \ /
       10 +      6 +      6 +
                Sex: Male
                Birth Date: 1 Mar 1967
                Last Location: SANDIEGOZ (dead)
                House Name: LINUS
                Tattoo:
                Tag/Band:

+ Wild-caught... 27
```

=====
axon Name: MACACA SILENUS Studbook Number: 28
=====

```
WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
      \ /      \ /      \ /      \ /      \ /      \ /
                28
                Sex: Female
                Birth Date: ~ 1968
                Last Location: DELHI (dead)
                House Name:
                Tattoo:
                Tag/Band:
```

=====
axon Name: MACACA SILENUS Studbook Number: 29
=====

```
WILD dam\ /sire WILD dam\ /sire WILD dam\ /sire WILD
      \ /      \ /      \ /      \ /      \ /      \ /
       7 +      6 +      6 +
                Sex: Female
                Birth Date: 7 Jan 1969
                Last Location: DELHI (dead)
                House Name:
                Tattoo:
                Tag/Band:

+ Wild-caught... 29
```

```

=====T
axon Name: MACACA SILENUS                      Studbook Number: 31
=====
WILD                                           WILD
                                           Sex: Female
                                           Birth Date: 15 Jun 1969
                                           Last Location: ADELAIDE (dead)
dam \ / Last Location: ADELAIDE (dead)
  \ / House Name:
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      31

```

```

=====T
axon Name: MACACA SILENUS                      Studbook Number: 32
=====
WILD                                           WILD
                                           Sex: Female
                                           Birth Date: ~ 1969
                                           Last Location: ADELAIDE (dead)
dam \ / Last Location: ADELAIDE (dead)
  \ / House Name:
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      32

```

```

=====T
axon Name: MACACA SILENUS                      Studbook Number: 34
=====
WILD                                           WILD
                                           Sex: Female
                                           Birth Date: ~ 1970
                                           Last Location: ASSAM (dead)
dam \ / Last Location: ASSAM (dead)
  \ / House Name:
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      34

```

```

=====T
axon Name: MACACA SILENUS                      Studbook Number: 35
=====
WILD WILD WILD WILD
  \ / \ / \ / \ /
  dam \ / sire dam \ / sire
    \ / \ / +   \ / \ /
     \ / \ / +   \ / \ /
      10 +      6 +
                                           Sex: Female
                                           Birth Date: 19 May 1970
                                           Last Location: DELHI (dead)
dam \ / Last Location: DELHI (dead)
  \ / House Name:
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      35

```

+ Wild-caught...

```

=====T
axon Name: MACACA SILENUS                      Studbook Number: 36
=====
WILD                                           WILD
                                           Sex: Male
                                           Birth Date: ~ 1970
                                           Last Location: KANPUR (dead)
dam \ / Last Location: KANPUR (dead)
  \ / House Name: KALLOO
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      36

```

=====
 axon Name: MACACA SILENUS Studbook Number: 37
 =====

WILD

```

      \      /
      dam\  /sire
           \  /
            37
  
```

WILD
 Sex: Male
 Birth Date: ~ 1971
 Last Location: ASSAM (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 axon Name: MACACA SILENUS Studbook Number: 38
 =====

```

      WILD      WILD      WILD      WILD
      dam\    /sire  dam\    /sire  dam\    /sire  dam\    /sire
           \  /      \  /      \  /      \  /
            10      +      7      +      6      +
              \  /      \  /      \  /      \  /
               \  /      \  /      \  /      \  /
                38
  
```

+ Wild-caught...

```

      \      /
      dam\  /sire
           \  /
            38
  
```

Sex: Unknown
 Birth Date: 7 May 1971
 Last Location: DELHI (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 axon Name: MACACA SILENUS Studbook Number: 39
 =====

```

      WILD      WILD      WILD      WILD
      dam\    /sire  dam\    /sire  dam\    /sire  dam\    /sire
           \  /      \  /      \  /      \  /
            21      +      7      +      6      +
              \  /      \  /      \  /      \  /
               \  /      \  /      \  /      \  /
                39
  
```

+ Wild-caught...

```

      \      /
      dam\  /sire
           \  /
            39
  
```

Sex: Male
 Birth Date: 9 Sep 1971
 Last Location: DELHI (dead)
 House Name:
 Tattoo:
 Tag/Band:

=====
 axon Name: MACACA SILENUS Studbook Number: 40
 =====

WILD

```

      \      /
      dam\  /sire
           \  /
            40
  
```

WILD
 Sex: Male
 Birth Date: ~ 1972
 Last Location: NANDANKAN (dead)
 House Name:
 Tattoo:
 Tag/Band:

```

=====T
axon Name: MACACA SILENUS                               Studbook Number: 41
=====
WILD                                                    WILD
                                                    Sex: Female
                                                    Birth Date: ~ 1972
                                                    Last Location: NANDANKAN (dead)
dam \ / Last Location: NANDANKAN (dead)
  \ / sire House Name:
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      41

```

```

=====T
axon Name: MACACA SILENUS                               Studbook Number: 42
=====
WILD dam \ / WILD sire WILD dam \ / WILD sire
  \ / sire 7 + dam \ / 6 +
   \ / 10 +   \ / sire 16
    \ / +     \ /
     \ /      \ /
      42      Sex: Female
              Birth Date: 1 Apr 1972
              Last Location: DELHI
              House Name:
              Tattoo:
              Tag/Band:
+ Wild-caught...

```

```

=====T
axon Name: MACACA SILENUS                               Studbook Number: 43
=====
WILD                                                    WILD
                                                    Sex: Male
                                                    Birth Date: ~ 1972
                                                    Last Location: KANPUR (dead)
dam \ / Last Location: KANPUR (dead)
  \ / sire House Name: BHOLA
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      43

```

```

=====T
axon Name: MACACA SILENUS                               Studbook Number: 44
=====
WILD                                                    WILD
                                                    Sex: Male
                                                    Birth Date: ~ 1972
                                                    Last Location: KANPUR (dead)
dam \ / Last Location: KANPUR (dead)
  \ / sire House Name: BUDHA
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      44

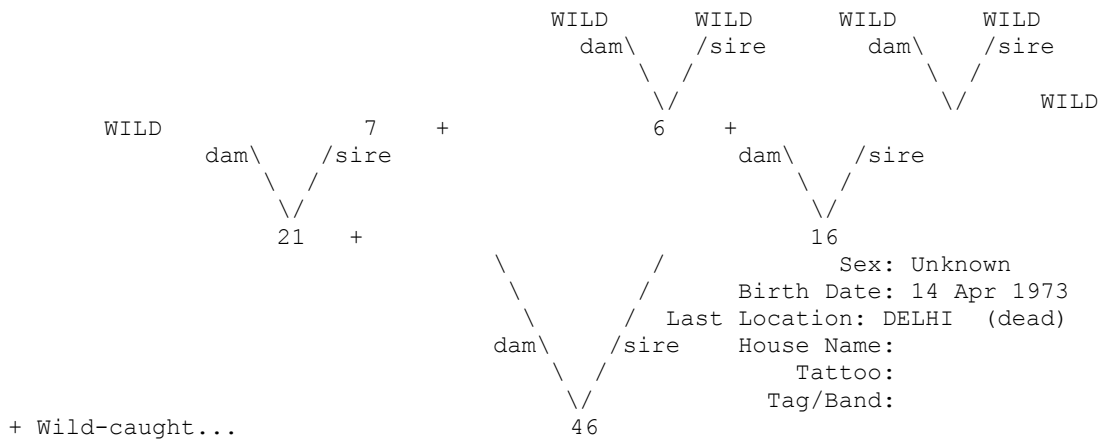
```

```

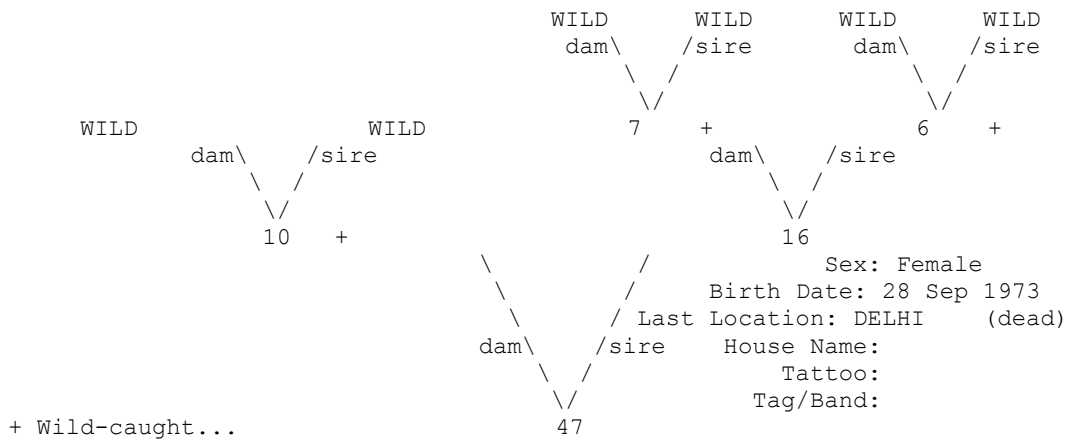
=====T
axon Name: MACACA SILENUS                               Studbook Number: 45
=====
WILD                                                    WILD
                                                    Sex: Female
                                                    Birth Date: ~ 1973
                                                    Last Location: KANPUR (dead)
dam \ / Last Location: KANPUR (dead)
  \ / sire House Name: MEEETA
   \ / Tattoo:
    \ / Tag/Band:
     \ /
      45

```

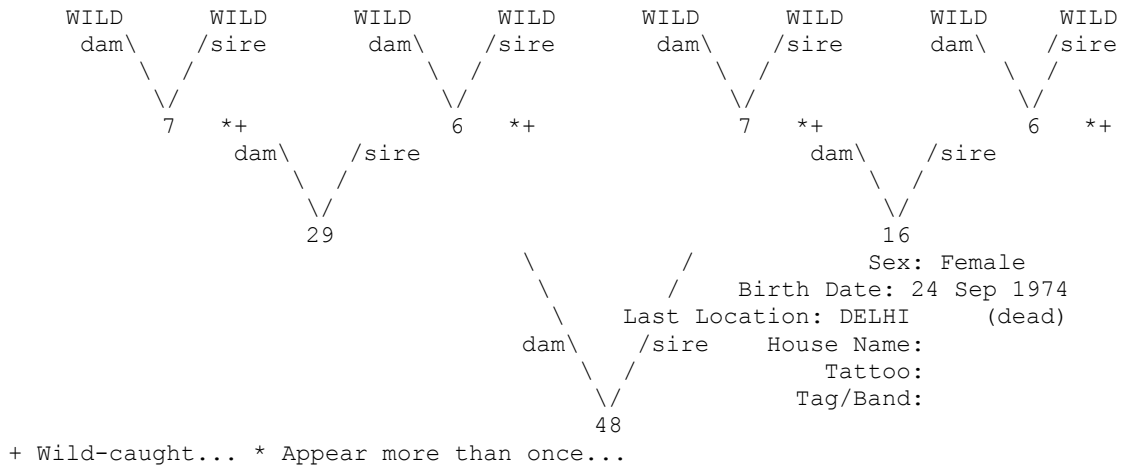
=====
 axon Name: MACACA SILENUS Studbook Number: 46
 =====



=====
 axon Name: MACACA SILENUS Studbook Number: 47
 =====



=====
 axon Name: MACACA SILENUS Studbook Number: 48
 =====



=====
 axon Name: MACACA SILENUS Studbook Number: 49
 =====

```

      WILD      WILD      WILD      WILD
      dam\     /sire   dam\     /sire
       \      /       \      /
        7      +      6      +
      WILD      WILD
      dam\     /sire   dam\     /sire
       \      /       \      /
        10     +      16
      + Wild-caught...
      \      /
       dam\  /sire
        \  /
         49
      Sex: Female
      Birth Date: 10 Nov 1974
      Last Location: DELHI (dead)
      House Name:
      Tattoo:
      Tag/Band:
  
```

=====
 axon Name: MACACA SILENUS Studbook Number: 50
 =====

```

      WILD      WILD      WILD      WILD
      dam\     /sire   dam\     /sire
       \      /       \      /
        7      +      6      +
      WILD      WILD
      dam\     /sire   dam\     /sire
       \      /       \      /
        21     +      16
      + Wild-caught...
      \      /
       dam\  /sire
        \  /
         50
      Sex: Female
      Birth Date: 24 May 1975
      Last Location: DELHI (dead)
      House Name:
      Tattoo:
      Tag/Band:
  
```

=====
 axon Name: MACACA SILENUS Studbook Number: 51
 =====

```

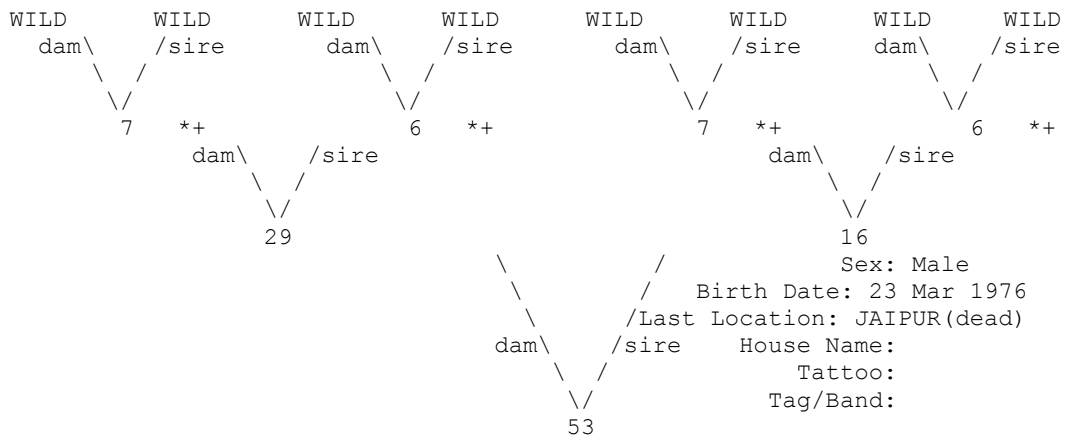
      WILD      WILD
      \      /
       dam\  /sire
        \  /
         51
      Sex: Male
      Birth Date: ~ 1976
      Last Location: CHATBIR (dead)
      House Name:
      Tattoo:
      Tag/Band:
  
```

=====
 axon Name: MACACA SILENUS Studbook Number: 52
 =====

```

      WILD      WILD
      \      /
       dam\  /sire
        \  /
         52
      Sex: Female
      Birth Date: ~ 1976
      Last Location: CHATBIR (dead)
      House Name:
      Tattoo:
      Tag/Band:
  
```

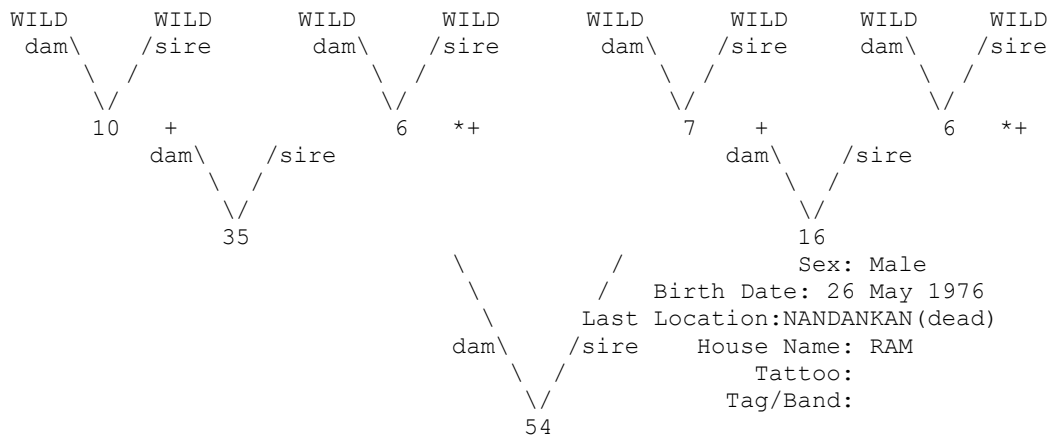

=====
 axon Name: MACACA SILENUS Studbook Number: 53
 =====



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

Sex: Male
 Birth Date: 23 Mar 1976
 Last Location: JAIPUR (dead)
 House Name:
 Tattoo:
 Tag/Band:

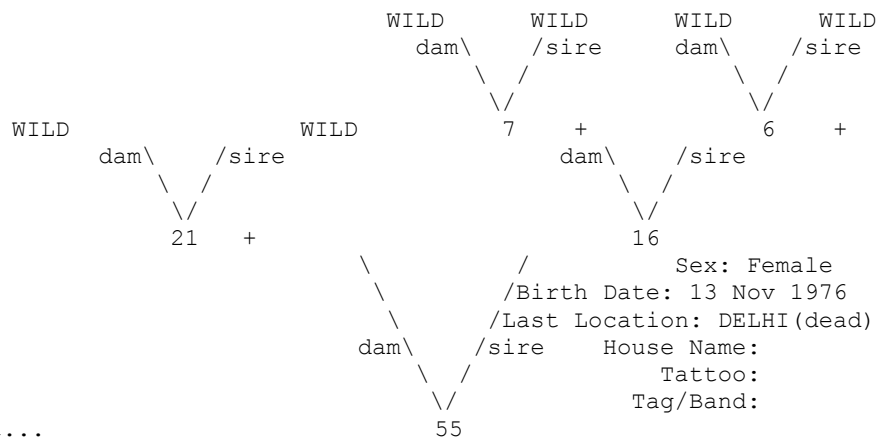
=====
 axon Name: MACACA SILENUS Studbook Number: 54
 =====



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

Sex: Male
 Birth Date: 26 May 1976
 Last Location: NANDANKAN (dead)
 House Name: RAM
 Tattoo:
 Tag/Band:

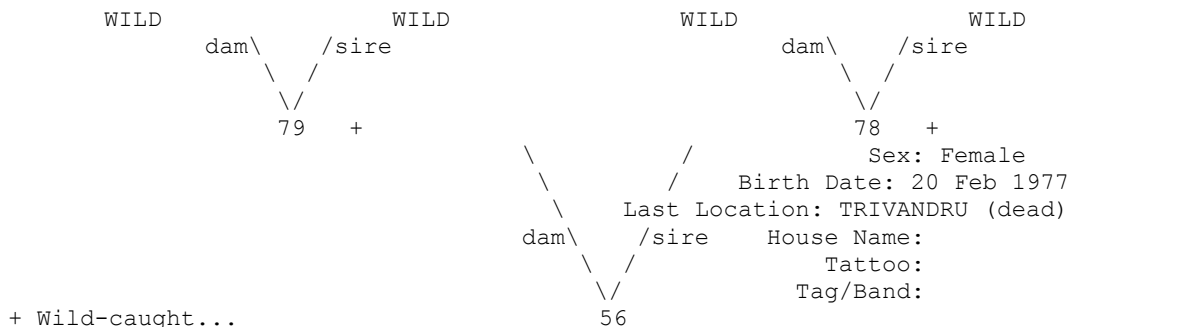
=====
 axon Name: MACACA SILENUS Studbook Number: 55
 =====



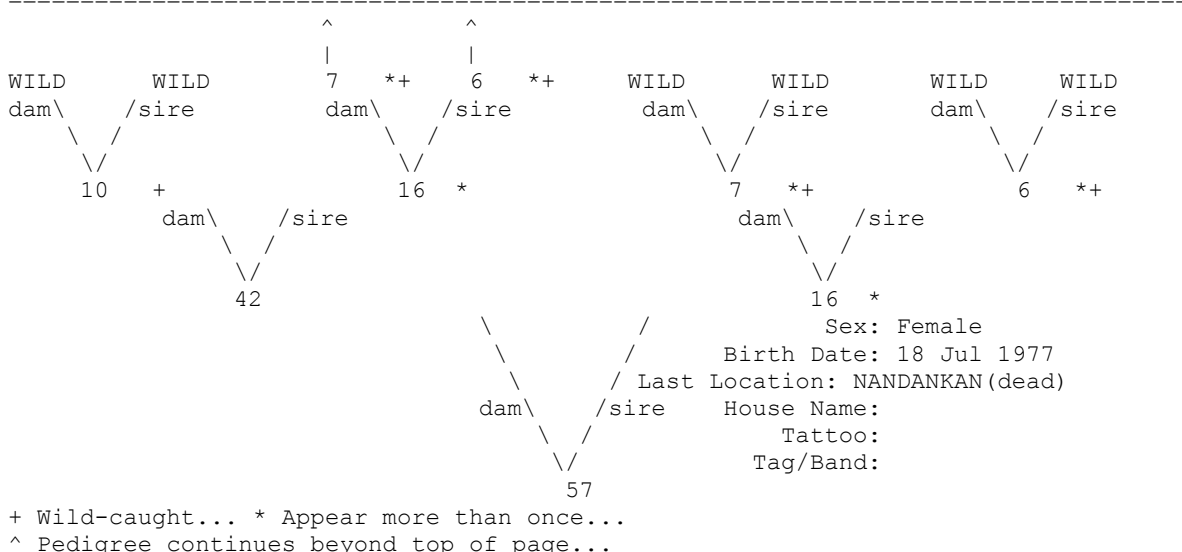
+ Wild-caught...

Sex: Female
 Birth Date: 13 Nov 1976
 Last Location: DELHI (dead)
 House Name:
 Tattoo:
 Tag/Band:

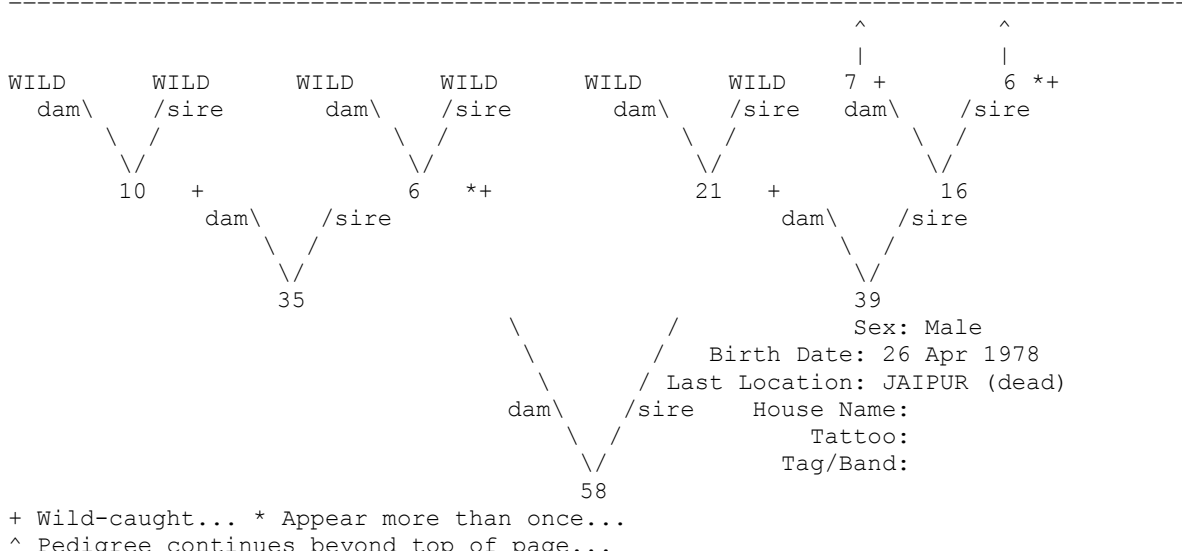
=====
 Taxon Name: MACACA SILENUS Studbook Number: 56
 =====



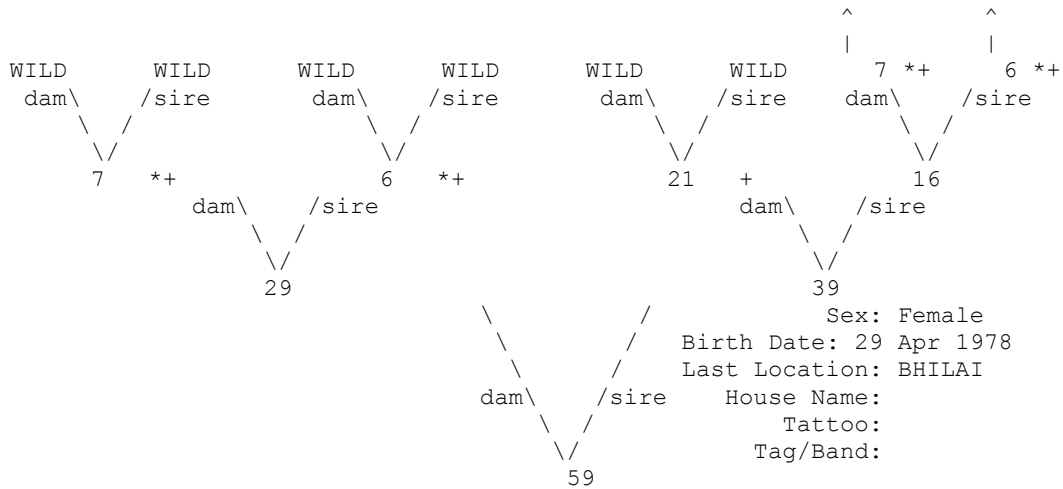
=====
 Taxon Name: MACACA SILENUS Studbook Number: 57
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 58
 =====



```
=====T
axon Name: MACACA SILENUS                               Studbook Number: 59
=====
```

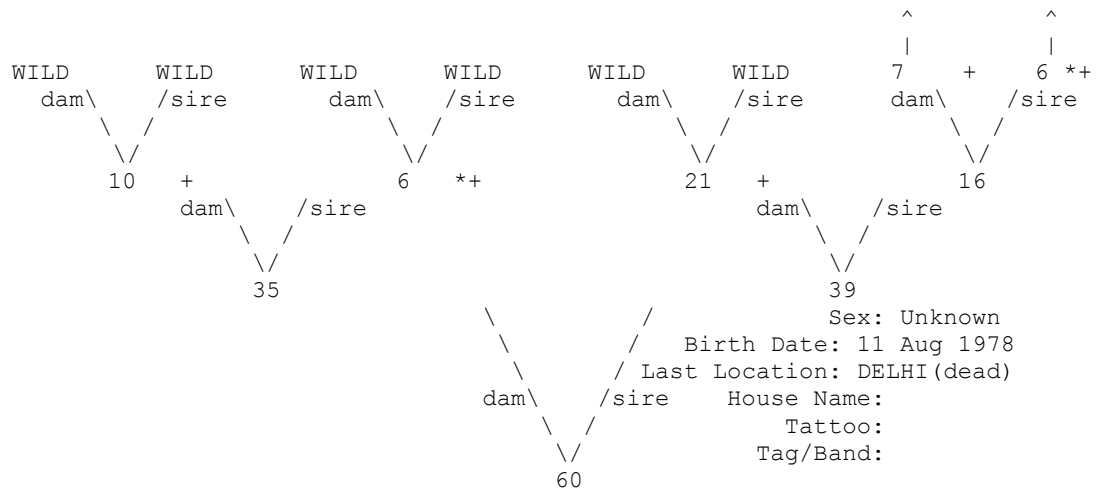


```

Sex: Female
Birth Date: 29 Apr 1978
Last Location: BHILAI
House Name:
Tattoo:
Tag/Band:
    
```

+ Wild-caught... * Appear more than once...
^ Pedigree continues beyond top of page...

```
=====T
axon Name: MACACA SILENUS                               Studbook Number: 60
=====
```

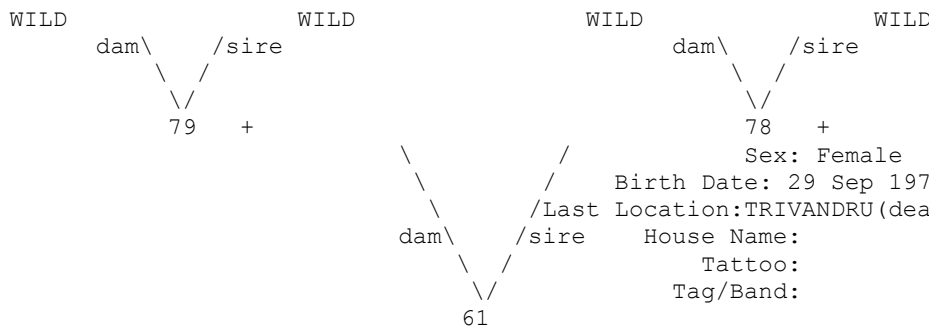


```

Sex: Unknown
Birth Date: 11 Aug 1978
Last Location: DELHI (dead)
House Name:
Tattoo:
Tag/Band:
    
```

+ Wild-caught... * Appear more than once...
^ Pedigree continues beyond top of page...

```
=====T
axon Name: MACACA SILENUS                               Studbook Number: 61
=====
```

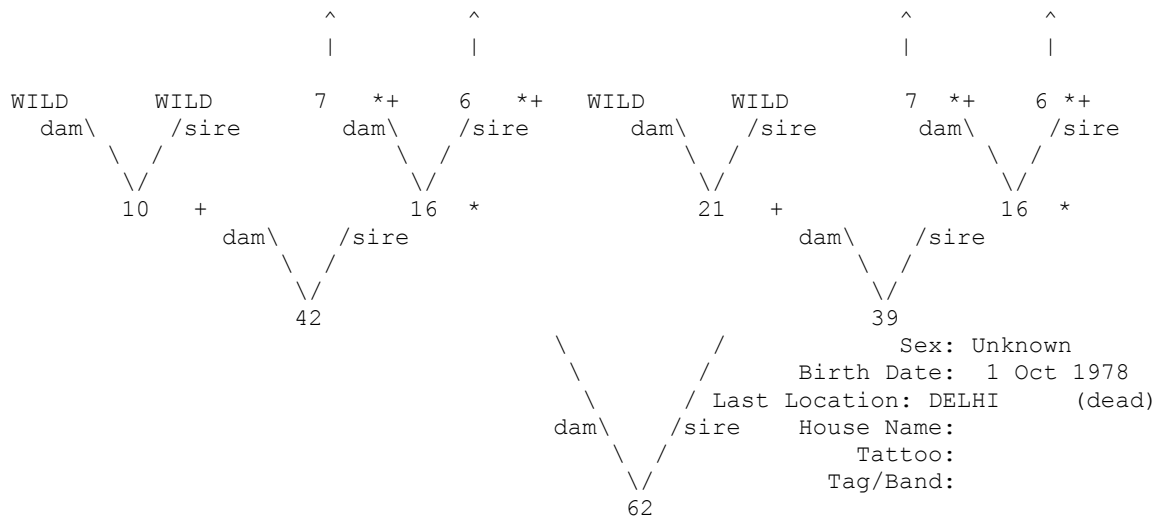


```

Sex: Female
Birth Date: 29 Sep 1978
Last Location: TRIVANDRU (dead)
House Name:
Tattoo:
Tag/Band:
    
```

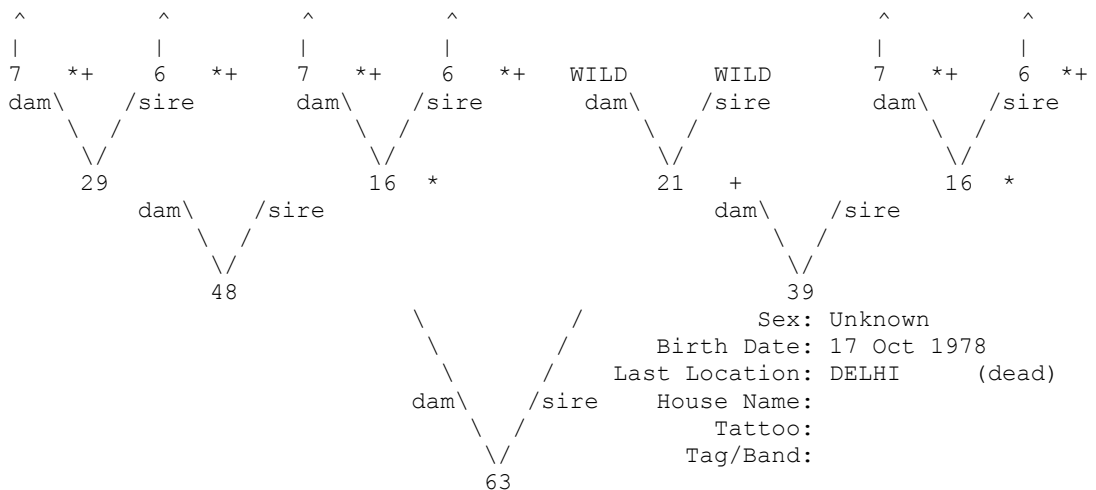
+ Wild-caught...

=====
 Taxon Name: MACACA SILENUS Studbook Number: 62
 =====



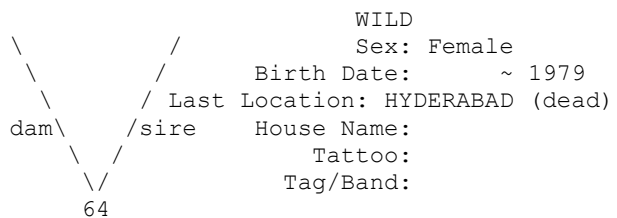
+ Wild-caught... * Appear more than once...
 ^ Pedigree continues beyond top of page...

=====
 Taxon Name: MACACA SILENUS Studbook Number: 63
 =====



+ Wild-caught... * Appear more than once...
 ^ Pedigree continues beyond top of page...

=====
 Taxon Name: MACACA SILENUS Studbook Number: 64
 =====



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 65
=====
^         ^         ^         ^         ^         ^         ^         ^
|         |         |         |         |         |         |         |
7      *+  6      *+  7      *+  6      *+  WILD  WILD  7      *+  6      *+
dam\    /sire    dam\    /sire    dam\    /sire    dam\    /sire    dam\    /sire
  \      /      \      /      \      /      \      /      \      /
   29            16 *            21 +            16 *
    \          /          \          /          \          /
     dam\    /sire        dam\    /sire
        \      /          \      /
         48                39
                               \      /
                               \    /
                               dam\ /sire
                                   \ /
                                   65
Sex: Female
Birth Date: 29 Jul 1979
Last Location: DELHI (dead)
House Name:
Tattoo:
Tag/Band:

+ Wild-caught... * Appear more than once...
^ Pedigree continues beyond top of page...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 66
=====
WILD      WILD      WILD      WILD
dam\      /sire    dam\      /sire
  \      /      \      /
   45 +            36 +
  MEETA          KALLOO
                \      /
                \    /
                dam\ /sire
                    \ /
                    66
Sex: Female
Birth Date: 5 Aug 1979
Last Location: KANPUR (dead)
House Name: NEETA
Tattoo:
Tag/Band:

+ Wild-caught...

```

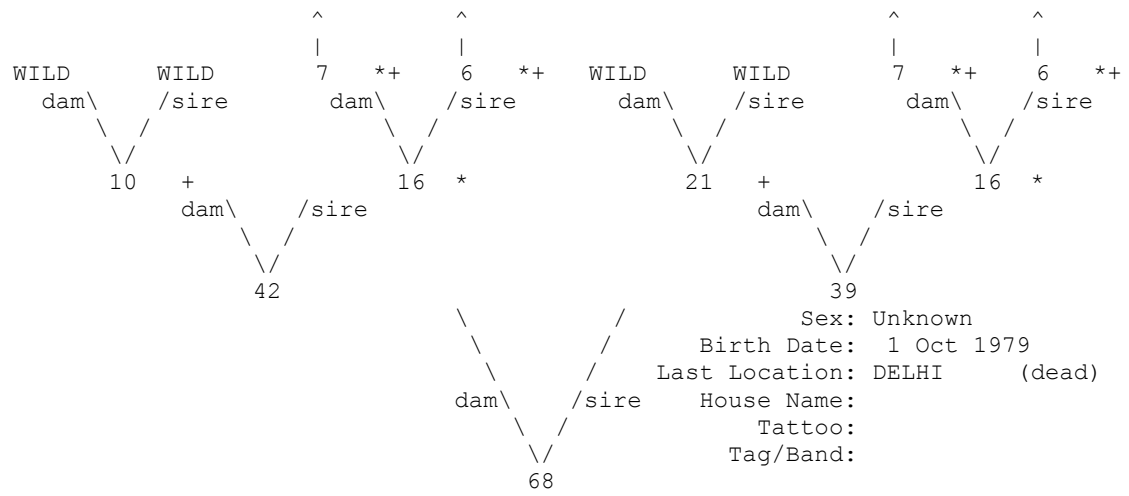
```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 67
=====
^         ^         ^         ^         ^         ^         ^         ^
|         |         |         |         |         |         |         |
7      *+  6      *+  7      *+  6      *+  WILD  WILD  7      *+  6      *+
dam\    /sire    dam\    /sire    dam\    /sire    dam\    /sire    dam\    /sire
  \      /      \      /      \      /      \      /      \      /
   29            16 *            21 +            16 *
    \          /          \          /          \          /
     dam\    /sire        dam\    /sire
        \      /          \      /
         48                39
                               \      /
                               \    /
                               dam\ /sire
                                   \ /
                                   67
Sex: Male
Birth Date: 11 Sep 1979
Last Location: BHILAI
House Name:
Tattoo:
Tag/Band:

+ Wild-caught... * Appear more than once...
^ Pedigree continues beyond top of page...

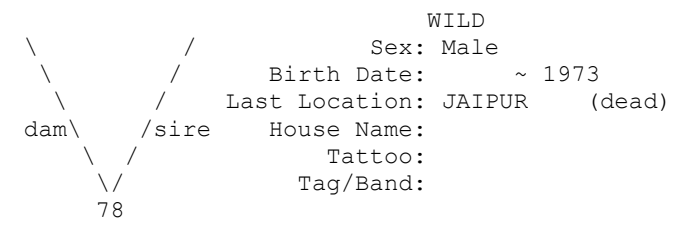
```

=====
 Taxon Name: MACACA SILENUS Studbook Number: 68
 =====

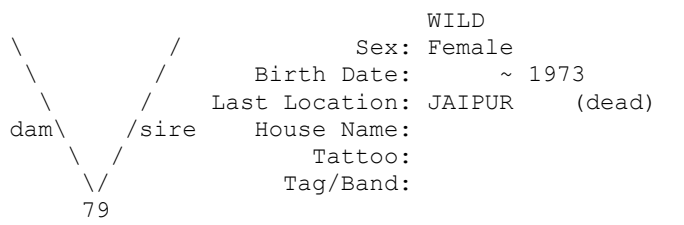


+ Wild-caught... * Appear more than once...
 ^ Pedigree continues beyond top of page...

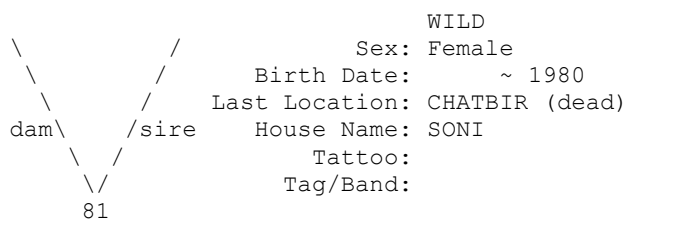
=====
 Taxon Name: MACACA SILENUS Studbook Number: 78
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 79
 =====

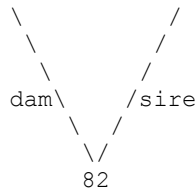


=====
 Taxon Name: MACACA SILENUS Studbook Number: 81
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 82
 =====

WILD

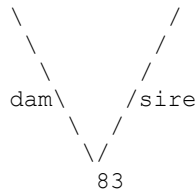


WILD

Sex: Male
 Birth Date: ~ 1980
 Last Location: CHATBIR (dead)
 House Name: MAHIWAL/BUGGA
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 83
 =====

WILD

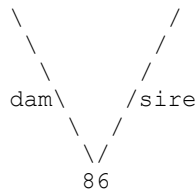


WILD

Sex: Male
 Birth Date: ????
 Last Location: BANNERGHA
 House Name: Rambo
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 86
 =====

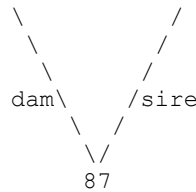
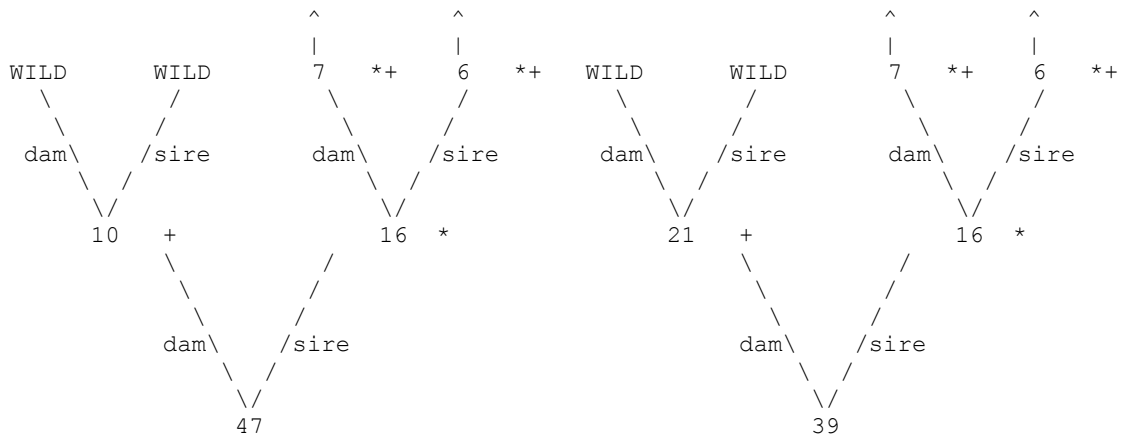
WILD



WILD

Sex: Female
 Birth Date: ~ 1982
 Last Location: MYSORE (dead)
 House Name: NETHRA
 Tattoo:
 Tag/Band:

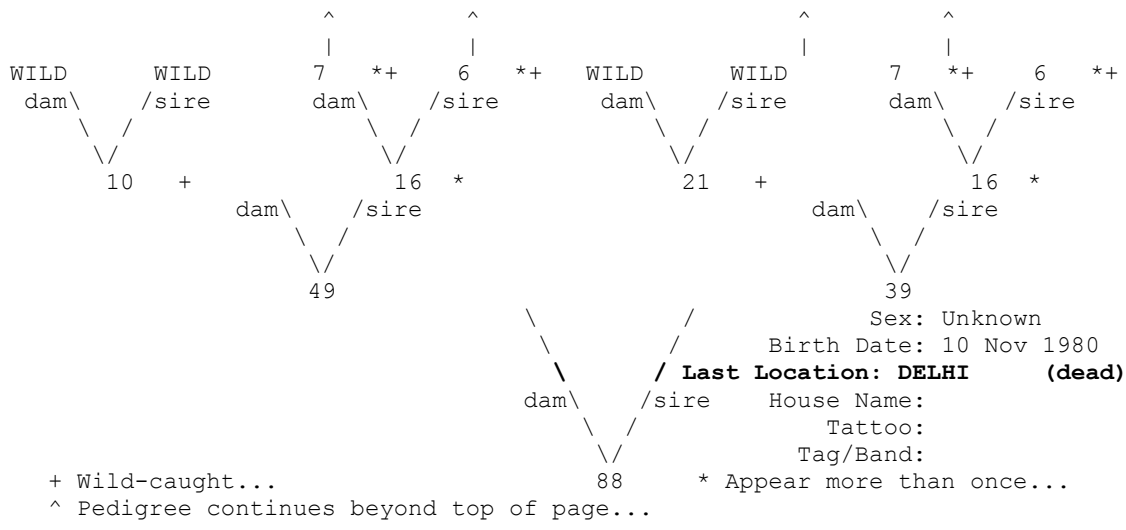
=====
 Taxon Name: MACACA SILENUS Studbook Number: 87
 =====



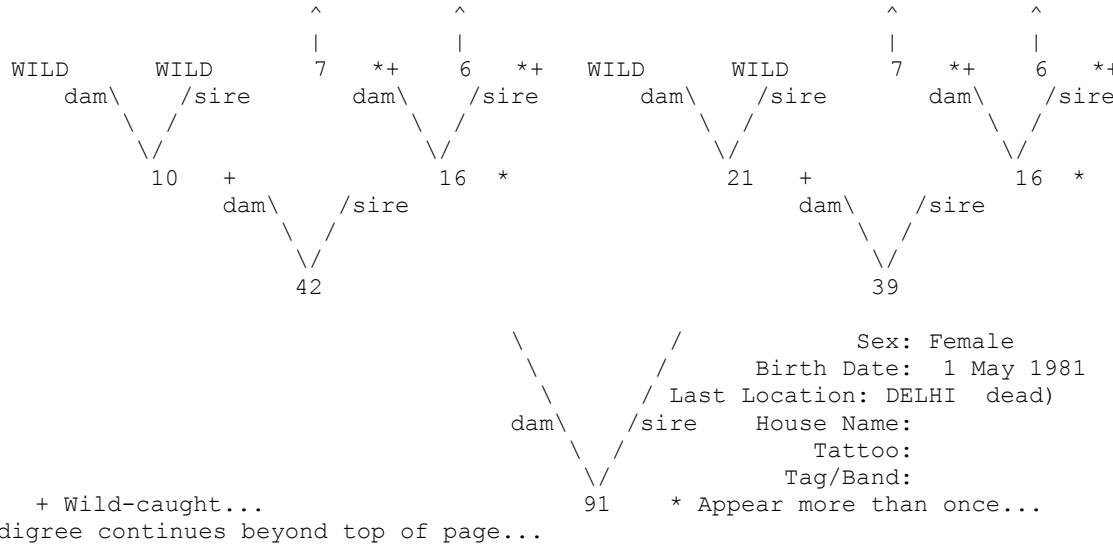
Sex: Male
 Birth Date: 4 Apr 1980
 Last Location: DELHI
 House Name:
 Tattoo:
 Tag/Band:

+ Wild-caught... * Appear more than once...
 ^ Pedigree continues beyond top of page...

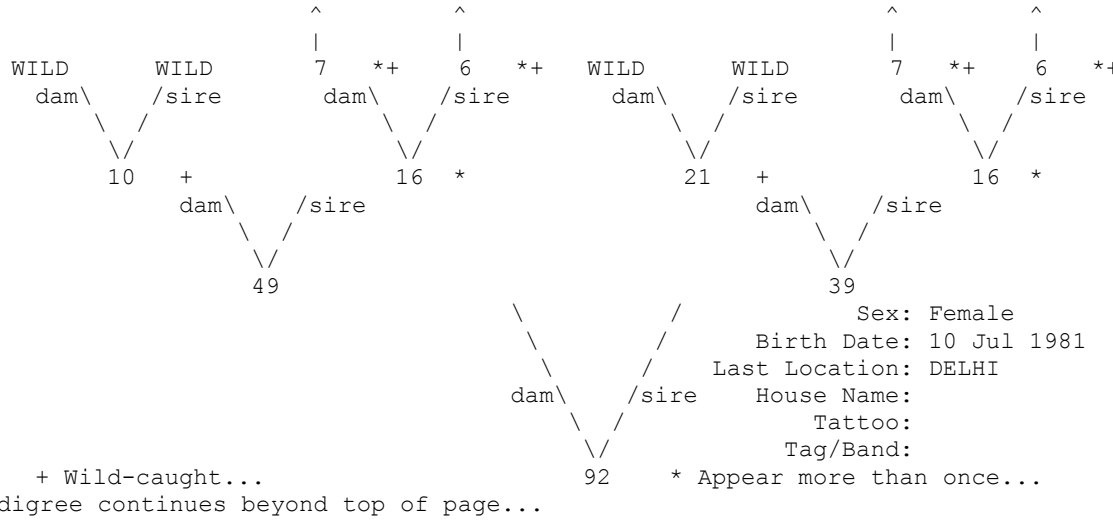
=====
 Taxon Name: MACACA SILENUS Studbook Number: 88
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 91
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 92
 =====




```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 93
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1982
                                                     Last Location: HYDERABAD (dead)
dam \ / Last Location: HYDERABAD (dead)
  \ / /sire House Name: PAVAN
   V /sire
  93
                                                     Tattoo:
                                                     Tag/Band:

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 94
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1982
                                                     Last Location: HYDERABAD (dead)
dam \ / Last Location: HYDERABAD (dead)
  \ / /sire House Name: SUMITRA
   V /sire
  94
                                                     Tattoo:
                                                     Tag/Band:

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 95
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1982
                                                     Last Location: HYDERABAD (dead)
dam \ / Last Location: HYDERABAD (dead)
  \ / /sire House Name:
   V /sire
  95
                                                     Tattoo:
                                                     Tag/Band:

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 96
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1982
                                                     Last Location: TRIVANDRU
dam \ / Last Location: TRIVANDRU
  \ / /sire House Name: MOHAN
   V /sire
  96
                                                     Tattoo:
                                                     Tag/Band:

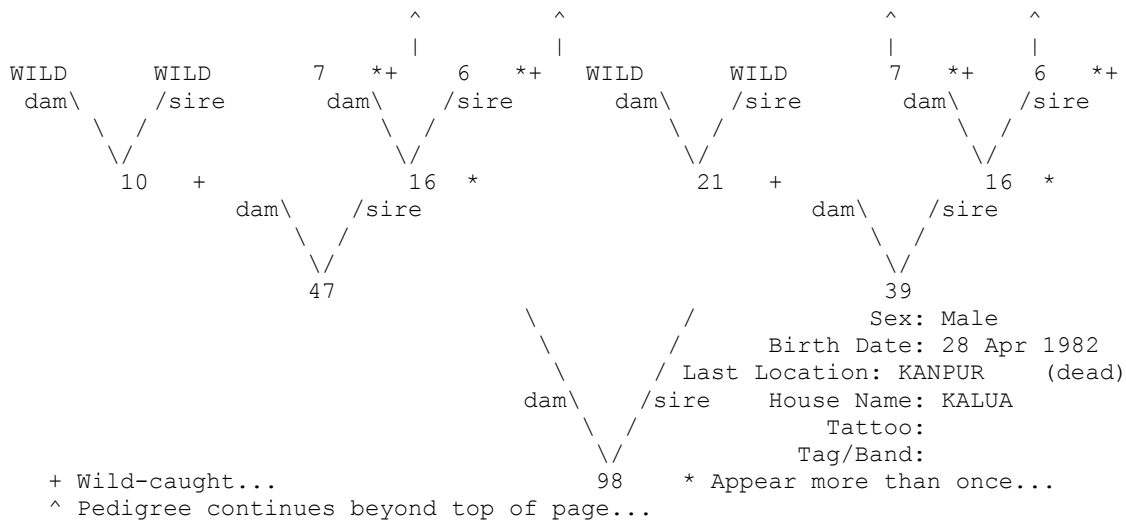
```

```

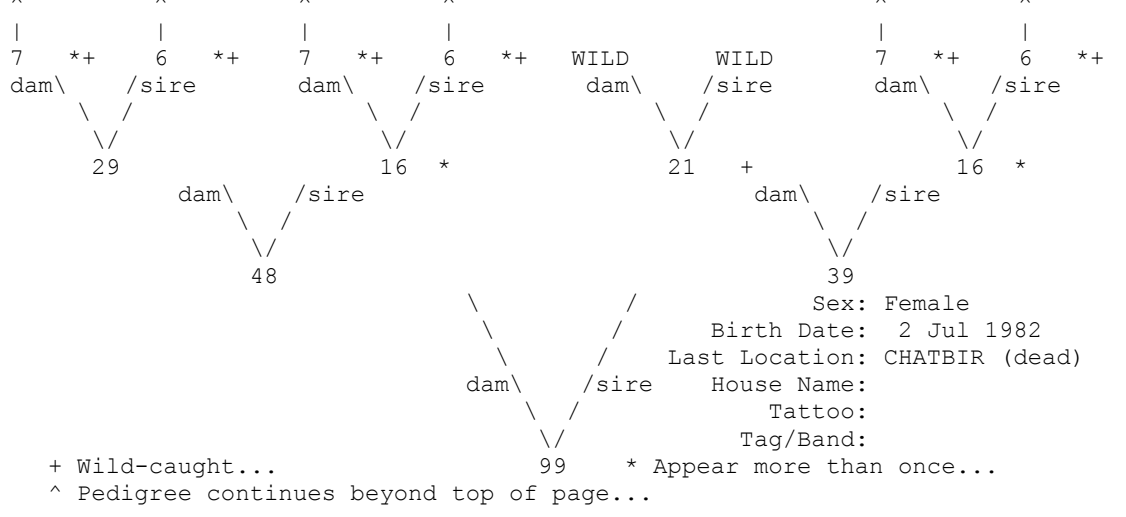
=====
Taxon Name: MACACA SILENUS                               Studbook Number: 97
=====
WILD dam \ / WILD dam \ / WILD dam \ / WILD dam \ /
  \ / /sire  \ / /sire  \ / /sire  \ / /sire
   V /sire    +       V /sire    +
  79          +       78          +
             dam \ /sire
              \ /
              56
                                                     WILD dam \ / WILD
                                                     \ / /sire
                                                     \ /
                                                     154 +
                                                     KISHORE
                                                     Sex: Female
                                                     Birth Date: 31 Mar 1982
                                                     Last Location: VEERMATA (dead)
dam \ / Last Location: VEERMATA (dead)
  \ / /sire House Name:
   V /sire
  97
                                                     Tattoo:
                                                     Tag/Band:
+ Wild-caught...

```

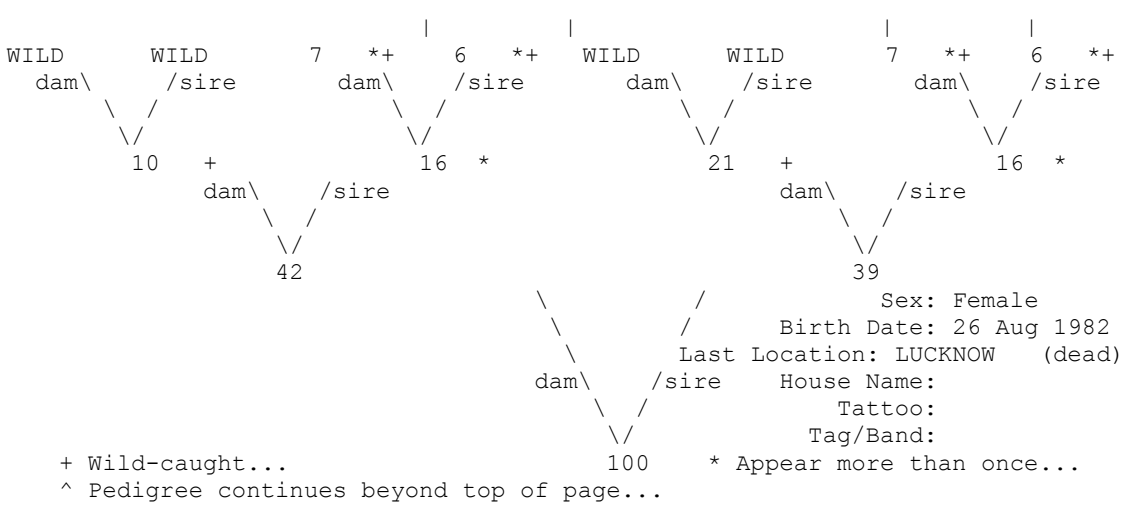
=====
 Taxon Name: MACACA SILENUS Studbook Number: 98
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 99
 =====

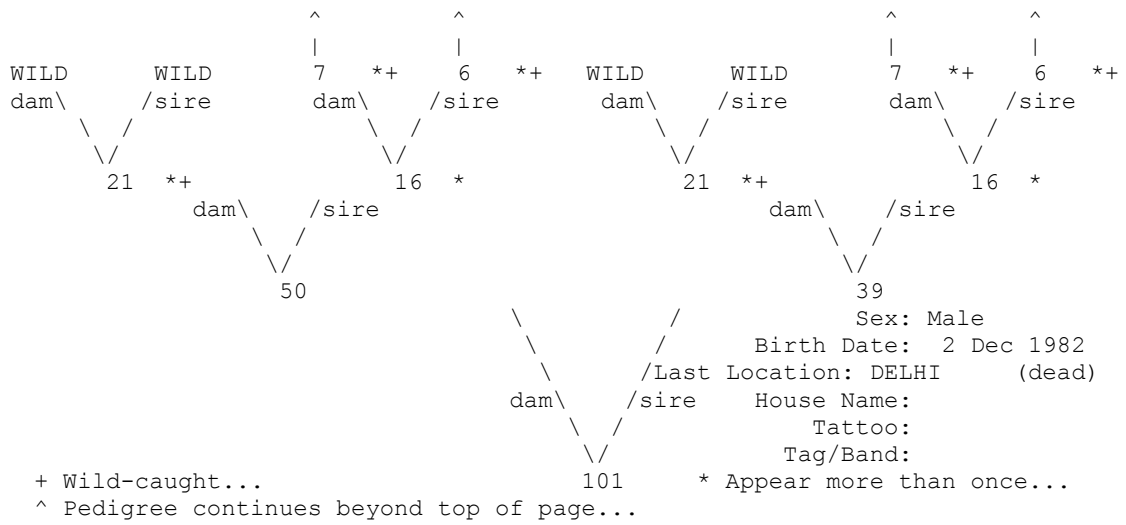


=====
 Taxon Name: MACACA SILENUS Studbook Number: 100
 =====



=====
Taxon Name: MACACA SILENUS

Studbook Number: 101
=====

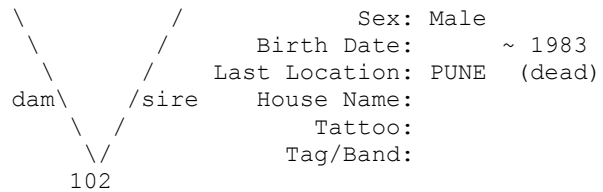


=====
Taxon Name: MACACA SILENUS

Studbook Number: 102
=====

WILD

WILD



=====
Taxon Name: MACACA SILENUS

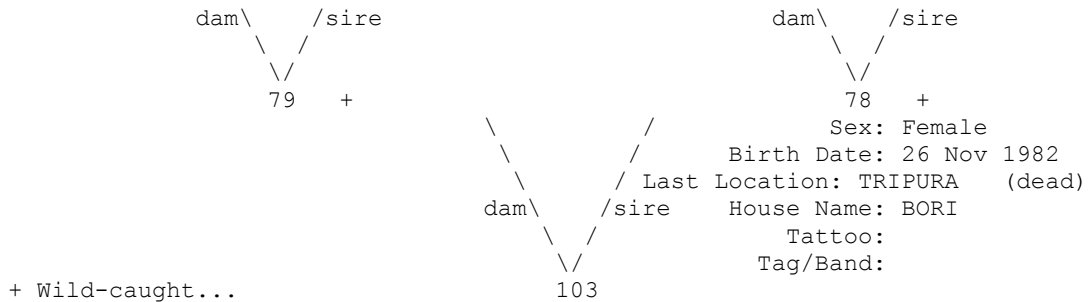
Studbook Number: 103
=====

WILD

WILD

WILD

WILD

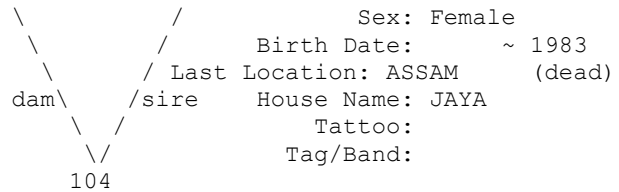


=====
Taxon Name: MACACA SILENUS

Studbook Number: 104
=====

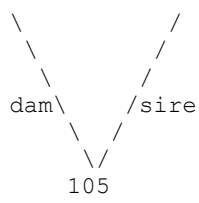
WILD

WILD



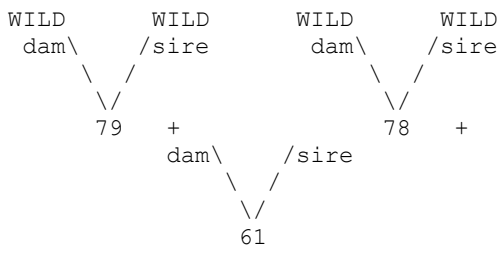
=====
 Taxon Name: MACACA SILENUS Studbook Number: 105
 =====

WILD



WILD
 Sex: Male
 Birth Date: ~ 1983
 Last Location: KODANAD
 House Name: RAMAN
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 106
 =====

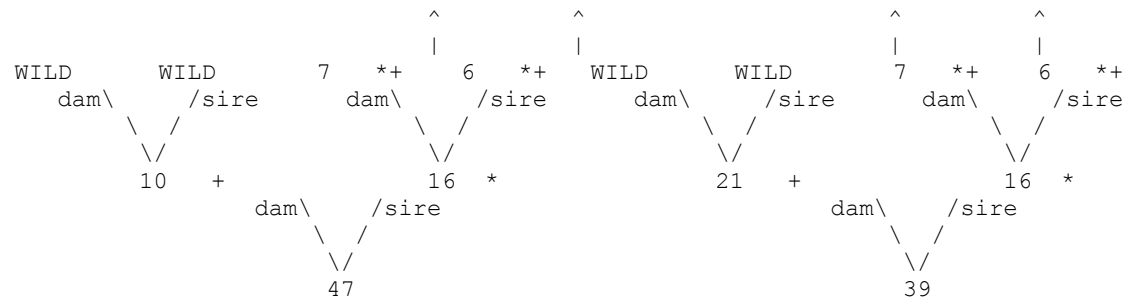


+ Wild-caught...



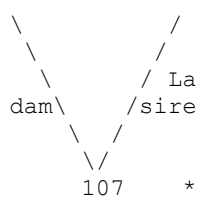
WILD dam\' /sire WILD
 154 +
 KISHORE
 Sex: Male
 Birth Date: 24 Jan 1983
 Last Location: TRIVANDRU (dead)
 House Name: RAJU
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 107
 =====



+ Wild-caught...

^ Pedigree continues beyond top of page...



Sex: Male
 Birth Date: 14 May 1983
 Last Location: BALTIMORE (dead)
 House Name: SIMBA
 Tattoo:
 Tag/Band:

* Appear more than once...

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 108
=====
WILD                                WILD                                WILD                                WILD
  dam\                               /sire                                dam\                               /sire
   \  \                               /  /                                \  \                               /  /
    45 +                               36 +
    MEETA                               KALLOO
                                         Sex: Male
                                         Birth Date: 17 Jul 1983
                                         Last Location: KANPUR (dead)
                                         House Name:
                                         Tattoo:
                                         Tag/Band:
+ Wild-caught...                                108

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 109
=====
^   ^   ^   ^   ^   ^   ^   ^
10  *+  16  *   7  *+  6  *+  10  *+  6  *+  7  *+  6  *+
 dam\  /sire  dam\  /sire  dam\  /sire  dam\  /sire  dam\  /sire
  \  \  /  /  \  \  /  /  \  \  /  /  \  \  /  /  \  \  /  /
   42  16  *   35  16  *
    dam\  /sire  dam\  /sire
     \  \  /  /
      57  54 RAM
          Sex: Female
          Birth Date: 4 Oct 1983
          Last Location: NANDANKAN (dead)
          House Name:
          Tattoo:
          Tag/Band:
+ Wild-caught...                                109 * Appear more than once...
^ Pedigree continues beyond top of page...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 110
=====
WILD                                WILD
  dam\                               /sire
   \  \                               /  /
    110                               Sex: Male
                                         Birth Date: ~ 1984
                                         Last Location: MADRAS
                                         House Name: MOHAN
                                         Tattoo:
                                         Tag/Band:

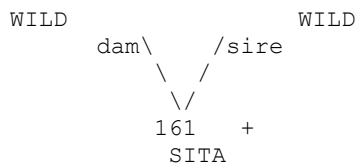
```

```

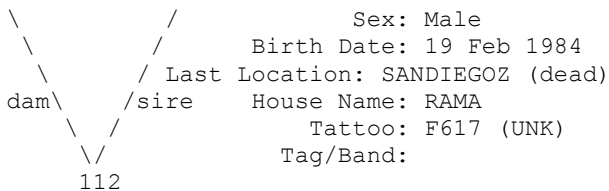
=====
Taxon Name: MACACA SILENUS                               Studbook Number: 111
=====
WILD                                WILD
  dam\                               /sire
   \  \                               /  /
    111                               Sex: Male
                                         Birth Date: ~ 1984
                                         Last Location: PARASSINI
                                         House Name: Raja
                                         Tattoo:
                                         Tag/Band:

```

=====
Taxon Name: MACACA SILENUS Studbook Number: 112
=====

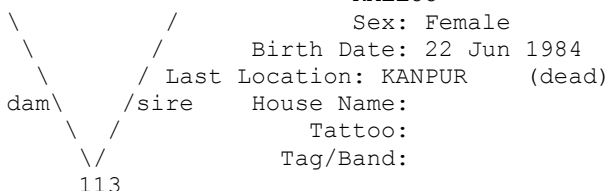
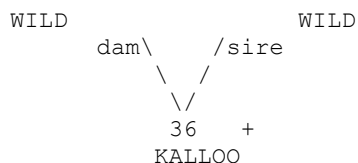
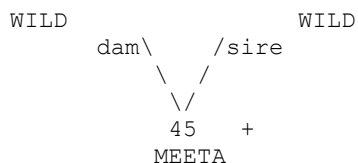


WILD



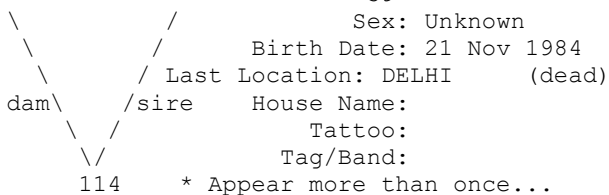
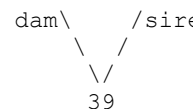
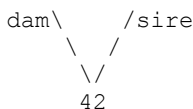
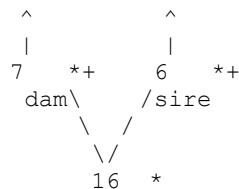
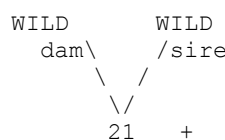
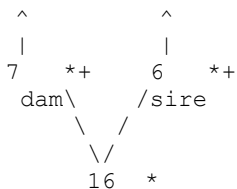
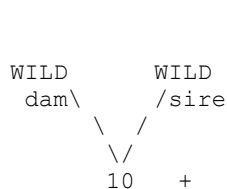
+ Wild-caught...

=====
Taxon Name: MACACA SILENUS Studbook Number: 113
=====



+ Wild-caught...

=====
Taxon Name: MACACA SILENUS Studbook Number: 114
=====

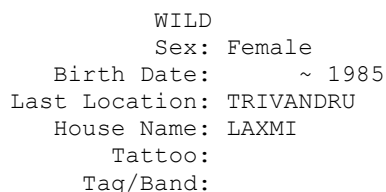
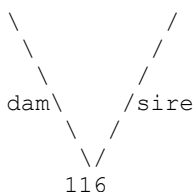


+ Wild-caught...

^ Pedigree continues beyond top of page...

=====
Taxon Name: MACACA SILENUS Studbook Number: 116
=====

WILD



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 117
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1985
Last Location: HYDERABAD
House Name: MANI
Tattoo:
Tag/Band:
dam\ /sire
  \ /
   V
  117

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 118
=====
^ ^ ^ ^ ^ ^ ^
| | | | | | |
WILD WILD WILD WILD WILD WILD WILD WILD
dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire
  \ /  \ /  \ /  \ /  \ /  \ /  \ /  \ /
   V    V    V    V    V    V    V    V
  21  *+ 16 * 29  16 * 21 *+ 16 *
   \ /  \ /  \ /  \ /  \ /  \ /  \ /  \ /
    dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire
      \ /  \ /  \ /  \ /  \ /  \ /  \ /  \ /
       V    V    V    V    V    V    V    V
      50    67
                                                     Sex: Female
                                                     Birth Date: 20 Feb 1985
Last Location: GARDENCTY (dead)
House Name: SALSA
Tattoo:
Tag/Band:
dam\ /sire
  \ /
   V
  118 * Appear more than once...
+ Wild-caught...
^ Pedigree continues beyond top of page...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 119
=====
^ ^ ^ ^ ^ ^ ^
| | | | | | |
10 *+ 16 * 7 *+ 6 *+ 10 *+ 6 *+ 7 *+ 6 *+
dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire
  \ /  \ /  \ /  \ /  \ /  \ /  \ /  \ /
   V    V    V    V    V    V    V    V
  42    16 * 35    16 *
   \ /  \ /  \ /  \ /  \ /  \ /  \ /  \ /
    dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire dam\ /sire
      \ /  \ /  \ /  \ /  \ /  \ /  \ /  \ /
       V    V    V    V    V    V    V    V
      57    54 RAM
                                                     Sex: Female
                                                     Birth Date: 28 Mar 1985
Last Location: NANDANKAN (dead)
House Name:
Tattoo:
Tag/Band:
dam\ /sire
  \ /
   V
  119 * Appear more than once...
+ Wild-caught...
^ Pedigree continues beyond top of page...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 120
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1986
Last Location: MADRAS (dead)
House Name: BHAMA
Tattoo:
Tag/Band:
dam\ /sire
  \ /
   V
  120

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 121
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1986
                                                     Last Location: TRIVANDRU
                                                     House Name: BINDU
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
     \  /
      121

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 123
=====
WILD WILD WILD WILD
    dam\  /sire
     \  /
      81 +
      SONI
+ Wild-caught...
    dam\  /sire
     \  /
      123
                                                     WILD WILD
                                                     dam\  /sire
                                                      \  /
                                                       82 +
                                                       MAHIWAL/
                                                       Sex: Male
                                                       Birth Date: 1 Apr 1986
                                                       Last Location: CHATBIR
                                                       House Name: MAJNU
                                                       Tattoo:
                                                       Tag/Band:

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 124
=====
WILD WILD WILD WILD
    dam\  /sire
     \  /
      45 +
      MEETA
+ Wild-caught...
    dam\  /sire
     \  /
      124
                                                     WILD WILD
                                                     dam\  /sire
                                                      \  /
                                                       36 +
                                                       KALLOO
                                                       Sex: Male
                                                       Birth Date: 6 May 1986
                                                       Last Location: KANPUR (dead)
                                                       House Name:
                                                       Tattoo:
                                                       Tag/Band:

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 125
=====
UNK                                                     UNK
                                                     Sex: Female
                                                     Birth Date: ???
                                                     Last Location: BANNERGHA
                                                     House Name:
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
     \  /
      125

```

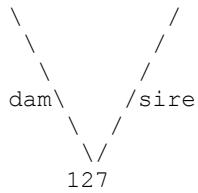
```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 126
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1986
                                                     Last Location: TRIVANDRU
                                                     House Name: GANESH
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
     \  /
      126

```

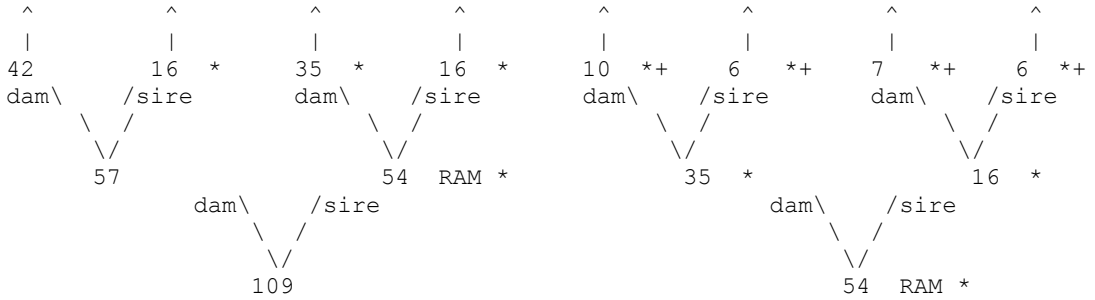

=====
 Taxon Name: MACACA SILENUS Studbook Number: 127
 =====

WILD



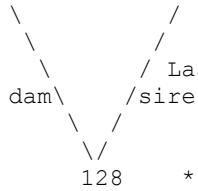
WILD
 Sex: Female
 Birth Date: ~ 1987
 Last Location: TRIVANDRU
 House Name: GUNJAN
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 128
 =====



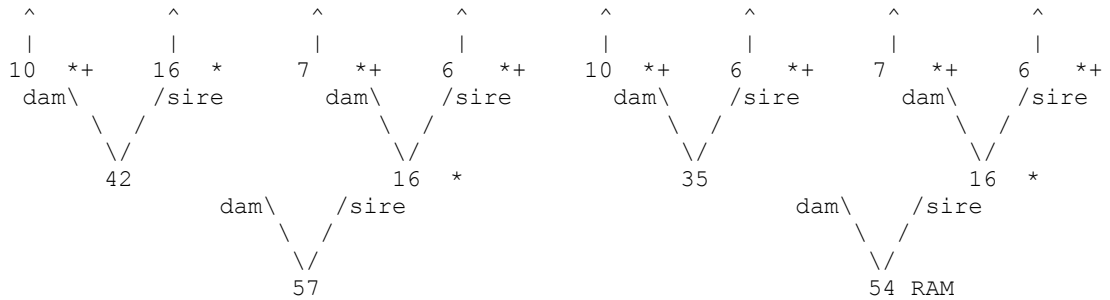
+ Wild-caught...

^ Pedigree continues beyond top of page...



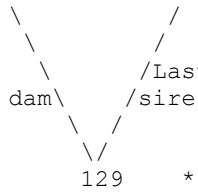
Sex: Male
 Birth Date: 19 Jan 1987
 Last Location: NANDANKAN (dead)
 House Name:
 Tattoo:
 Tag/Band:
 * Appear more than once...

=====
 Taxon Name: MACACA SILENUS Studbook Number: 129
 =====



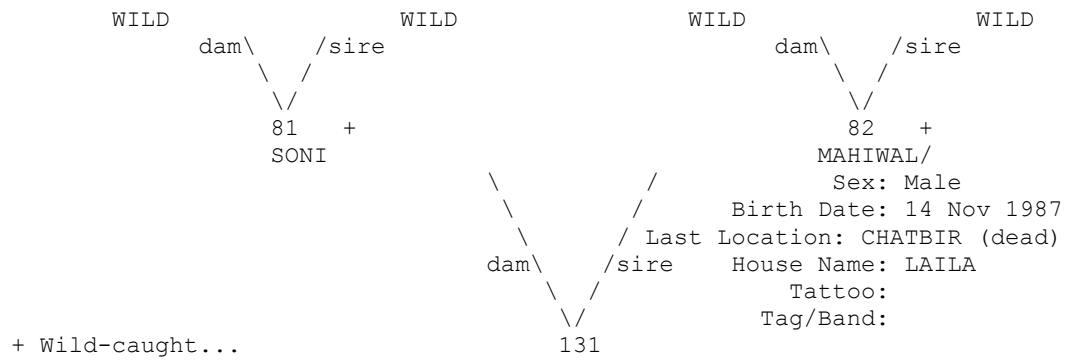
+ Wild-caught...

^ Pedigree continues beyond top of page...

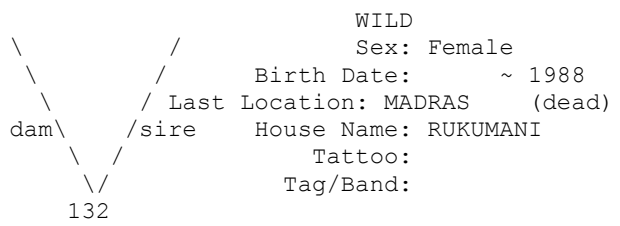


Sex: Male
 Birth Date: 21 Jan 1987
 Last Location: NANDANKAN (dead)
 House Name:
 Tattoo:
 Tag/Band:
 * Appear more than once...

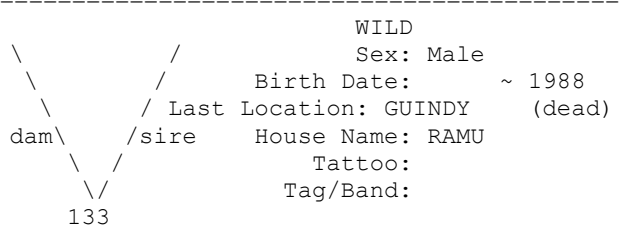
=====
 Taxon Name: MACACA SILENUS Studbook Number: 131
 =====



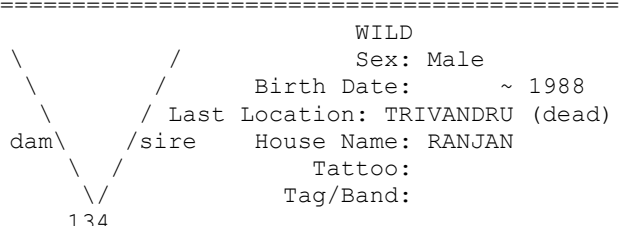
=====
 Taxon Name: MACACA SILENUS Studbook Number: 132
 =====



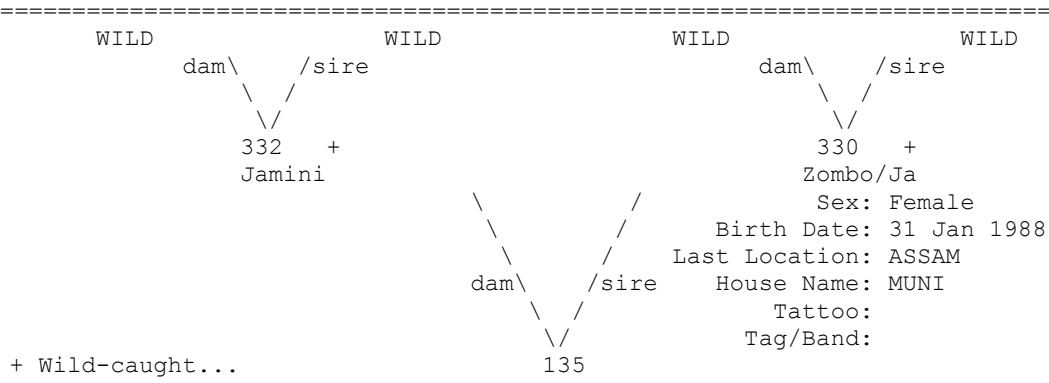
=====
 Taxon Name: MACACA SILENUS Studbook Number: 133
 =====



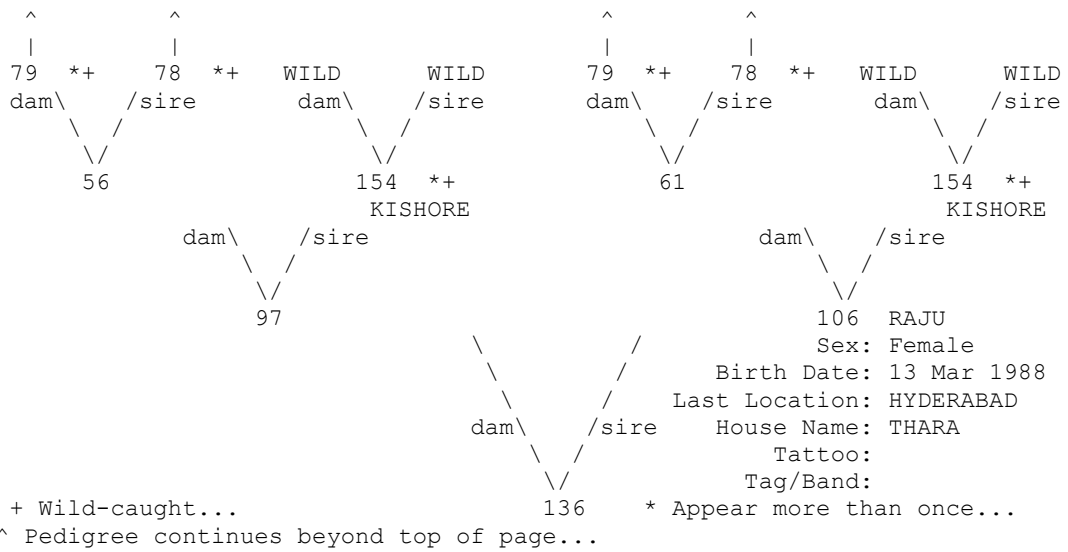
=====
 Taxon Name: MACACA SILENUS Studbook Number: 134
 =====



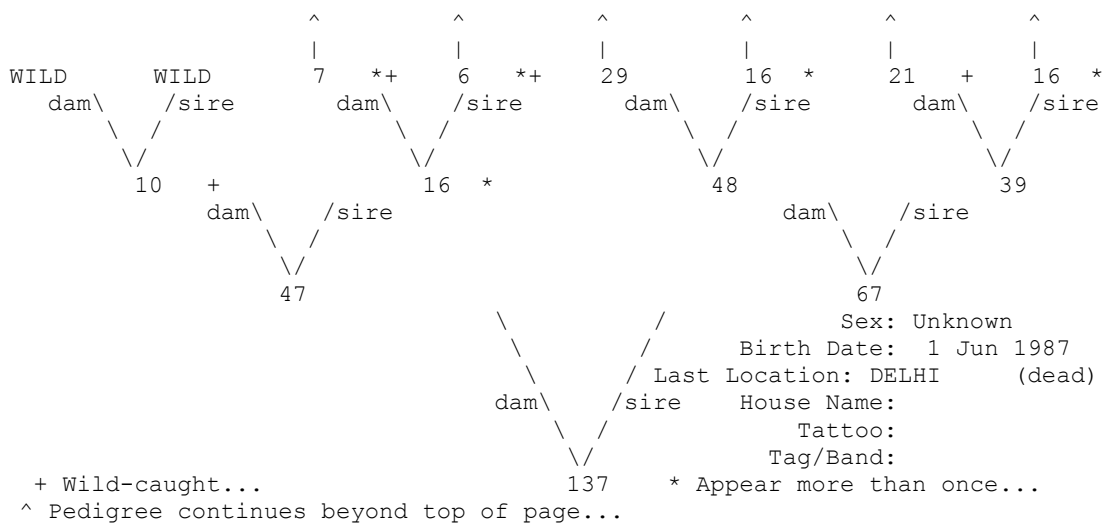
=====
 Taxon Name: MACACA SILENUS Studbook Number: 135
 =====



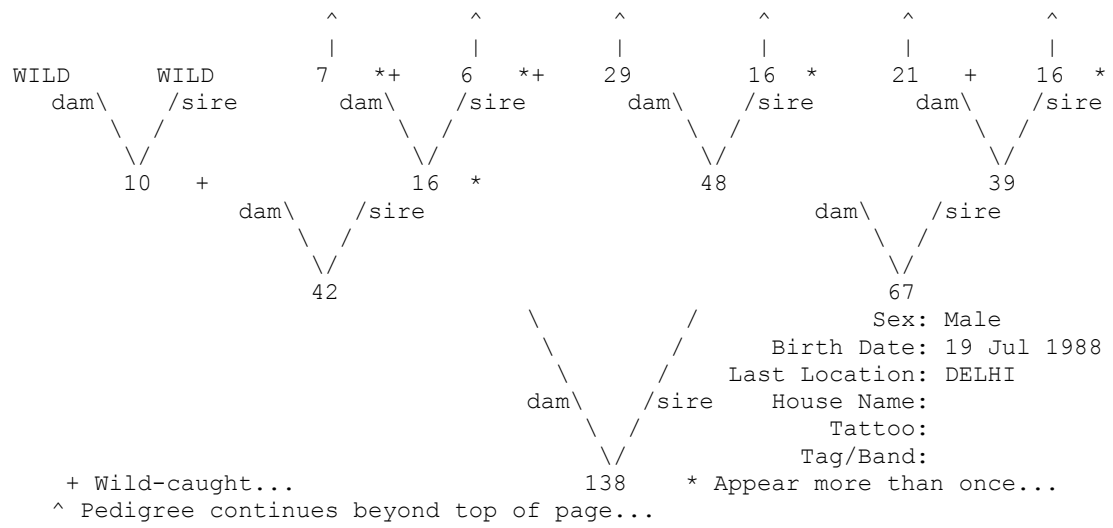
=====
 Taxon Name: MACACA SILENUS Studbook Number: 136
 =====



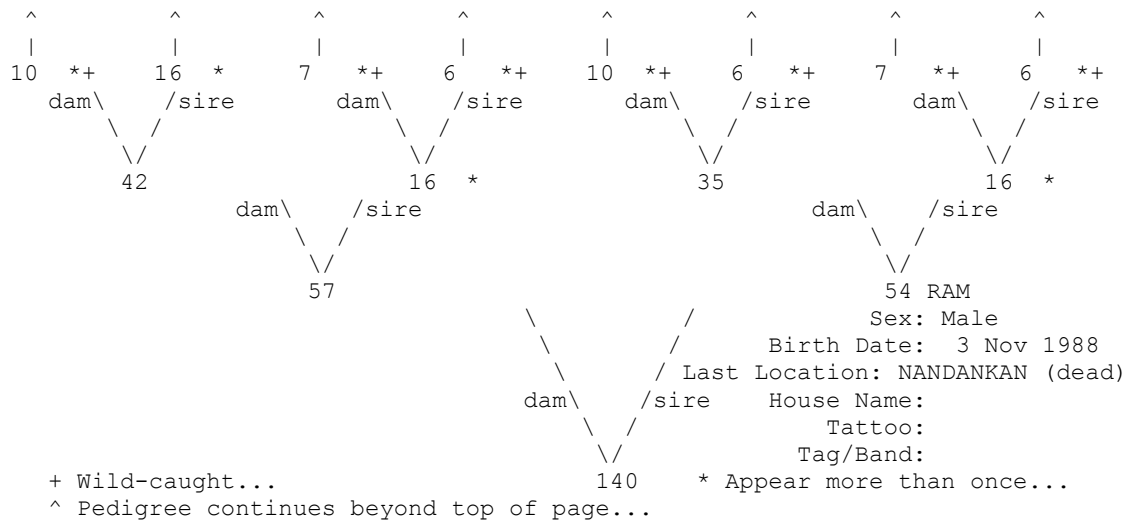
=====
 Taxon Name: MACACA SILENUS Studbook Number: 137
 =====



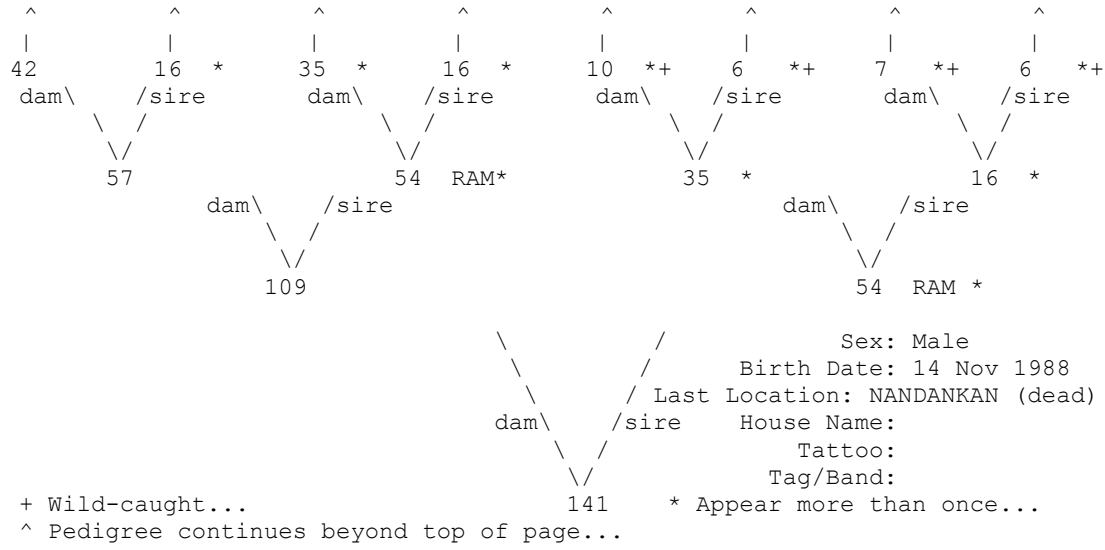
=====
 Taxon Name: MACACA SILENUS Studbook Number: 138
 =====



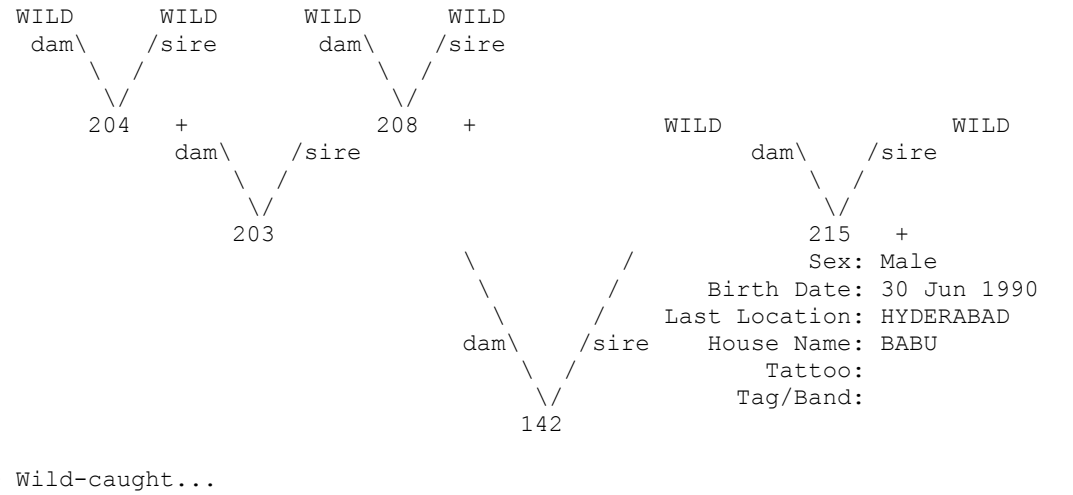
=====
 Taxon Name: MACACA SILENUS Studbook Number: 140
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 141
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 142
 =====



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 143
=====
      ^           ^           ^           ^           ^           ^           ^           ^
      |           |           |           |           |           |           |           |
      42          16 *        35 *        16 *        10 *+       6 *+       7 *+       6 *+
      dam\        /sire      dam\        /sire      dam\        /sire      dam\        /sire
          \      /          \      /          \      /          \      /
           57                54 RAM *        35 *                16 *
              dam\        /sire              dam\        /sire
                \      /                    \      /
                 119                        54 RAM *
                                           Sex: Male
                                           Birth Date: 25 Jan 1989
                                           Last Location: NANDANKAN (dead)
                                           House Name: nalu
                                           Tattoo:
                                           Tag/Band:
                                           143 * Appear more than once...
+ Wild-caught...
^ Pedigree continues beyond top of page...
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 145
=====
      UNK
      UNK
      dam\        /sire
          \      /
           145
      Sex: Female
      Birth Date:   ????
      Last Location: RANGOON
      House Name:
      Tattoo:
      Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 146
=====
      UNK
      UNK
      dam\        /sire
          \      /
           146
      Sex: Female
      Birth Date:   ????
      Last Location: KUALA LUM
      House Name:
      Tattoo:
      Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 148
=====
      WILD
      WILD
      dam\        /sire
          \      /
           148
      Sex: Female
      Birth Date:   ????
      Last Location: MADRAS
      House Name:
      Tattoo:
      Tag/Band:
=====

```

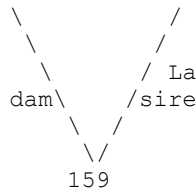
```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 154
=====
      WILD
      WILD
      dam\        /sire
          \      /
           154
      Sex: Male
      Birth Date:   ~ 1975
      Last Location: MADRAS
      House Name: KISHORE
      Tattoo:
      Tag/Band:
=====

```

=====
Taxon Name: MACACA SILENUS Studbook Number: 159
=====

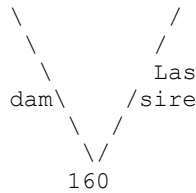
WILD



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

=====
Taxon Name: MACACA SILENUS Studbook Number: 160
=====

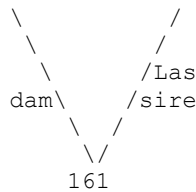
WILD



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

=====
Taxon Name: MACACA SILENUS Studbook Number: 161
=====

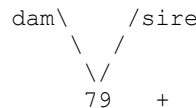
WILD



WILD
Sex: Female
Birth Date: ~ 1980
Last Location: TORONTO (dead)
House Name: SITA
Tattoo:
Tag/Band:

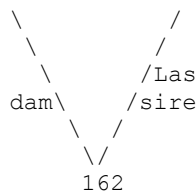
=====
Taxon Name: MACACA SILENUS Studbook Number: 162
=====

WILD

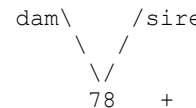


+ Wild-caught...

WILD



WILD

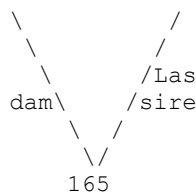


WILD
Sex: Female
Birth Date: 4 Nov 1988
Last Location: JAIPUR (dead)
House Name:
Tattoo:
Tag/Band:

WILD

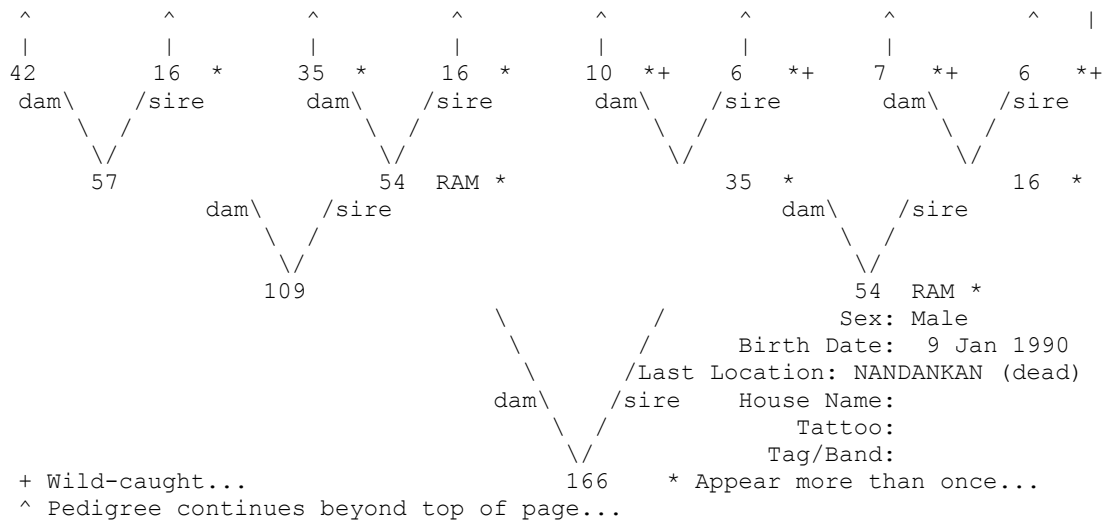
=====
Taxon Name: MACACA SILENUS Studbook Number: 165
=====

WILD

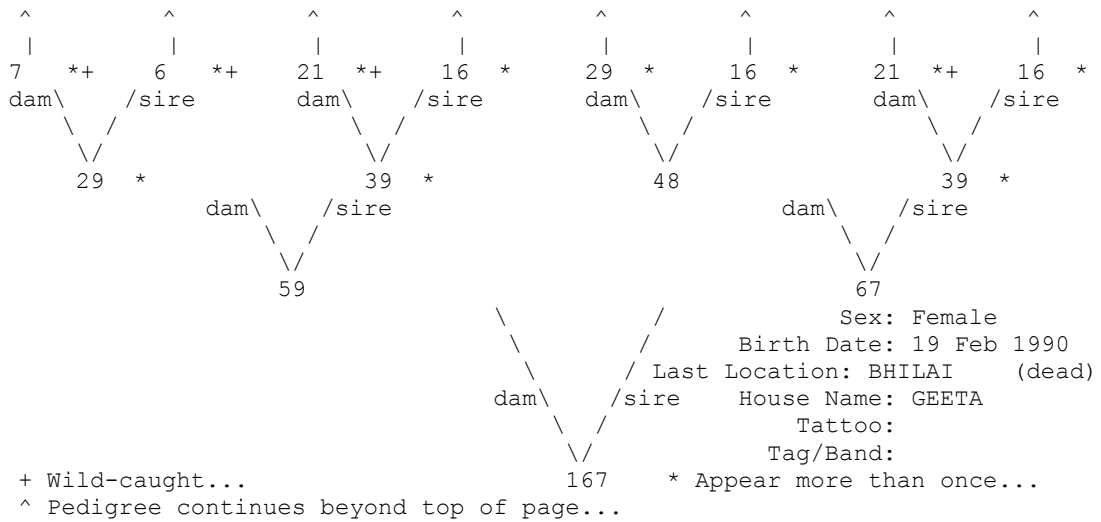


WILD
Sex: Male
Birth Date: ????
Last Location: TRIVANDRU (dead)
House Name: RAJAN
Tattoo:
Tag/Band:

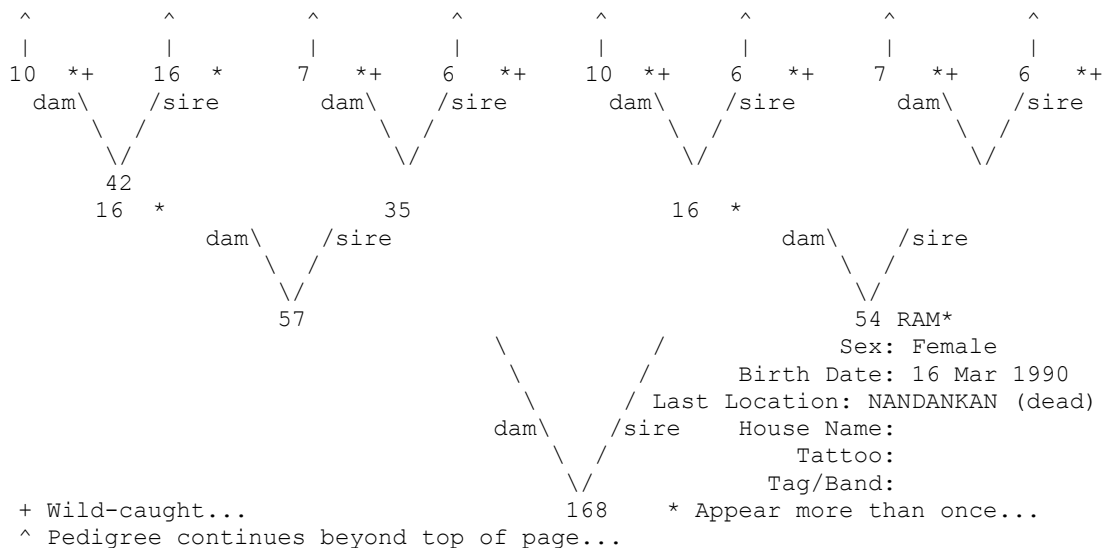
=====
 Taxon Name: MACACA SILENUS Studbook Number: 166
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 167
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 168
 =====



=====
Taxon Name: MACACA SILENUS Studbook Number: 170
=====

```
WILD WILD WILD WILD
dam\ /sire dam\ /sire
  \ /      \ /
   \ /      \ /
    243 +    110 +
    RADHA      MOHAN
                Sex: Male
                Birth Date: 28 May 1990
                Last Location: HYDERABAD (dead)
                House Name: SHAHIDHAR/SHASI
                Tattoo:
                Tag/Band:

+ Wild-caught... dam\ /sire
                   \ /
                    \ /
                     170
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 172
=====

```
WILD WILD
dam\ /sire
  \ /
   \ /
    172
                Sex: Female
                Birth Date: ~ 1996
                Last Location: TRIVANDRU
                House Name: PACHI
                Tattoo:
                Tag/Band:
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 173
=====

```
WILD WILD WILD WILD
dam\ /sire dam\ /sire
  \ /      \ /      \ /
   \ /      \ /      \ /
    120 +    110 +
    BHAMA      MOHAN
                Sex: Female
                Birth Date: 31 Dec 1991
                Last Location: MADRAS (dead)
                House Name: MALAR
                Tattoo:
                Tag/Band:

+ Wild-caught... dam\ /sire
                   \ /
                    \ /
                     173
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 174
=====

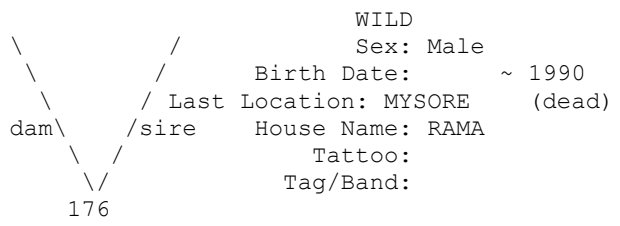
```
WILD WILD
dam\ /sire
  \ /
   \ /
    174
                Sex: Male
                Birth Date: ~ 1992
                Last Location: MADRAS (dead)
                House Name: SEKAR
                Tattoo:
                Tag/Band:
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 175
=====

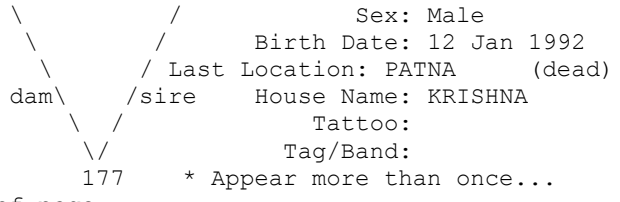
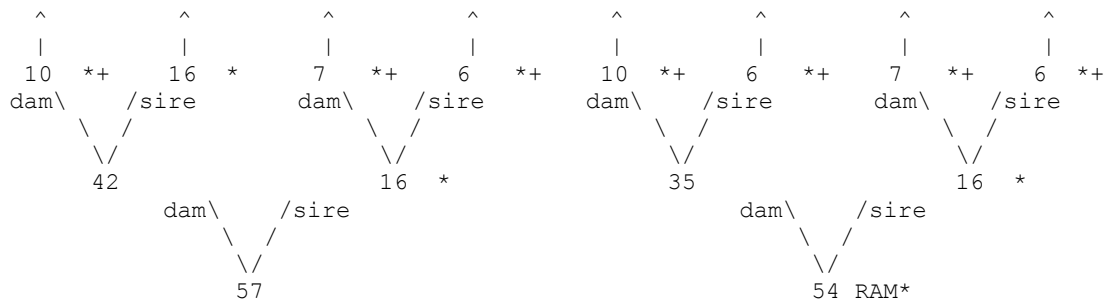
```
WILD WILD
dam\ /sire
  \ /
   \ /
    175
                Sex: Female
                Birth Date: ~ 1982
                Last Location: MYSORE
                House Name: PRIYA
                Tattoo:
                Tag/Band:
```


=====
 Taxon Name: MACACA SILENUS Studbook Number: 176
 =====

WILD



=====
 Taxon Name: MACACA SILENUS Studbook Number: 177
 =====



+ Wild-caught...
 ^ Pedigree continues beyond top of page...
 * Appear more than once...

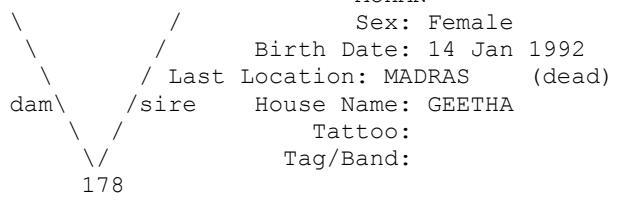
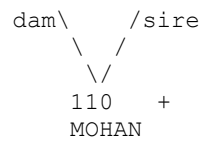
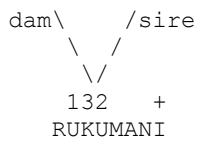
=====
 Taxon Name: MACACA SILENUS Studbook Number: 178
 =====

WILD

WILD

WILD

WILD



+ Wild-caught...

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 179
=====
      ^           ^           ^           ^           ^           ^           ^           ^
      |           |           |           |           |           |           |           |
      42          16 *       35 *       16 *       10 *+       6 *+       7 *+       6 *+
      dam\        /sire     dam\        /sire     dam\        /sire     dam\        /sire
      \          /         \          /         \          /         \          /
       57                    54 RAM *          35 *          16 *
                    dam\        /sire
                    \          /
                     109
                                \          /
                                dam\        /sire
                                \          /
                                 179
+ Wild-caught...
^ Pedigree continues beyond top of page...
Sex: Female
Birth Date: 29 Jan 1992
Last Location: PATNA (dead)
House Name:
Tattoo:
Tag/Band:
* Appear more than once...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 180
=====
      WILD          WILD          WILD          WILD
      dam\          /sire         dam\          /sire
      \          /         \          /
       120 +          110 +
       BHAMA          MOHAN
                    Sex: Male
                    Birth Date: 18 Aug 1992
                    Last Location: MADRAS (dead)
                    House Name: PADAN/SANKAR
                    Tattoo:
                    Tag/Band:
+ Wild-caught...
180

```

```

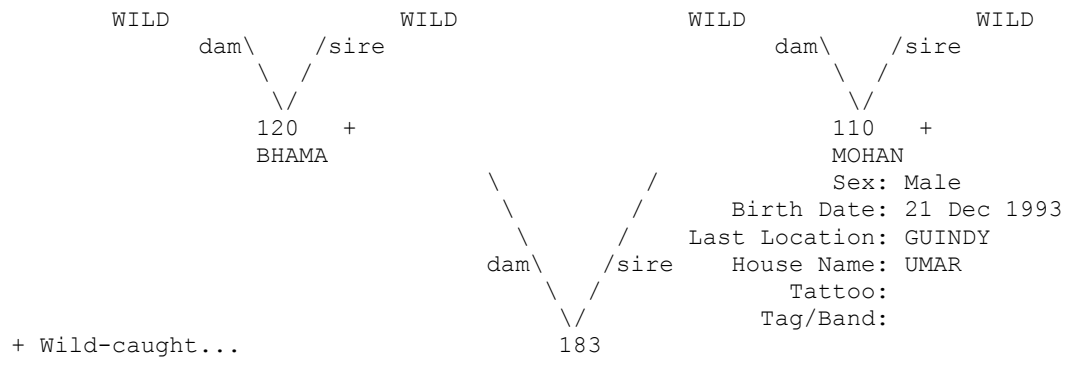
=====
Taxon Name: MACACA SILENUS                               Studbook Number: 182
=====
      WILD          WILD          WILD          WILD
      dam\          /sire         dam\          /sire
      \          /         \          /
       132 +          110 +
       RUKUMANI          MOHAN
                    Sex: Male
                    Birth Date: 1 Oct 1993
                    Last Location: MADRAS (dead)
                    House Name: VIJAYAN
                    Tattoo:
                    Tag/Band:
+ Wild-caught...
182

```

=====

Taxon Name: MACACA SILENUS Studbook Number: 183

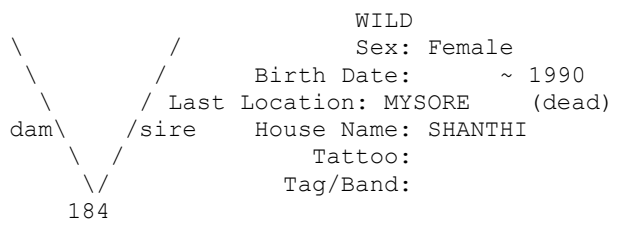
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 184

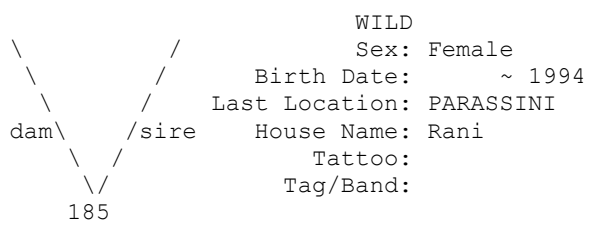
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 185

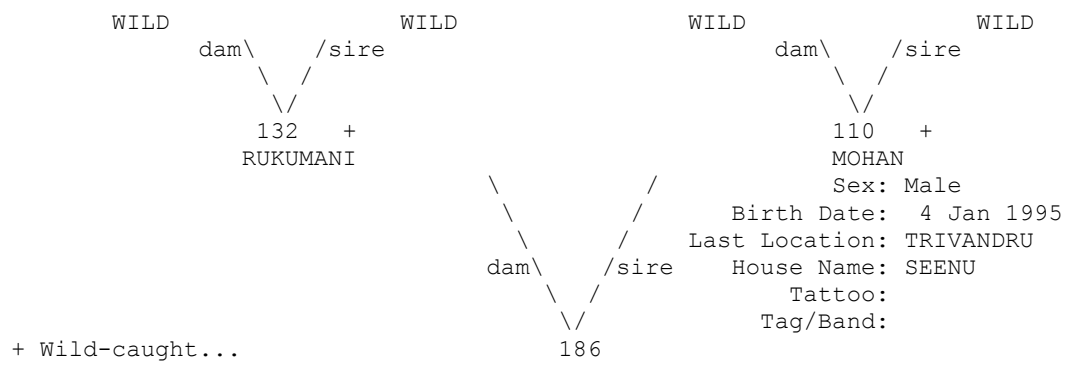
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 186

=====



=====
Taxon Name: MACACA SILENUS Studbook Number: 187
=====

```
WILD dam\ /sire WILD WILD dam\ /sire WILD
      \  /      \  /      \  /      \  /
      120 +      110 +
      BHAMA      MOHAN
                  Sex: Female
                  Birth Date: 14 Jun 1995
                  Last Location: MADRAS
                  House Name: AAZP13
                  Tattoo:
                  Tag/Band:

+ Wild-caught... dam\ /sire
                  \  /
                  187
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 188
=====

```
WILD dam\ /sire WILD WILD dam\ /sire WILD
      \  /      \  /      \  /      \  /
      132 +      110 +
      RUKUMANI    MOHAN
                  Sex: Female
                  Birth Date: 13 Jul 1996
                  Last Location: MADRAS
                  House Name: AAZP29
                  Tattoo:
                  Tag/Band:

+ Wild-caught... dam\ /sire
                  \  /
                  188
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 189
=====

```
WILD dam\ /sire WILD WILD dam\ /sire WILD
      \  /      \  /      \  /      \  /
      120 +      110 +
      BHAMA      MOHAN
                  Sex: Male
                  Birth Date: 17 Sep 1996
                  Last Location: MYSORE (dead)
                  House Name: LINGAN
                  Tattoo:
                  Tag/Band:

+ Wild-caught... dam\ /sire
                  \  /
                  189
```

=====
Taxon Name: MACACA SILENUS Studbook Number: 190
=====

```
WILD dam\ /sire WILD WILD dam\ /sire WILD
      \  /      \  /      \  /      \  /
      120 +      110 +
      BHAMA      MOHAN
                  Sex: Female
                  Birth Date: 27 May 1998
                  Last Location: MADRAS
                  House Name: AAZP-17
                  Tattoo:
                  Tag/Band:

+ Wild-caught... dam\ /sire
                  \  /
                  190
```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 191
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1997
                                                     Last Location: MADRAS
                                                     House Name: APSARA
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
      \  /
       V
      191

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 192
=====
WILD WILD WILD WILD
dam\  /sire dam\  /sire
  \  /       \  /
   V         V
  120 +      110 +
  BHAMA      MOHAN
              Sex: Male
              Birth Date: 26 Oct 1999
              Last Location: MADRAS (dead)
              House Name: MANI
              Tattoo:
              Tag/Band:
    dam\  /sire
      \  /
       V
      192
+ Wild-caught...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 193
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ???
                                                     Last Location: CHATBIR
                                                     House Name:
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
      \  /
       V
      193

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 194
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ???
                                                     Last Location: CALCUTTA (dead)
                                                     House Name:
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
      \  /
       V
      194

```

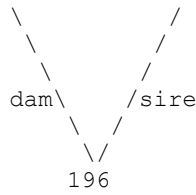
```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 195
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ???
                                                     Last Location: CALCUTTA (dead)
                                                     House Name:
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
      \  /
       V
      195

```

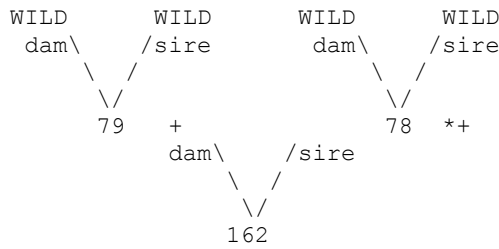
=====
 Taxon Name: MACACA SILENUS Studbook Number: 196
 =====

WILD

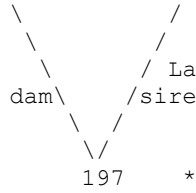


WILD
 Sex: Male
 Birth Date: ~ 1980
 Last Location: VOC PKZOO
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 197
 =====

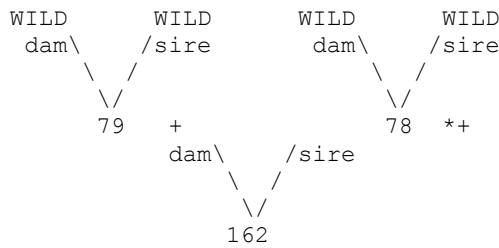


+ Wild-caught...

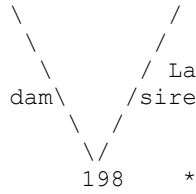


WILD dam\ /sire WILD
 78 *+
 Sex: Female
 Birth Date: 11 Dec 1993
 Last Location: JAIPUR (dead)
 House Name:
 Tattoo:
 Tag/Band:
 * Appear more than once...

=====
 Taxon Name: MACACA SILENUS Studbook Number: 198
 =====

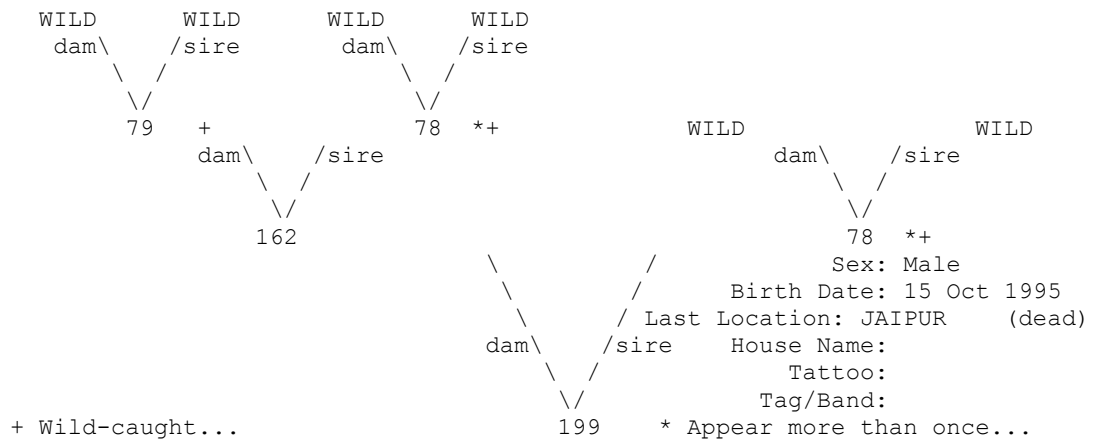


+ Wild-caught...

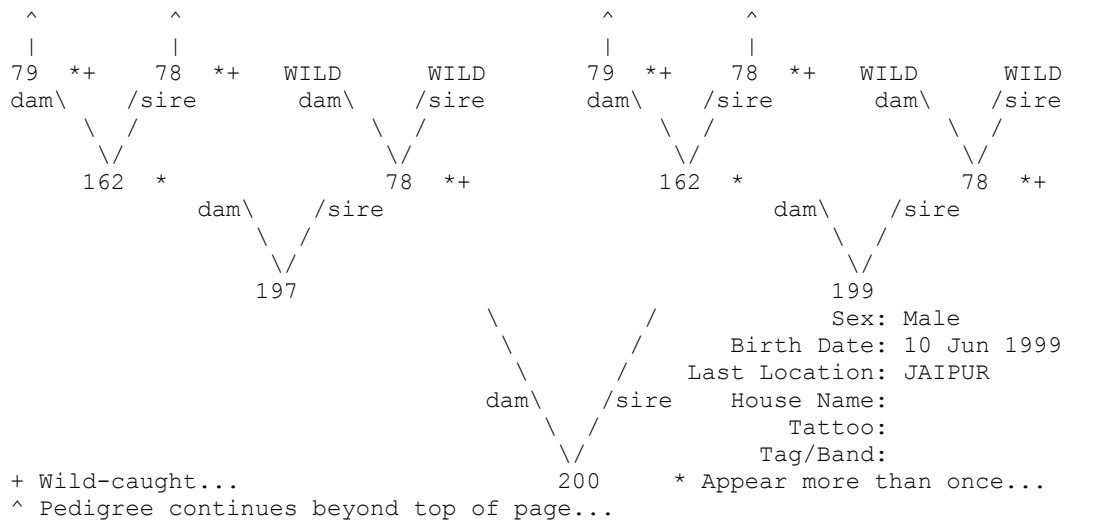


WILD dam\ /sire WILD
 78 *+
 Sex: Unknown
 Birth Date: 20 May 1994
 Last Location: JAIPUR (dead)
 House Name:
 Tattoo:
 Tag/Band:
 * Appear more than once...

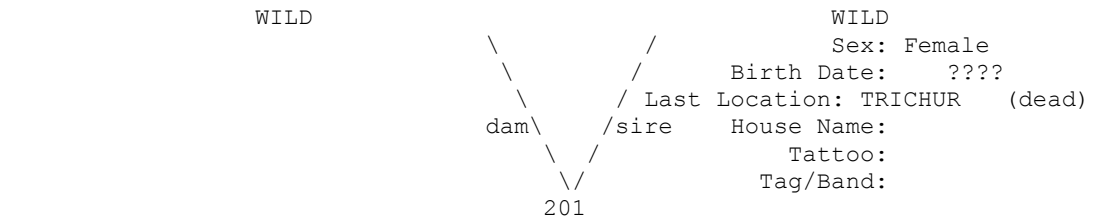
=====
 Taxon Name: MACACA SILENUS Studbook Number: 199
 =====



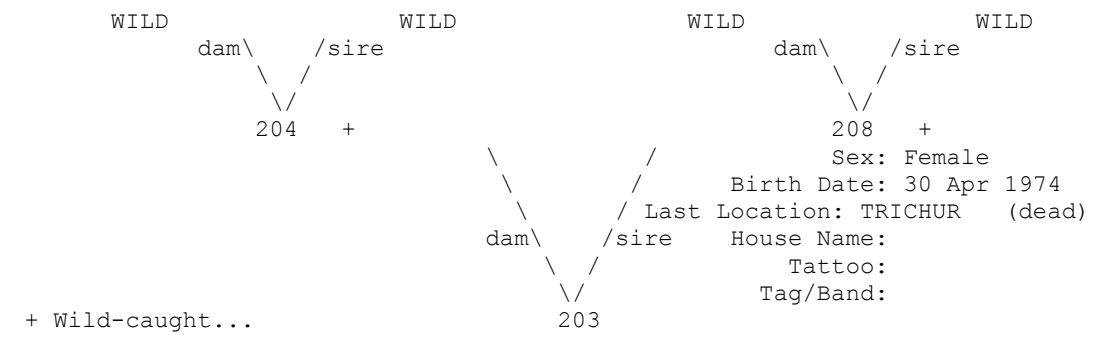
=====
 Taxon Name: MACACA SILENUS Studbook Number: 200
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 201
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 203
 =====



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 204
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1967
                                                     Last Location: TRICHUR (dead)
dam \ / sire                                         House Name:
                                                     Tattoo:
                                                     Tag/Band:
                                                     204

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 208
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1955
                                                     Last Location: TRICHUR (dead)
dam \ / sire                                         House Name:
                                                     Tattoo:
                                                     Tag/Band:
                                                     208

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 209
=====
MULT *                                                  MULT *
                                                     Sex: Unknown
                                                     Birth Date: 11 Oct 1963
                                                     Last Location: DELHI (dead)
dam \ / sire                                         House Name:
                                                     Tattoo:
                                                     Tag/Band:
                                                     209
* Appear more than once...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 211
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 1977
                                                     Last Location: KANPUR (dead)
dam \ / sire                                         House Name: SEETA
                                                     Tattoo:
                                                     Tag/Band:
                                                     211

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 212
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1977
                                                     Last Location: JAIPUR (dead)
dam \ / sire                                         House Name:
                                                     Tattoo:
                                                     Tag/Band:
                                                     212

```

```

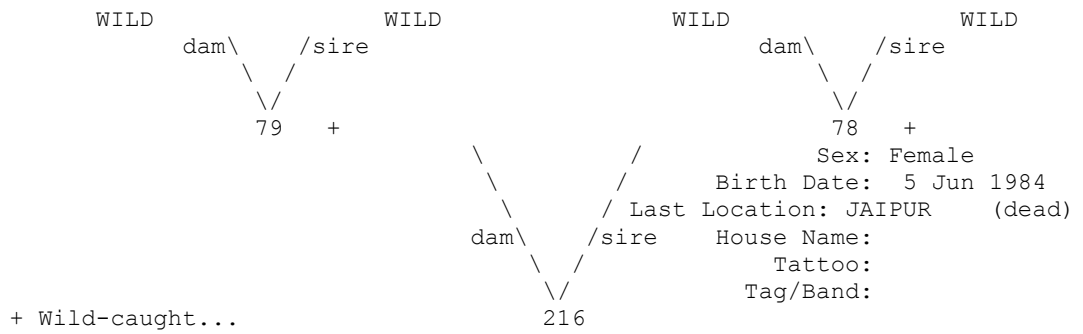
=====
Taxon Name: MACACA SILENUS                               Studbook Number: 215
=====
WILD                                                     WILD
                                                     Sex: Male
                                                     Birth Date: ~ 1984
                                                     Last Location: TRICHUR (dead)
dam \ / sire                                         House Name:
                                                     Tattoo:
                                                     Tag/Band:
                                                     215

```


=====

Taxon Name: MACACA SILENUS Studbook Number: 216

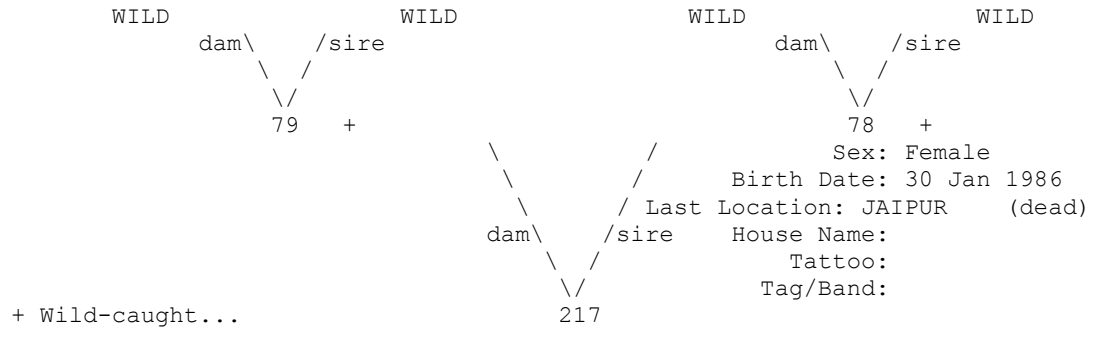
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 217

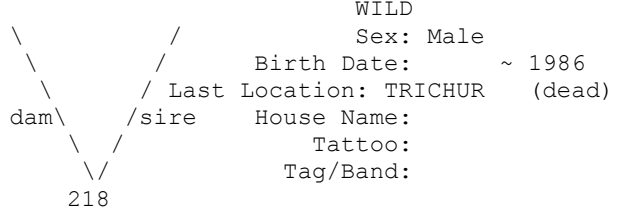
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 218

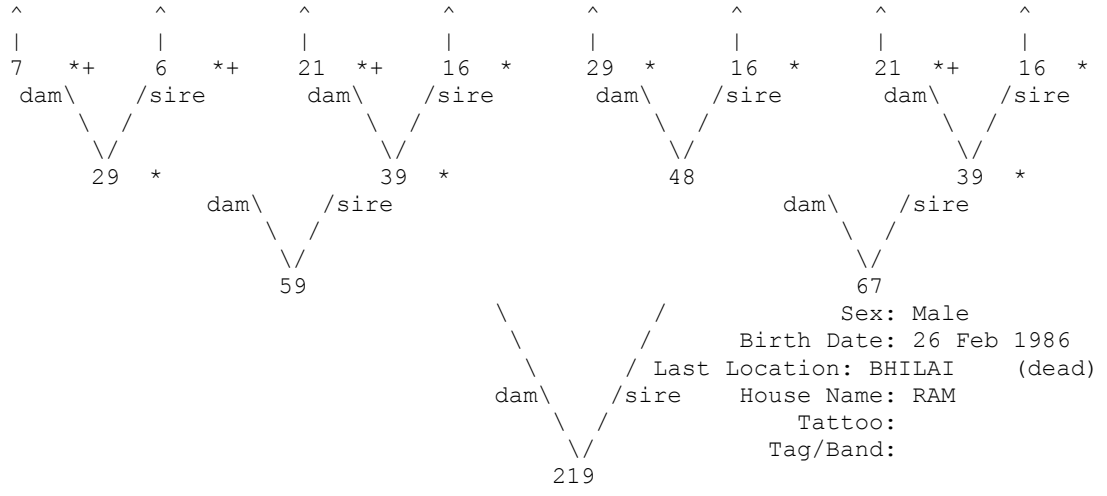
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 219

=====



+ Wild-caught... * Appear more than once...
^ Pedigree continues beyond top of page...

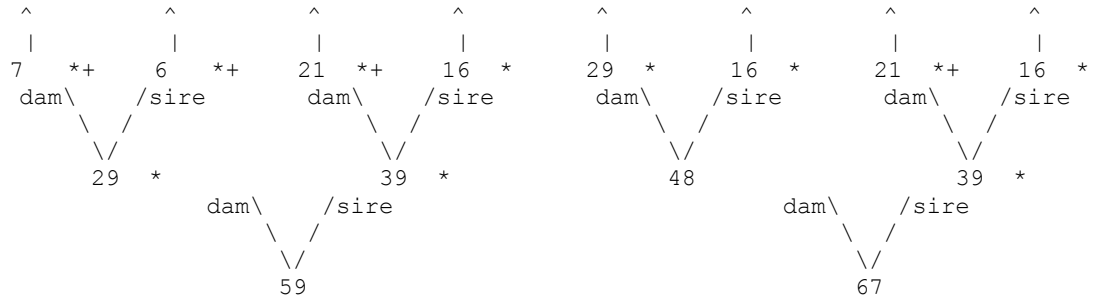
=====
 Taxon Name: MACACA SILENUS Studbook Number: 220
 =====

WILD



WILD
 Sex: Male
 Birth Date: ~ 1987
 Last Location: TRICHUR
 House Name:
 Tattoo:
 Tag/Band:

=====
 Taxon Name: MACACA SILENUS Studbook Number: 221
 =====



+ Wild-caught...
 ^ Pedigree continues beyond top of page...

Sex: Male
 Birth Date: 10 Apr 1987
 Last Location: BHILAI (dead)
 House Name: SHYAM
 Tattoo:
 Tag/Band:

* Appear more than once...

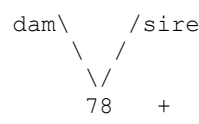
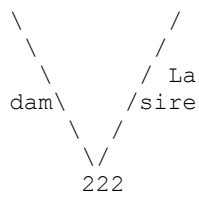
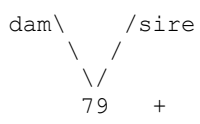
=====
 Taxon Name: MACACA SILENUS Studbook Number: 222
 =====

WILD

WILD

WILD

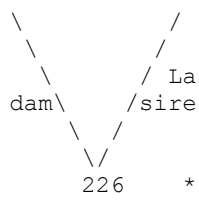
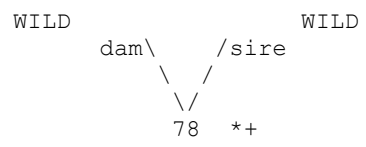
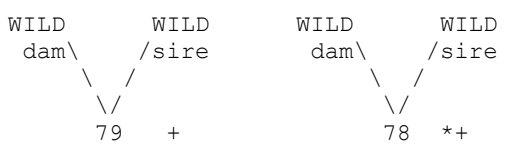
WILD



Sex: Female
 Birth Date: 4 May 1987
 Last Location: JAIPUR (dead)
 House Name:
 Tattoo:
 Tag/Band:

+ Wild-caught...

=====
 Taxon Name: MACACA SILENUS Studbook Number: 226
 =====



Sex: Female
 Birth Date: 19 Jul 1992
 Last Location: JAIPUR (dead)
 House Name:
 Tattoo:
 Tag/Band:

+ Wild-caught...

* Appear more than once...

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 228
=====
UNK                                                       UNK
                  \      /
                  /      \
                dam\      /sire
                   \    /
                   228
                  /      \
                  /      \
                Last Location: TRICHUR (dead)
                Birth Date:  ???
                Sex: Male
                House Name:
                Tattoo:
                Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 229
=====
UNK                                                       UNK
                  \      /
                  /      \
                dam\      /sire
                   \    /
                   229
                  /      \
                  /      \
                Last Location: TRIVANDRU
                Birth Date:  ???
                Sex: Male
                House Name:
                Tattoo:
                Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 230
=====
UNK                                                       UNK
                  \      /
                  /      \
                dam\      /sire
                   \    /
                   230
                  /      \
                  /      \
                Last Location: TRICHUR (dead)
                Birth Date:  ???
                Sex: Female
                House Name:
                Tattoo:
                Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 231
=====
UNK                                                       UNK
                  \      /
                  /      \
                dam\      /sire
                   \    /
                   231
                  /      \
                  /      \
                Last Location: TRICHUR (dead)
                Birth Date:  ???
                Sex: Female
                House Name:
                Tattoo:
                Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 232
=====
UNK                                                       UNK
                  \      /
                  /      \
                dam\      /sire
                   \    /
                   232
                  /      \
                  /      \
                Last Location: TRICHUR (dead)
                Birth Date:  ???
                Sex: Female
                House Name:
                Tattoo:
                Tag/Band:
=====

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 233
=====
UNK                                                       UNK
                  \      /
                  /      \
                dam\      /sire
                   \    /
                   233
                  /      \
                  /      \
                Last Location: TRICHUR
                Birth Date:  ???
                Sex: Female
                House Name:
                Tattoo:
                Tag/Band:
=====

```



```

=====
Taxon Name: MACACA SILENUS                      Studbook Number: 242
=====
UNK
                               UNK
                               Sex: Male
                               Birth Date:   ????
                               Last Location: TRICHUR (dead)
                               dam\  /sire      House Name:
                               /      /       Tattoo:
                               \      \       Tag/Band:
                               242

```

```

=====
Taxon Name: MACACA SILENUS                      Studbook Number: 243
=====
WILD
                               WILD
                               Sex: Female
                               Birth Date:   ~ 1985
                               Last Location: MADRAS (dead)
                               dam\  /sire      House Name: RADHA
                               /      /       Tattoo:
                               \      \       Tag/Band:
                               243

```

```

=====
Taxon Name: MACACA SILENUS                      Studbook Number: 244
=====
UNK
                               UNK
                               Sex: Male
                               Birth Date:   31 Mar 1986
                               Last Location: TRIVANDRU (dead)
                               dam\  /sire      House Name: RAVI
                               /      /       Tattoo:
                               \      \       Tag/Band:
                               244

```

```

=====
Taxon Name: MACACA SILENUS                      Studbook Number: 245
=====
WILD      WILD      WILD      WILD
  dam\    /sire      dam\    /sire
   \      /          \      /
   238  +            239  +
  MEENA                JANI
                        Sex: Male
                        Birth Date: 13 Jul 1981
                        Last Location: VEERMATA (dead)
                        dam\  /sire      House Name: RAMU
                        /      /       Tattoo:
                        \      \       Tag/Band:
                        245
+ Wild-caught...

```

```

=====
Taxon Name: MACACA SILENUS                      Studbook Number: 246
=====
WILD
                               WILD
                               Sex: Male
                               Birth Date:   ~ 1991
                               Last Location: MADRAS (dead)
                               dam\  /sire      House Name: KAMRAJ
                               /      /       Tattoo:
                               \      \       Tag/Band:
                               246

```



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 255
=====
WILD                                                     WILD
                                                         Sex: Female
                                                         Birth Date: ~ Sep 1992
                                                         Last Location: PATNA (dead)
dam\ /sire                                             House Name:
  \ /                                                 Tattoo:
   V                                                  Tag/Band:
  255

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 256
=====
WILD WILD WILD WILD
dam\ /sire dam\ /sire dam\ /sire dam\ /sire
  \ /      \ /      \ /      \ /
   V        V        V        V
  120      +      132      +      110      +
  BHAMA    +      RUKUMANI    +      MOHAN
                                                         dam\ /sire
                                                         \ /
                                                         V
                                                         182
                                                         VIJAYAN
                                                         Sex: Male
                                                         Birth Date: 15 Jun 2000
                                                         Last Location: MADRAS (dead)
dam\ /sire                                             House Name: VENKET
  \ /                                                 Tattoo:
   V                                                  Tag/Band:
  256
+ Wild-caught...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 258
=====
WILD                                                     WILD
                                                         Sex: Female
                                                         Birth Date: ???
                                                         Last Location: PARASSINI (dead)
dam\ /sire                                             House Name:
  \ /                                                 Tattoo:
   V                                                  Tag/Band:
  258

```

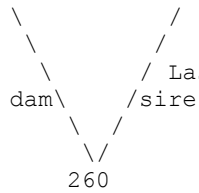
```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 259
=====
WILD WILD WILD WILD
dam\ /sire dam\ /sire dam\ /sire dam\ /sire
  \ /      \ /      \ /      \ /
   V        V        V        V
  120      +      110      +
  BHAMA    +      MOHAN
                                                         Sex: Female
                                                         Birth Date: 14 Apr 2001
                                                         Last Location: MADRAS (dead)
dam\ /sire                                             House Name: VIJI
  \ /                                                 Tattoo:
   V                                                  Tag/Band:
  259
+ Wild-caught...

```

=====
 Taxon Name: MACACA SILENUS Studbook Number: 260
 =====

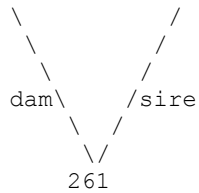
WILD



WILD
 Sex: Female
 Birth Date: ~ 2001
 Last Location: MADRAS (dead)
 House Name: RAMYA
 Tattoo:
 Tag/Band:

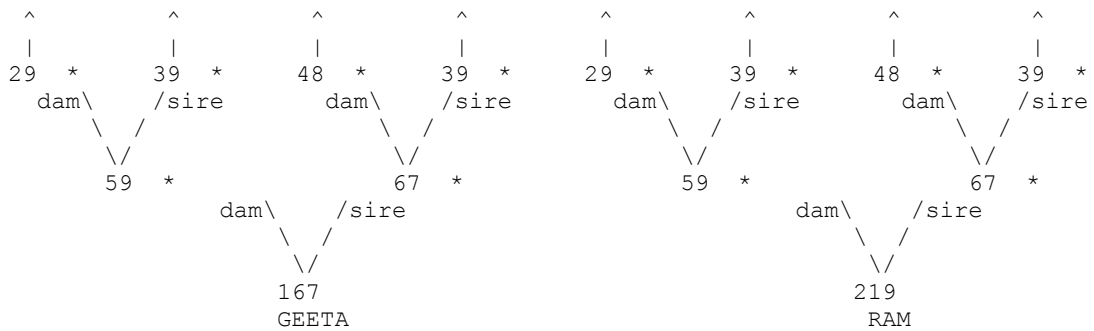
=====
 Taxon Name: MACACA SILENUS Studbook Number: 261
 =====

WILD



WILD
 Sex: Female
 Birth Date: ~ 2001
 Last Location: MYSORE
 House Name: ANKITHA
 Tattoo:
 Tag/Band:

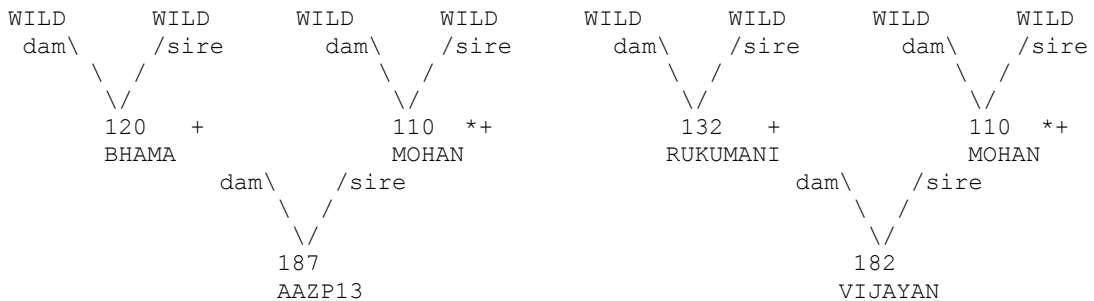
=====
 Taxon Name: MACACA SILENUS Studbook Number: 262
 =====



WILD
 Sex: Female
 Birth Date: 16 Dec 2001
 Last Location: BHILAI (dead)
 House Name: RAJKUMARI
 Tattoo:
 Tag/Band:
 * Appear more than once...

^ Pedigree continues beyond top of page...

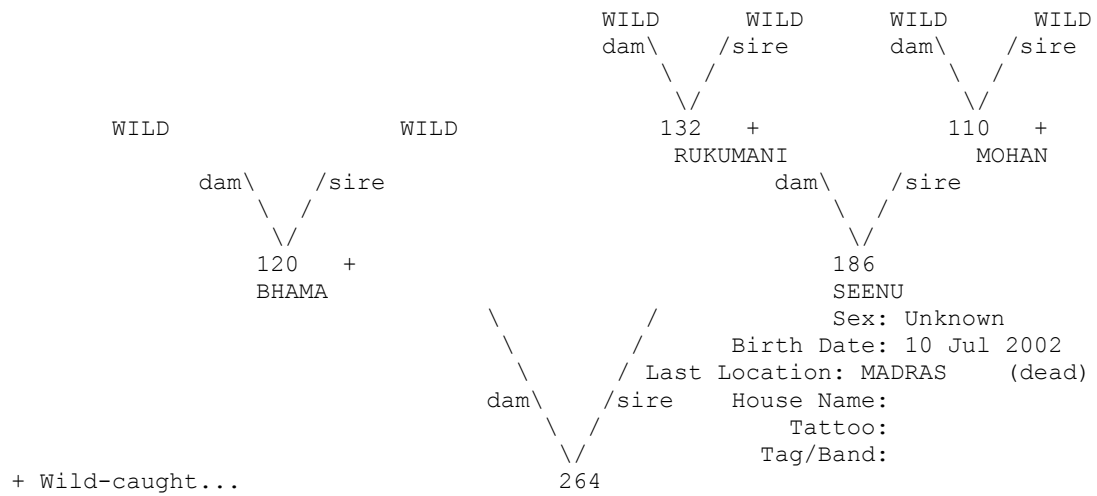
=====
 Taxon Name: MACACA SILENUS Studbook Number: 263
 =====



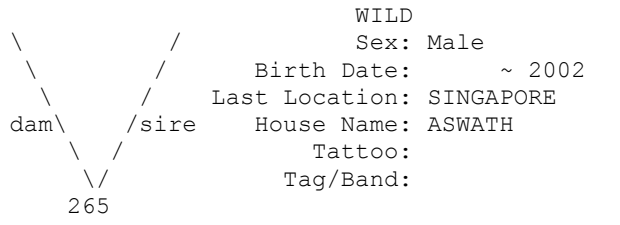
WILD
 Sex: Male
 Birth Date: 17 Jan 2002
 Last Location: DELHI
 House Name: DASS
 Tattoo:
 Tag/Band:
 * Appear more than once...

+ Wild-caught...

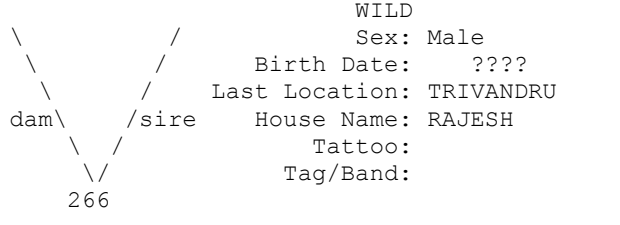
=====
 Taxon Name: MACACA SILENUS Studbook Number: 264
 =====



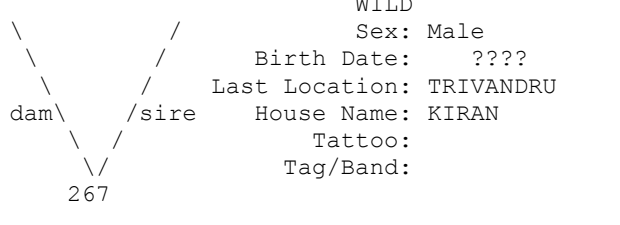
=====
 Taxon Name: MACACA SILENUS Studbook Number: 265
 =====



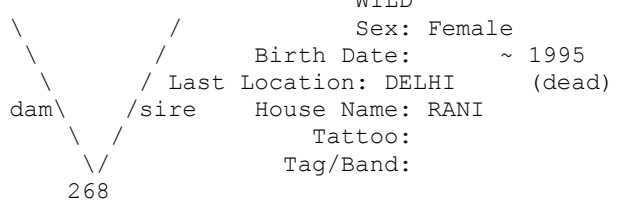
=====
 Taxon Name: MACACA SILENUS Studbook Number: 266
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 267
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 268
 =====



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 269
=====
                                WILD      WILD      WILD      WILD
                                dam\     /sire    dam\     /sire
                                \      /       \      /
                                120  +      110  +
                                BHAMA          MOHAN
                                \      /       \      /
                                dam\     /sire    dam\     /sire
                                \      /       \      /
                                191  +      189
                                APSARA          LINGAN
                                \      /       \      /
                                dam\     /sire    dam\     /sire
                                \      /       \      /
                                269          Sex: Male
                                Birth Date: 9 Jan 2003
                                Last Location: MADRAS (dead)
                                House Name:
                                Tattoo:
                                Tag/Band:

WILD      WILD
dam\     /sire
 \      /
 191  +
APSARA

+ Wild-caught...

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 270
=====
                                WILD
                                \      /
                                dam\     /sire
                                \      /
                                270
                                \      /
                                dam\     /sire
                                \      /
                                Sex: Male
                                Birth Date: ???
                                Last Location: TRIVANDRU
                                House Name: RAMAN
                                Tattoo:
                                Tag/Band:

```

```

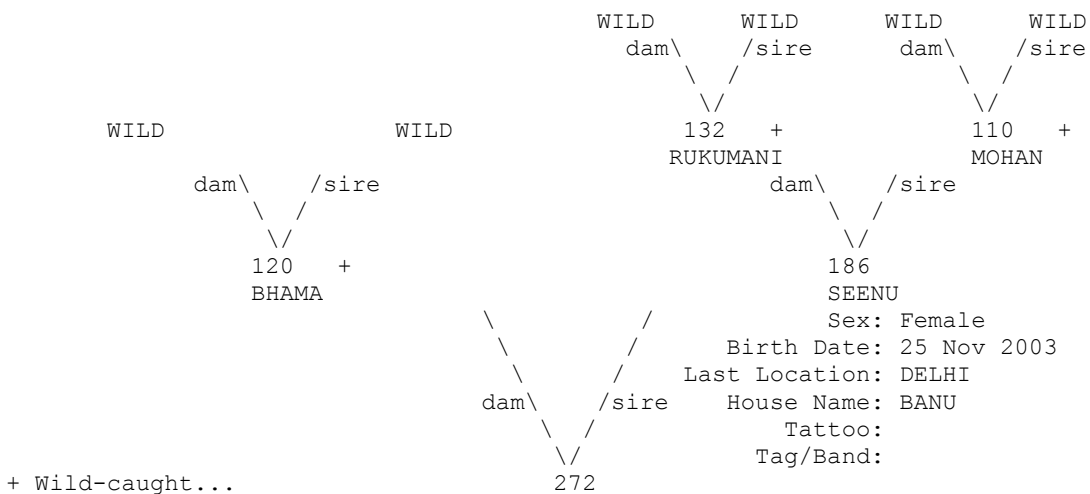
=====
Taxon Name: MACACA SILENUS                               Studbook Number: 271
=====
                                WILD      WILD      WILD      WILD      WILD      WILD      WILD      WILD
                                dam\     /sire    dam\     /sire    dam\     /sire    dam\     /sire
                                \      /       \      /       \      /       \      /
                                120  +      110  *+    132  +      110  *+
                                BHAMA          MOHAN          RUKUMANI          MOHAN
                                \      /       \      /       \      /       \      /
                                dam\     /sire    dam\     /sire    dam\     /sire    dam\     /sire
                                \      /       \      /       \      /       \      /
                                187          182
                                AAZP13          VIJAYAN
                                \      /       \      /       \      /       \      /
                                dam\     /sire    dam\     /sire    dam\     /sire    dam\     /sire
                                \      /       \      /       \      /       \      /
                                271          Sex: Male
                                Birth Date: 23 Jul 2003
                                Last Location: MADRAS (dead)
                                House Name: MURUGAN
                                Tattoo:
                                Tag/Band:

WILD      WILD      WILD      WILD
dam\     /sire    dam\     /sire    dam\     /sire    dam\     /sire
 \      /       \      /       \      /       \      /
 120  +      110  *+    132  +      110  *+
 BHAMA          MOHAN          RUKUMANI          MOHAN
 \      /       \      /       \      /       \      /
 dam\     /sire    dam\     /sire    dam\     /sire    dam\     /sire
 \      /       \      /       \      /       \      /
 187          182
 AAZP13          VIJAYAN
 \      /       \      /       \      /       \      /
 dam\     /sire    dam\     /sire    dam\     /sire    dam\     /sire
 \      /       \      /       \      /       \      /
 271          Sex: Male
 Birth Date: 23 Jul 2003
 Last Location: MADRAS (dead)
 House Name: MURUGAN
 Tattoo:
 Tag/Band:

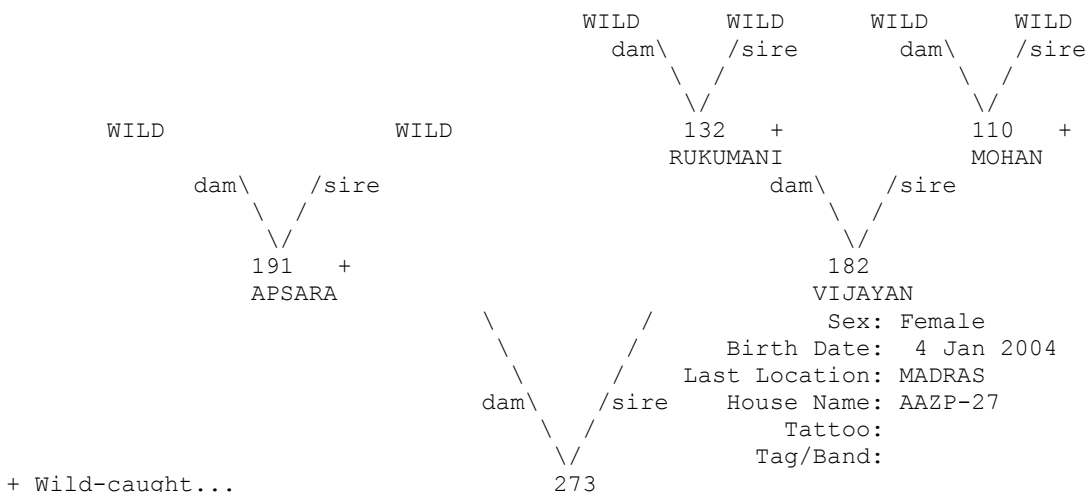
+ Wild-caught...
* Appear more than once...

```

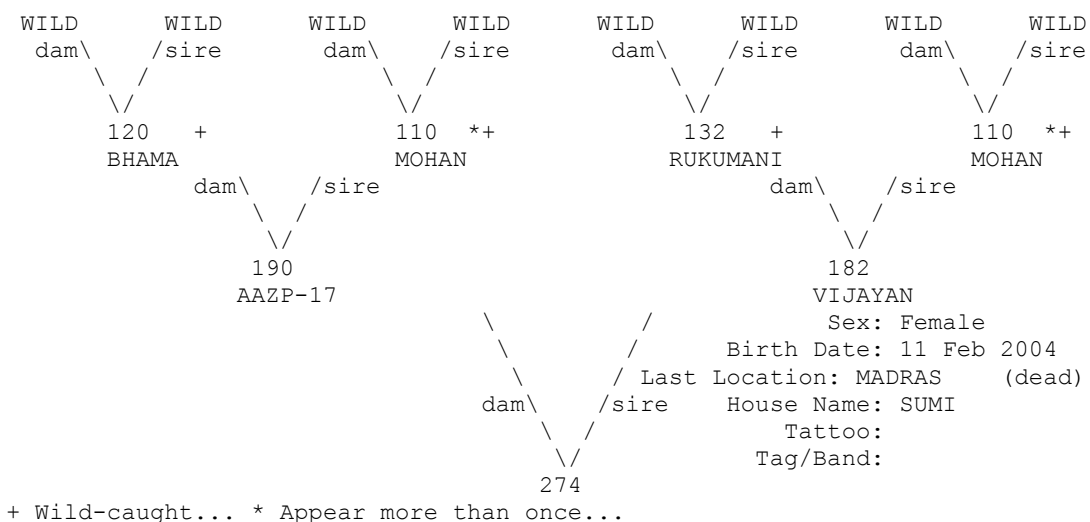
=====
Taxon Name: MACACA SILENUS Studbook Number: 272
=====



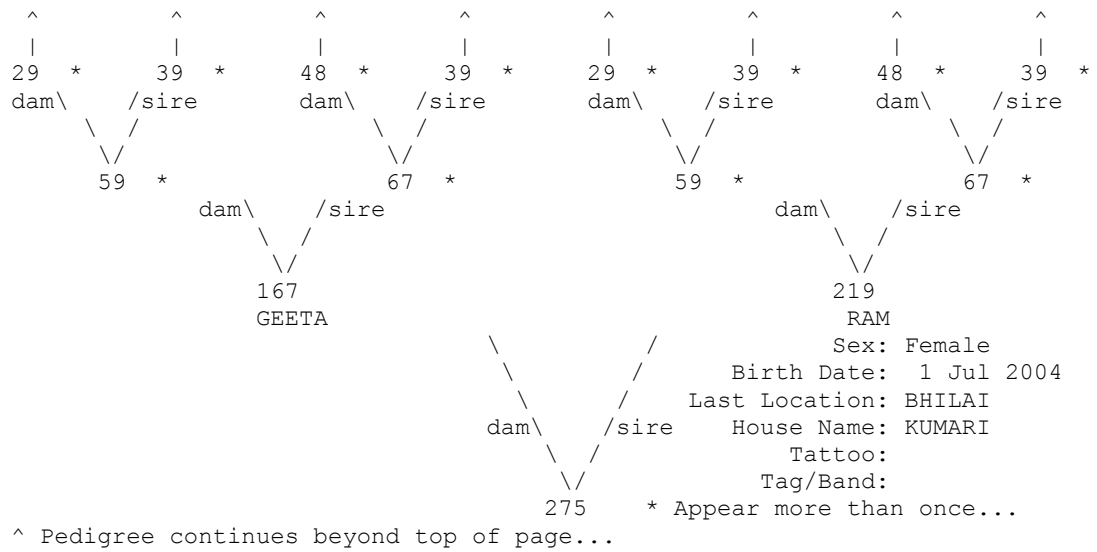
=====
Taxon Name: MACACA SILENUS Studbook Number: 273
=====



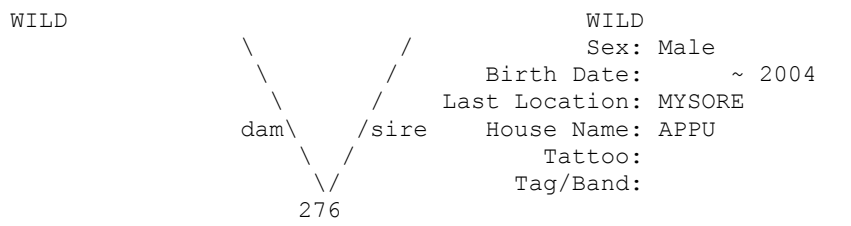
=====
Taxon Name: MACACA SILENUS Studbook Number: 274
=====



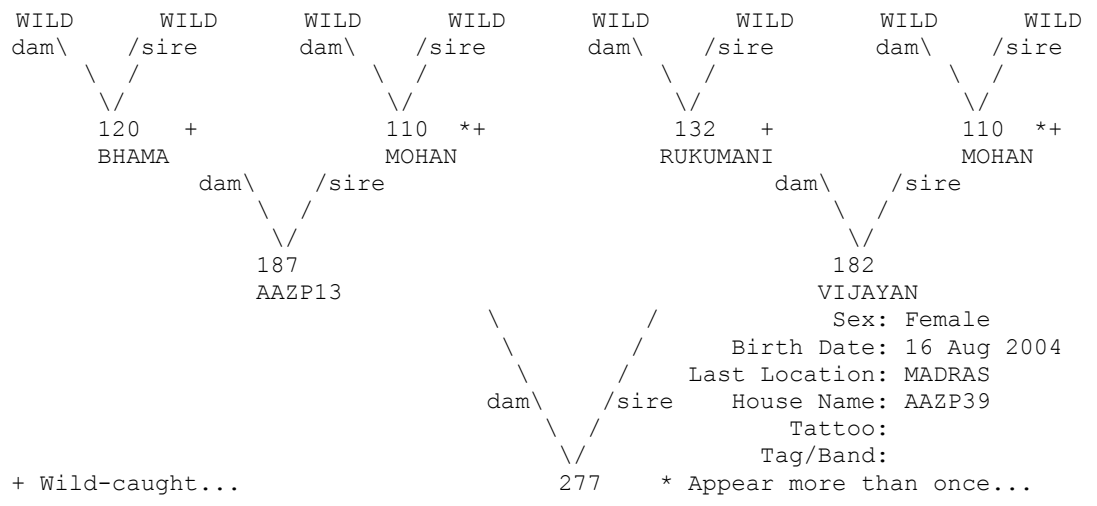
=====
 Taxon Name: MACACA SILENUS Studbook Number: 275
 =====



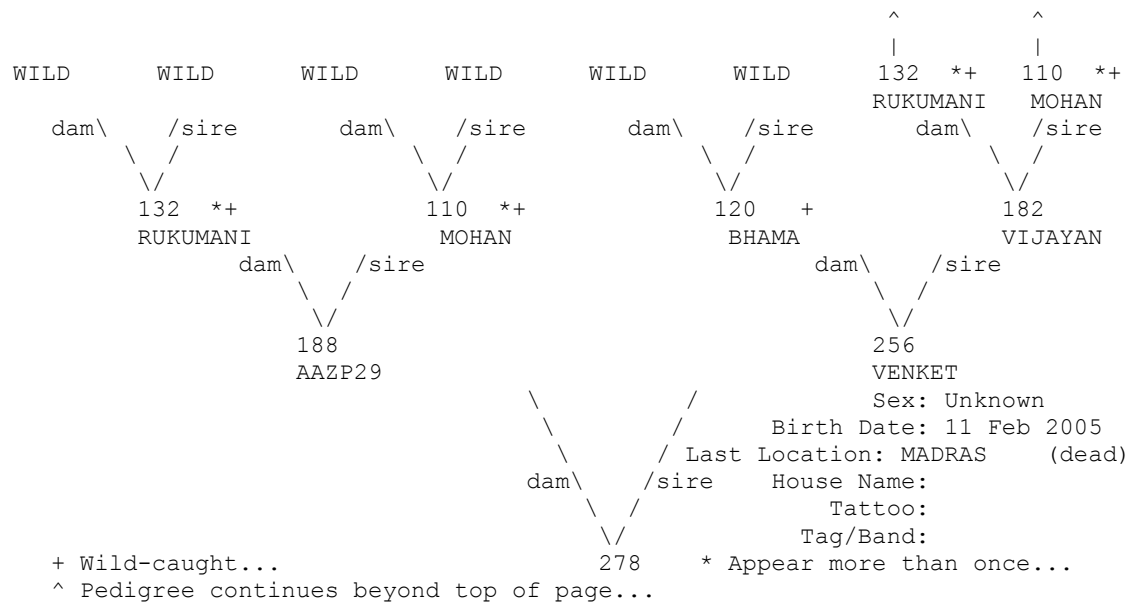
=====
 Taxon Name: MACACA SILENUS Studbook Number: 276
 =====



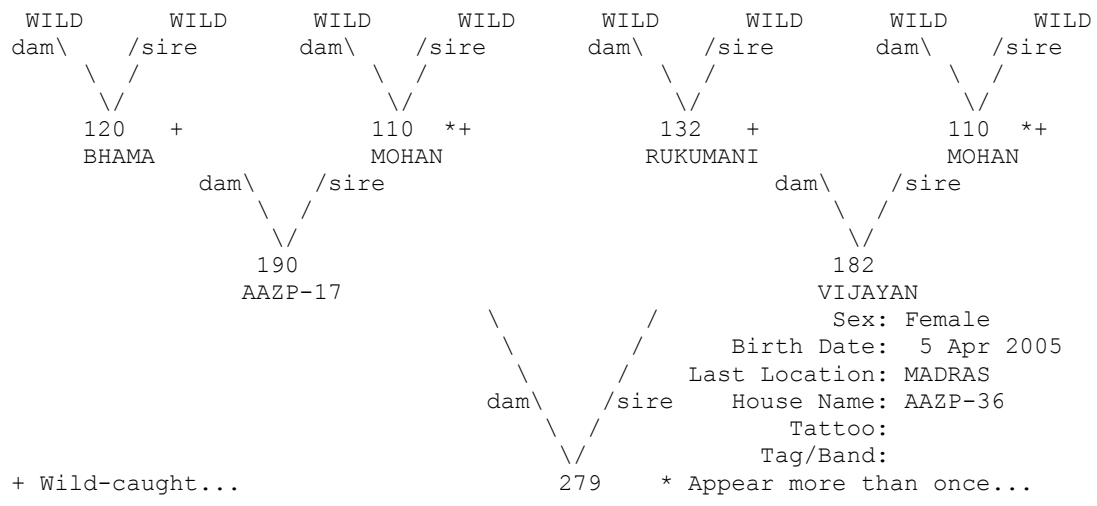
=====
 Taxon Name: MACACA SILENUS Studbook Number: 277
 =====



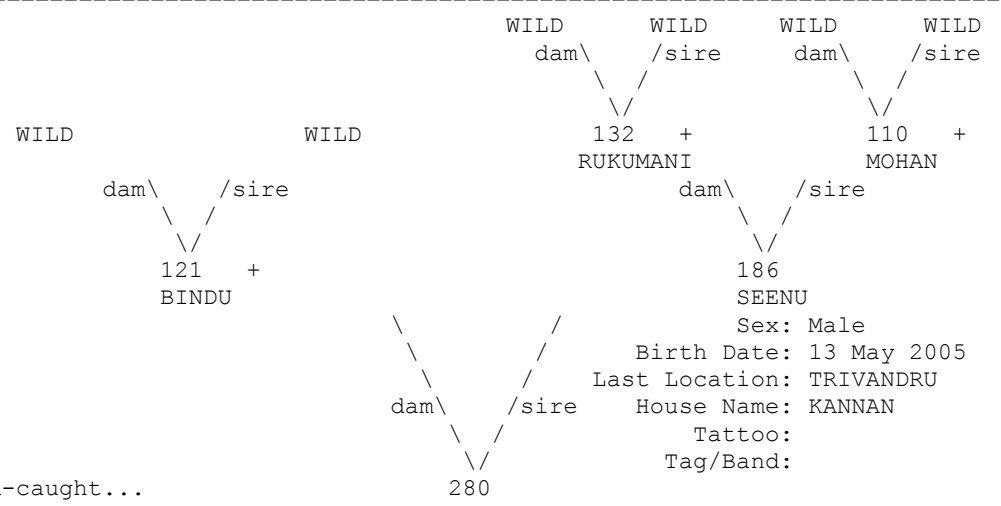
=====
 Taxon Name: MACACA SILENUS Studbook Number: 278
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 279
 =====



=====
 Taxon Name: MACACA SILENUS Studbook Number: 280
 =====



```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 281
=====
WILD                                                     WILD
                                                     Sex: Female
                                                     Birth Date: ~ 2005
                                                     Last Location: MYSORE
                                                     House Name: SWATHI
                                                     Tattoo:
                                                     Tag/Band:
    dam\  /sire
     \  /
      281

```

```

=====
Taxon Name: MACACA SILENUS                               Studbook Number: 282
=====
                                                     ^
                                                     |
WILD      WILD      WILD      WILD      WILD      WILD      132  +  110  +
                                                     RUKUMANI  MOHAN
    dam\  /sire      dam\  /sire      dam\  /sire      dam\  /sire
     \  /            \  /            \  /            \  /
      120  *+        120  *+        182
      BHAMA         BHAMA         VIJAYAN
    dam\  /sire      dam\  /sire
     \  /            \  /
      120  *+        256
      BHAMA         VENKET
    dam\  /sire      Birth Date: 16 Jul 2005
     \  /            Last Location: MADRAS (dead)
      282            House Name:
                    Tattoo:
                    Tag/Band:
+ Wild-caught...
^ Pedigree continues beyond top of page...
* Appear more than once...

```

```

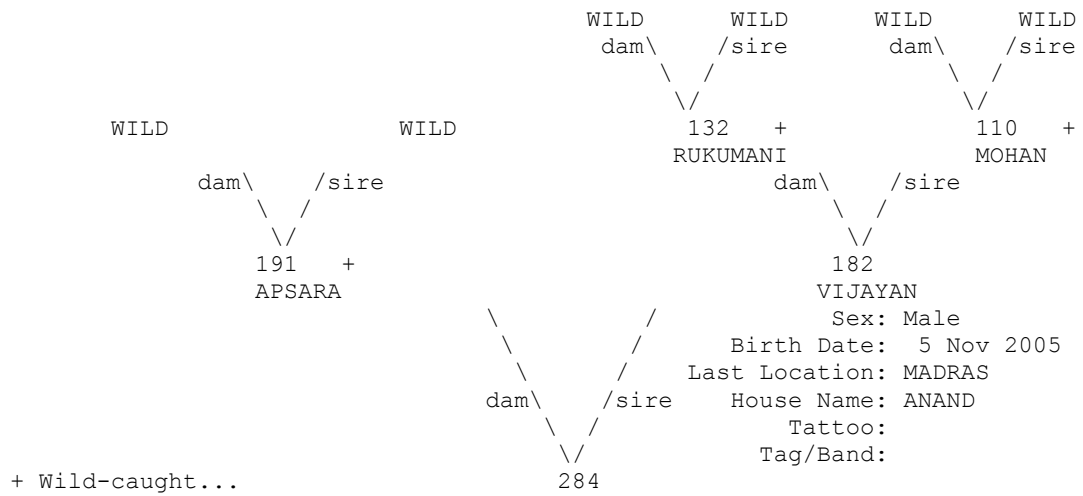
=====
Taxon Name: MACACA SILENUS                               Studbook Number: 283
=====
WILD      WILD      WILD      WILD      WILD      WILD      WILD      WILD      132  +  110  *+
                                                     RUKUMANI  MOHAN
    dam\  /sire      dam\  /sire      dam\  /sire      dam\  /sire      dam\  /sire
     \  /            \  /            \  /            \  /            \  /
      120  *+        110  *+        120  *+        182
      BHAMA         MOHAN         BHAMA         VIJAYAN
    dam\  /sire      dam\  /sire
     \  /            \  /
      259            256
      VIJI          VENKET
                    Sex: Unknown
                    Birth Date: 11 Aug 2005
                    Last Location: MADRAS (dead)
                    House Name:
                    Tattoo:
                    Tag/Band:
+ Wild-caught...
^ Pedigree continues beyond top of page...
* Appear more than once...

```

=====

Taxon Name: MACACA SILENUS Studbook Number: 284

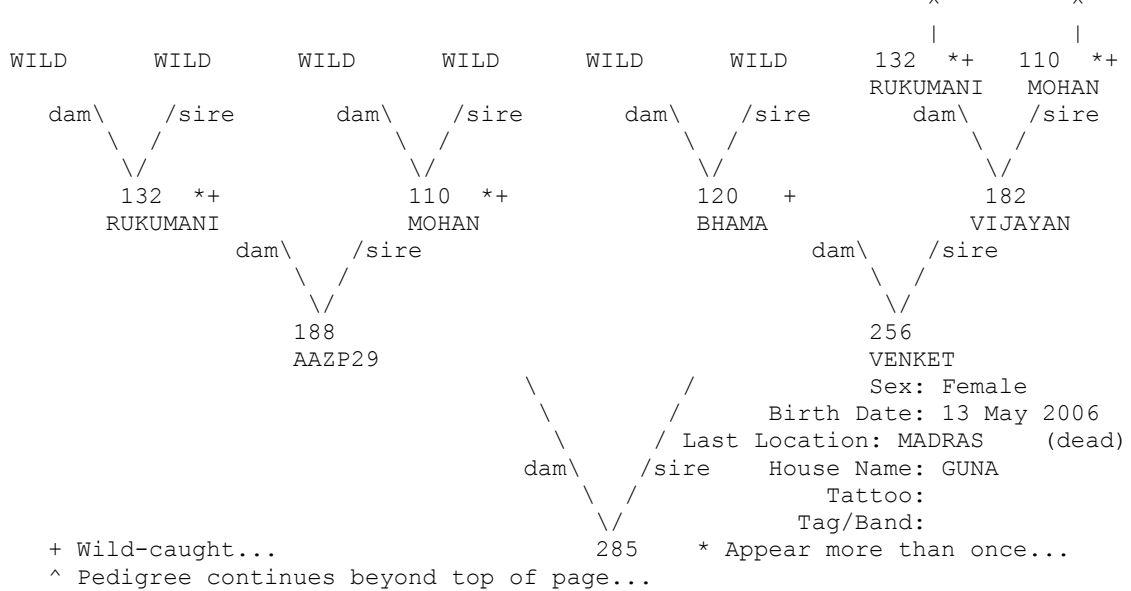
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 285

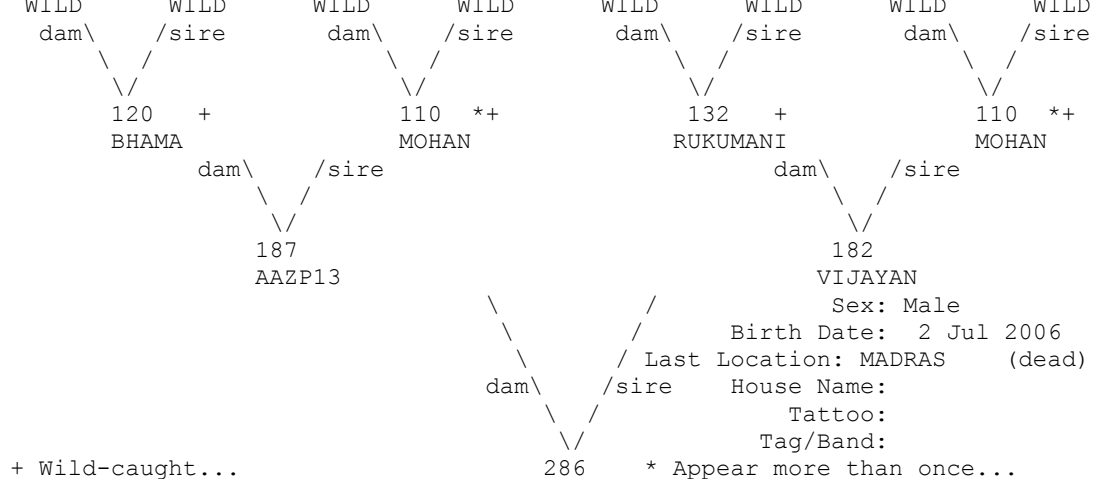
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 286

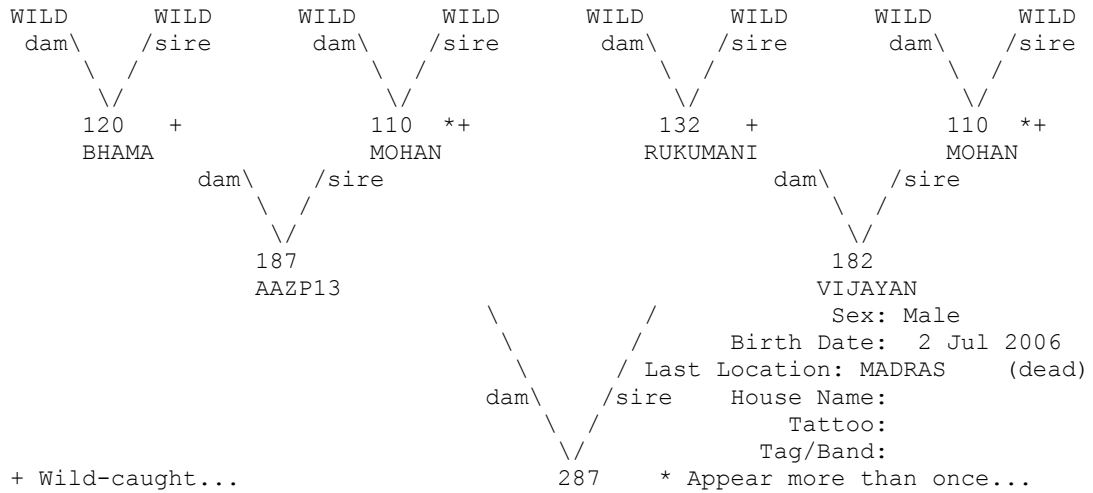
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 287

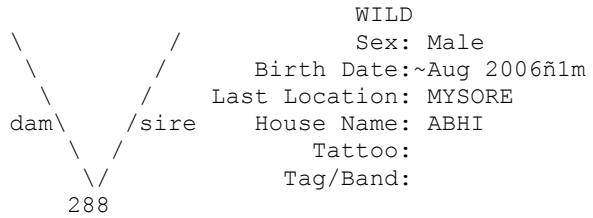
=====



=====

Taxon Name: MACACA SILENUS Studbook Number: 288

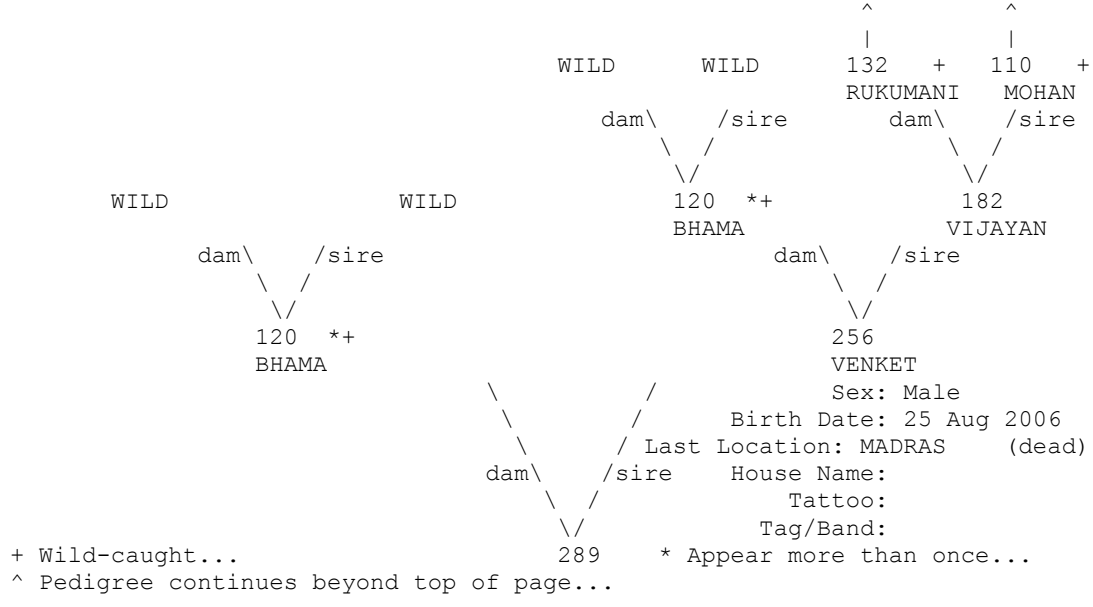
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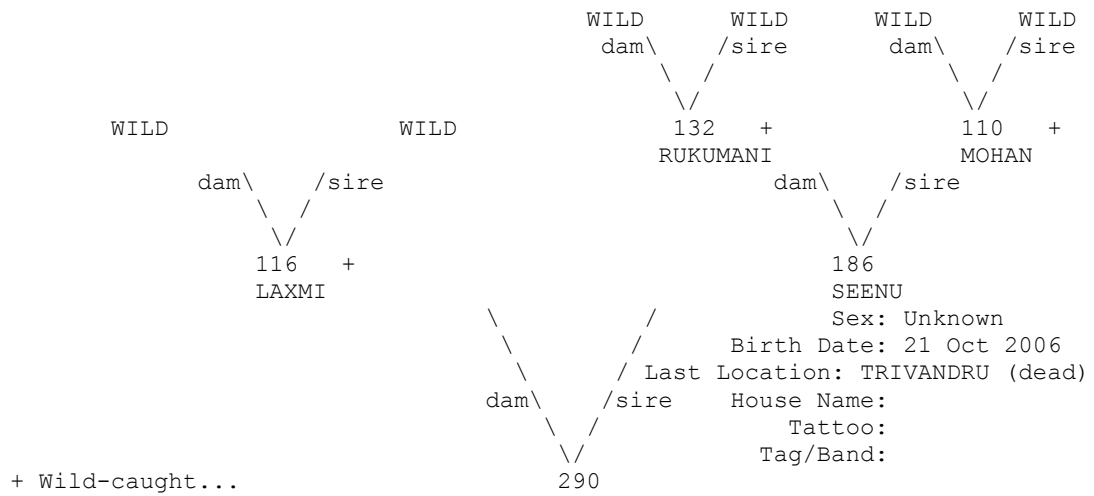
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Taxon Name: MACACA SILENUS Studbook Number: 289

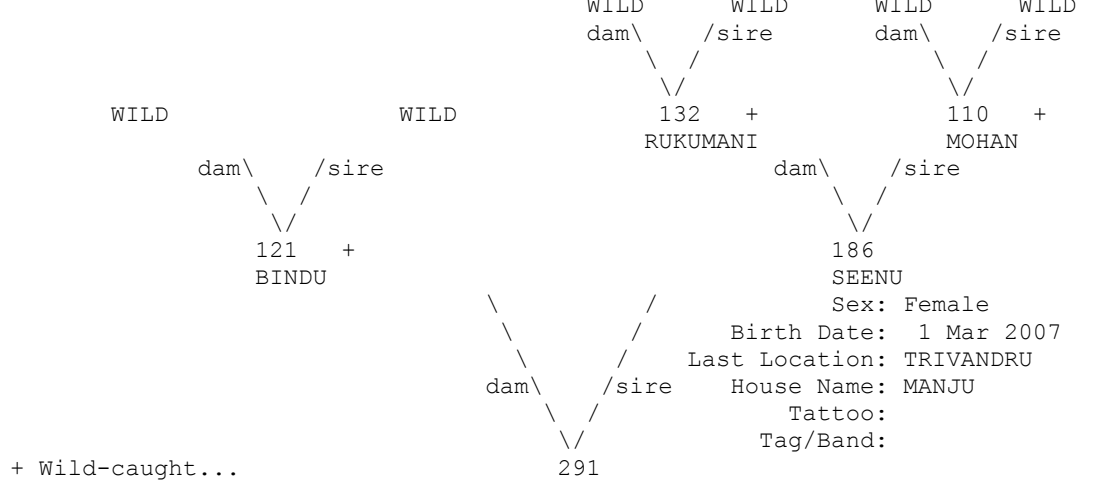
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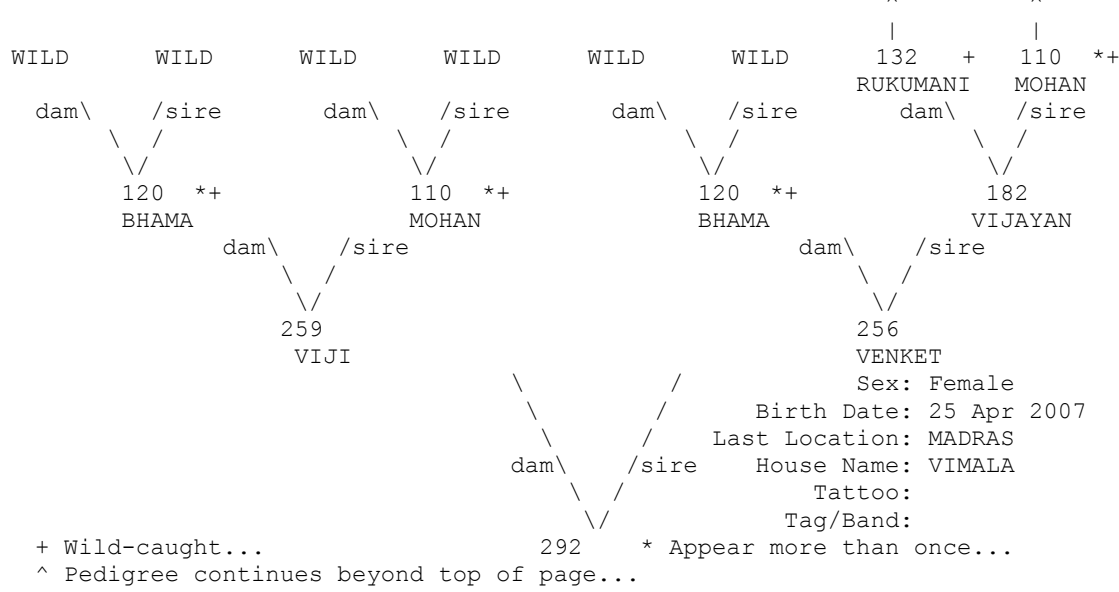
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 Taxon Name: MACACA SILENUS Studbook Number: 290
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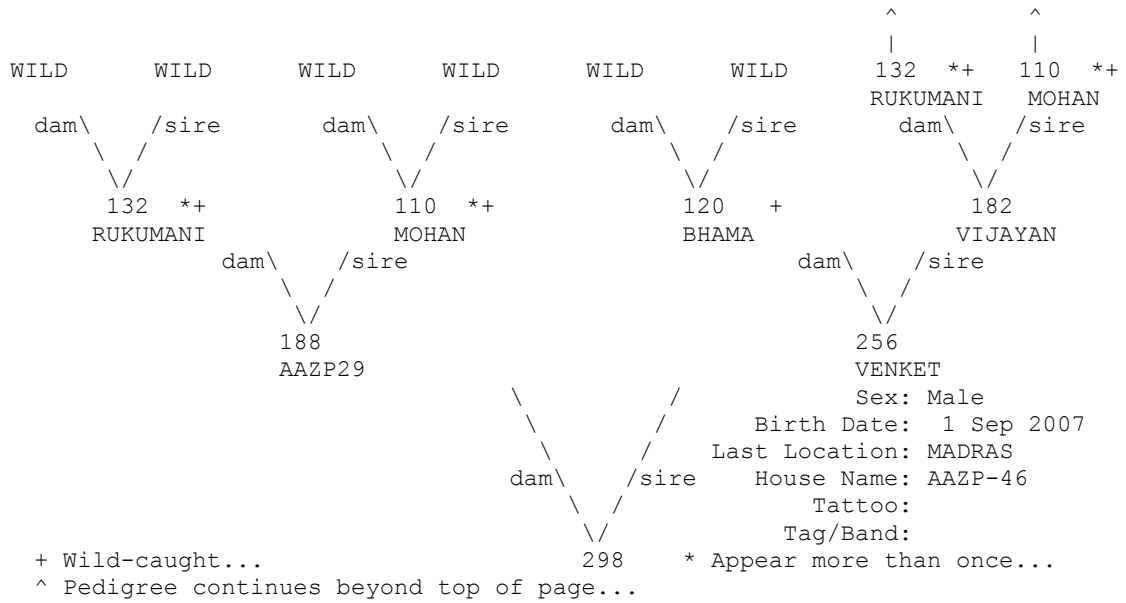
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 Taxon Name: MACACA SILENUS Studbook Number: 291
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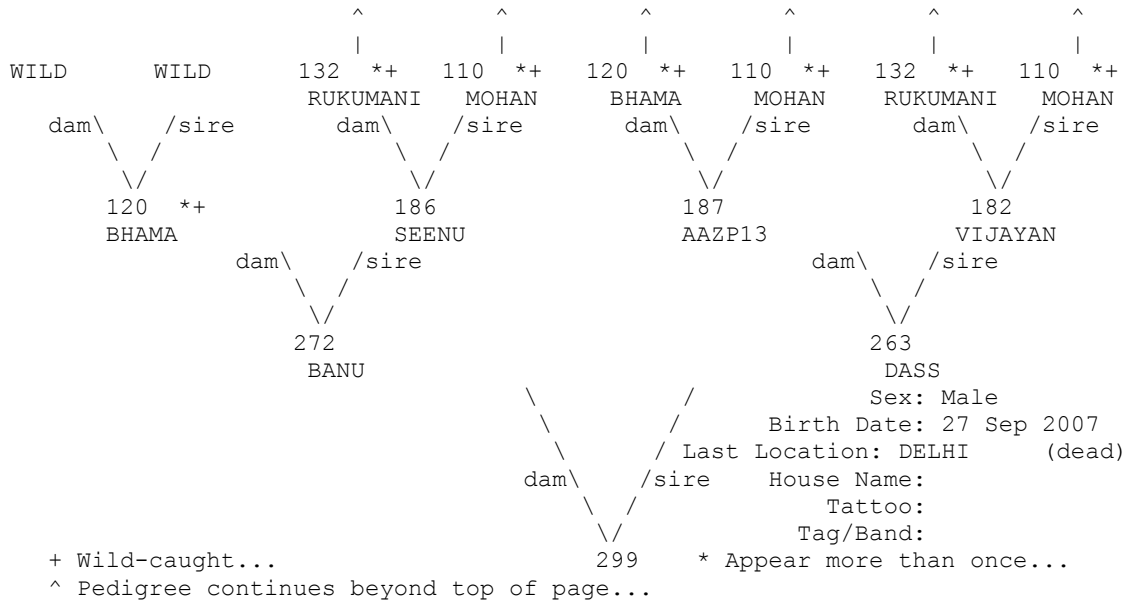
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 Taxon Name: MACACA SILENUS Studbook Number: 292
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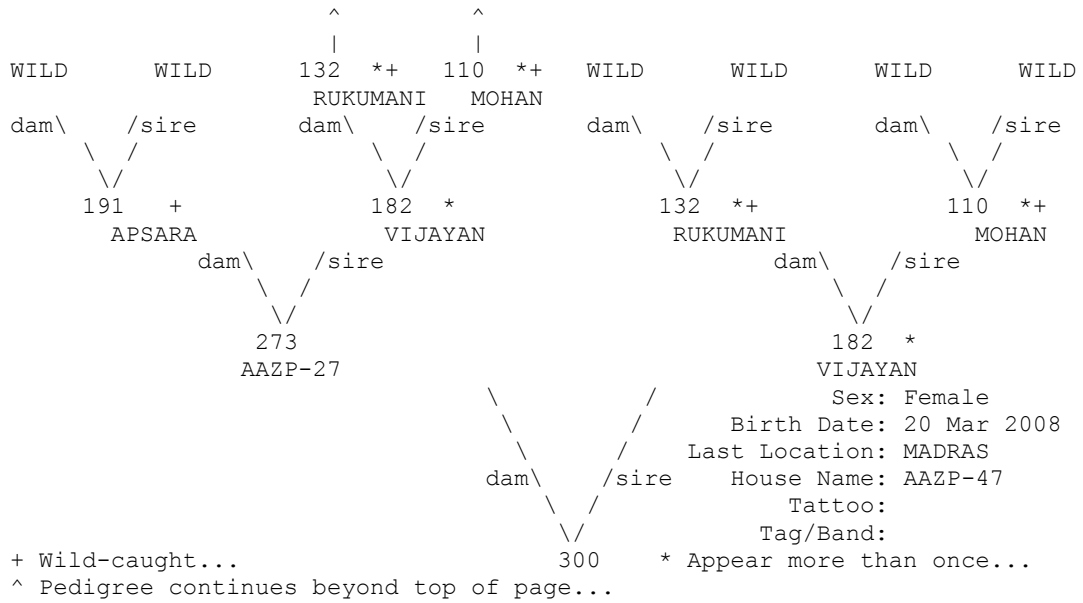
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 Taxon Name: MACACA SILENUS Studbook Number: 298
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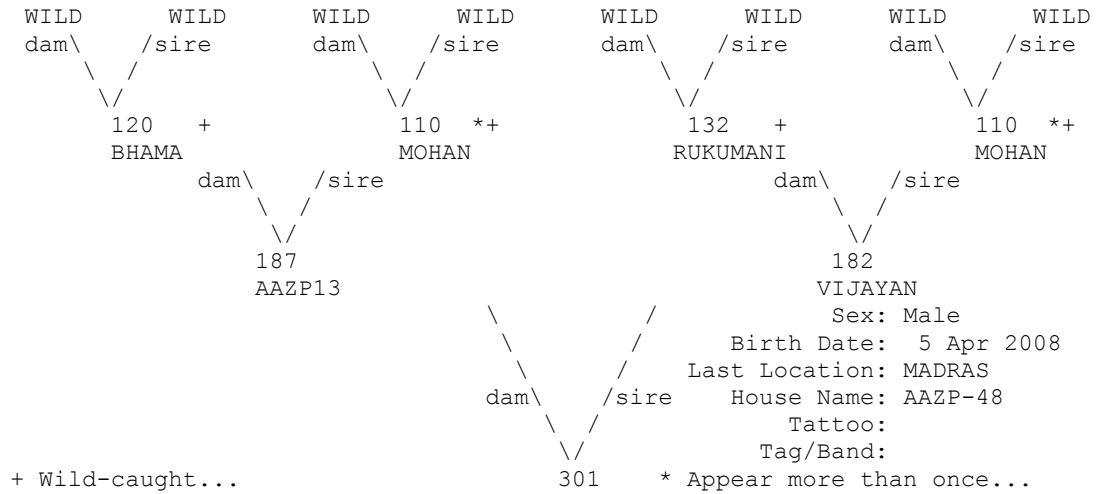
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 Taxon Name: MACACA SILENUS Studbook Number: 299
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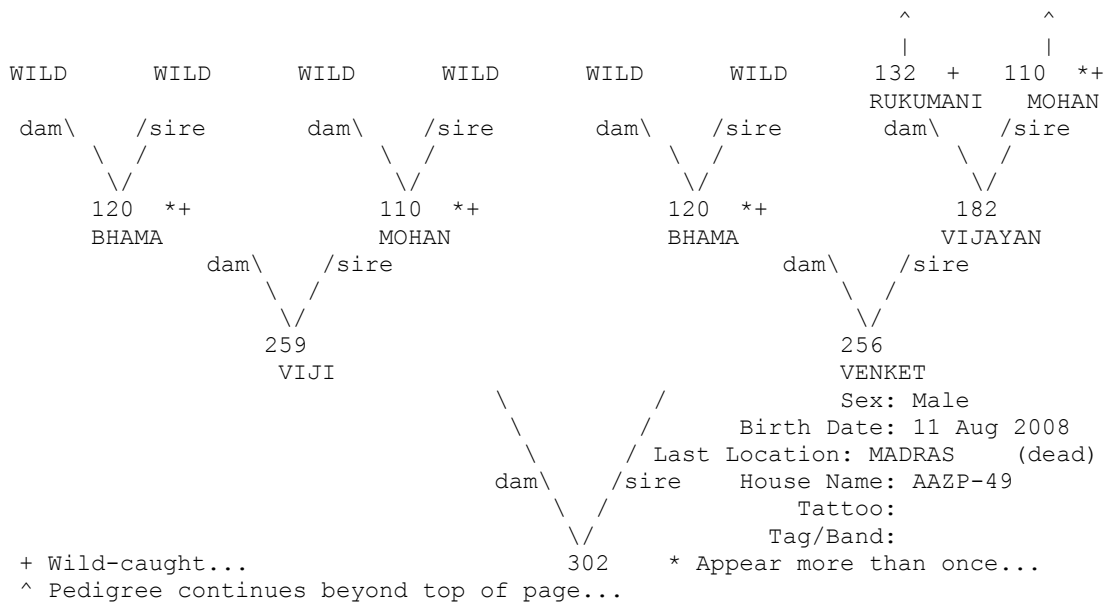
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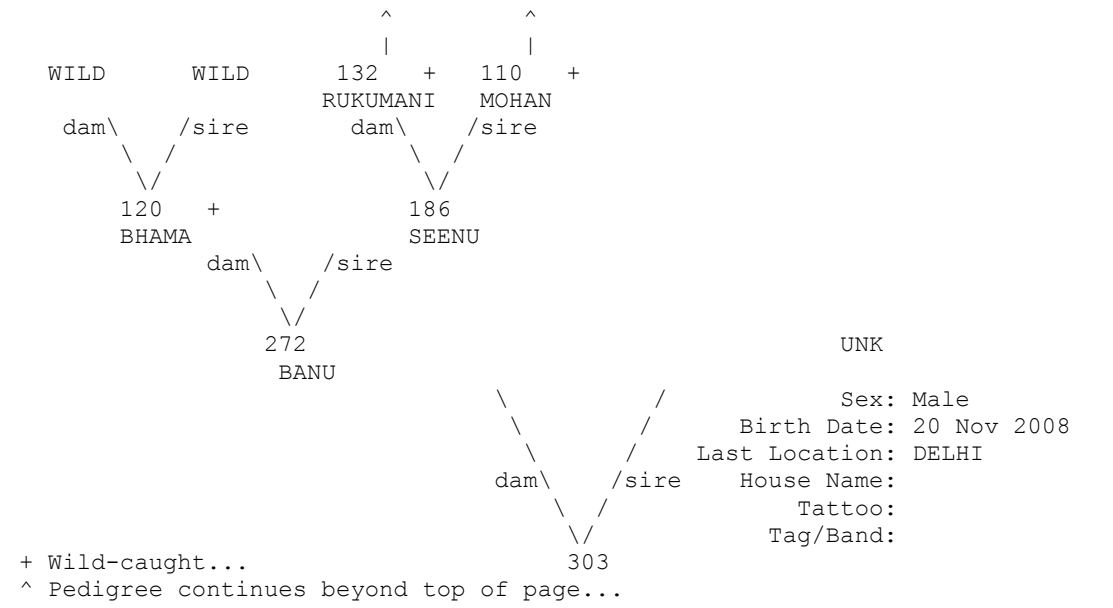
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 Taxon Name: MACACA SILENUS Studbook Number: 302
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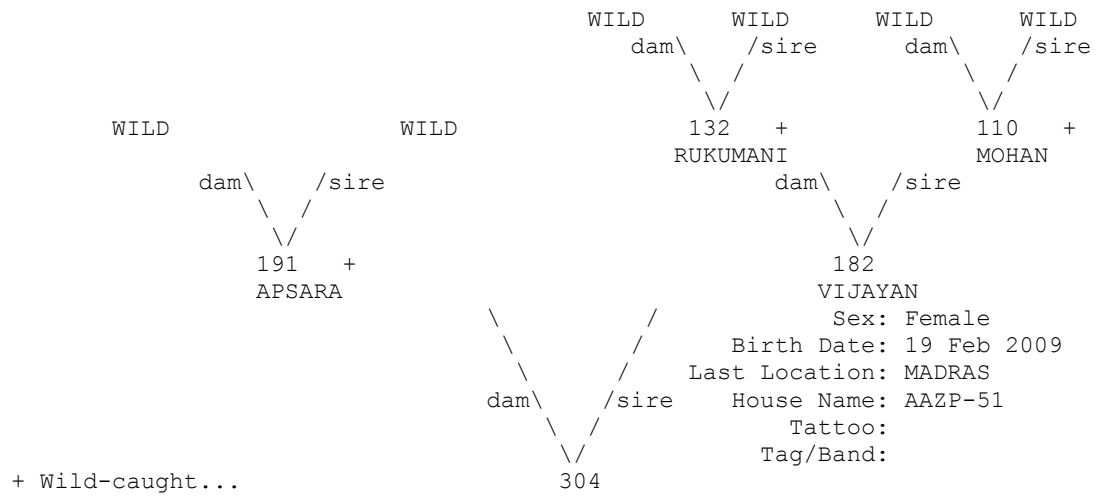
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 Taxon Name: MACACA SILENUS Studbook Number: 303
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Taxon Name: MACACA SILENUS Studbook Number: 304

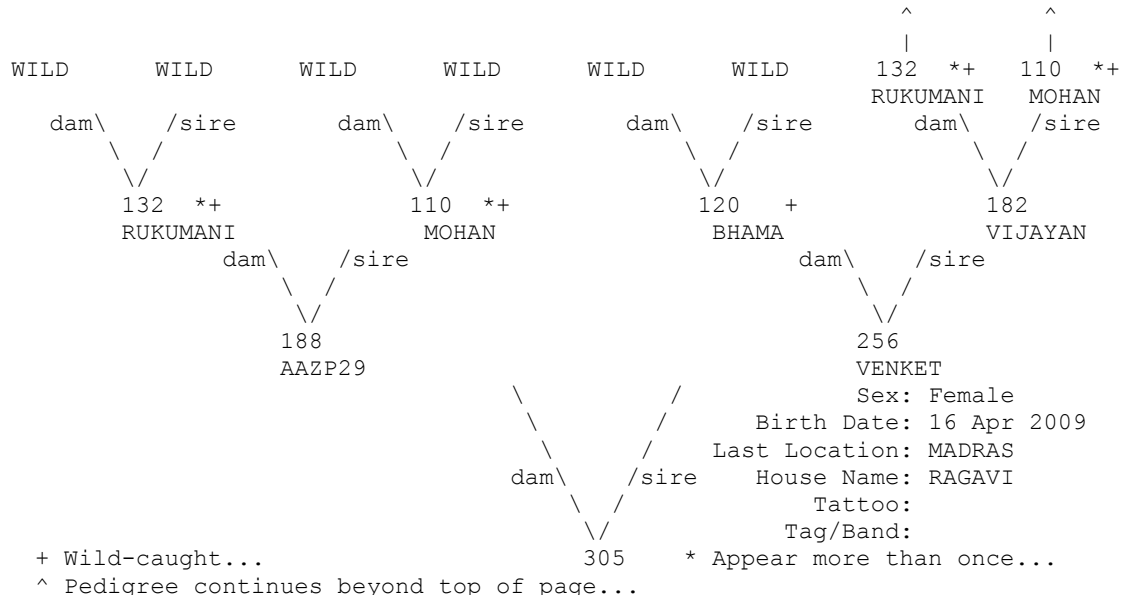
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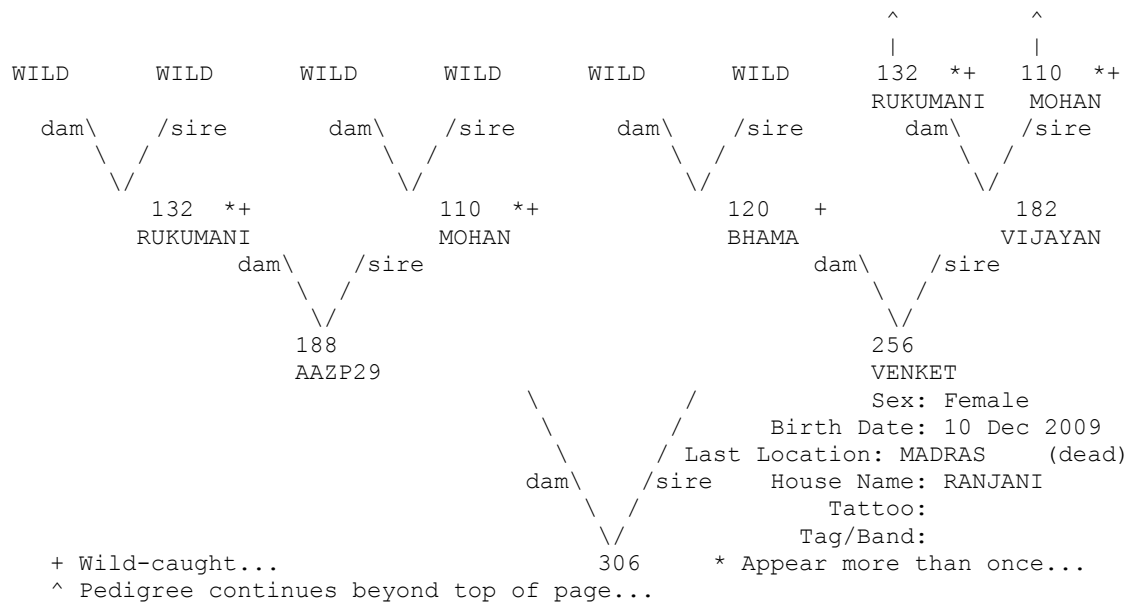
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Taxon Name: MACACA SILENUS Studbook Number: 305

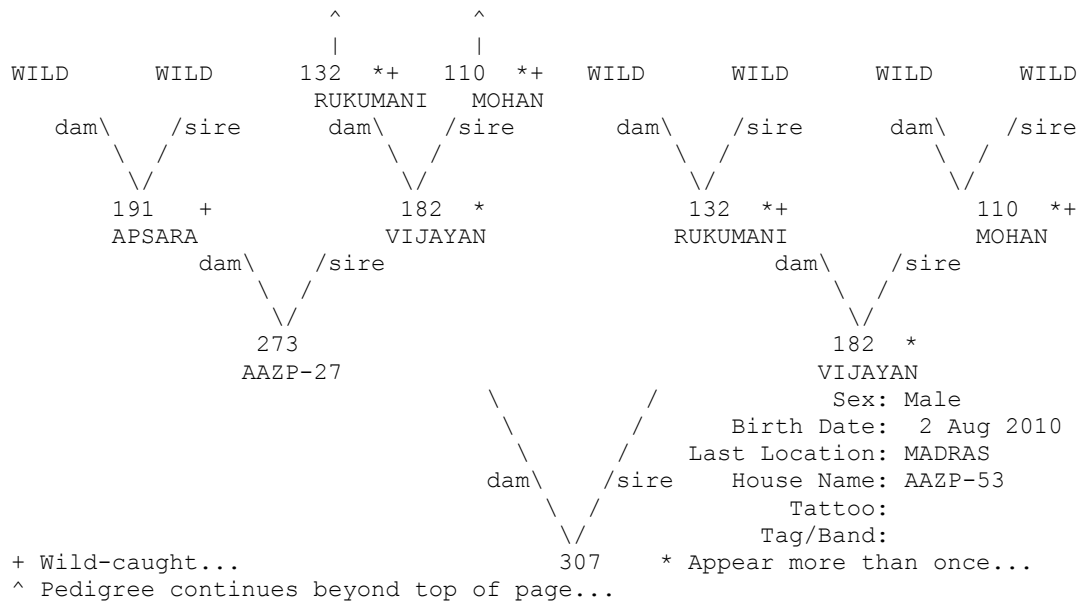
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 Taxon Name: MACACA SILENUS Studbook Number: 306
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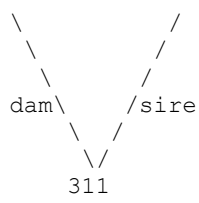


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 Taxon Name: MACACA SILENUS Studbook Number: 307
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Taxon Name: MACACA SILENUS Studbook Number: 311
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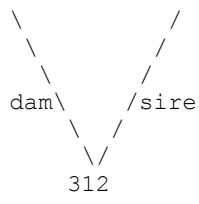
UNK



UNK
Sex: Female
Birth Date: ????
Last Location: PATNA
House Name:
Tattoo:
Tag/Band:

=====
Taxon Name: MACACA SILENUS Studbook Number: 312
=====

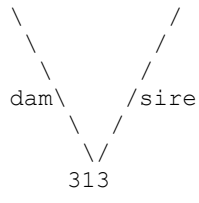
WILD



WILD
Sex: Female
Birth Date: ????
Last Location: TRIVANDRU
House Name: RADHA
Tattoo:
Tag/Band:

=====
Taxon Name: MACACA SILENUS Studbook Number: 313
=====

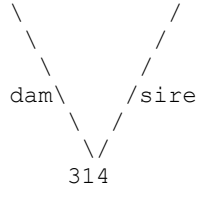
WILD



WILD
Sex: Male
Birth Date: ????
Last Location: TRIVANDRU
House Name: KUTTAN
Tattoo:
Tag/Band:

=====
Taxon Name: MACACA SILENUS Studbook Number: 314
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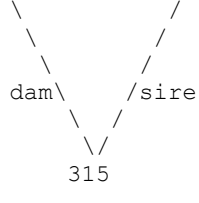
WILD



WILD
Sex: Female
Birth Date: ????
Last Location: SHILLONG
House Name:
Tattoo:
Tag/Band:

=====
Taxon Name: MACACA SILENUS Studbook Number: 315
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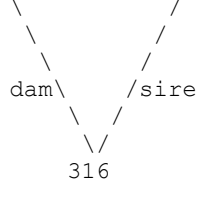
WILD



WILD
Sex: Female
Birth Date: ????
Last Location: SHILLONG
House Name:
Tattoo:
Tag/Band:

=====
Taxon Name: MACACA SILENUS Studbook Number: 316
=====

WILD

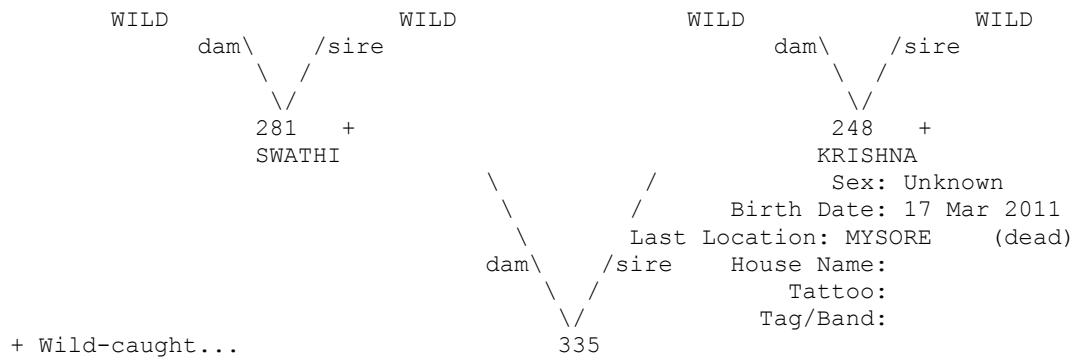


WILD
Sex: Male
Birth Date: ????
Last Location: SHILLONG
House Name:
Tattoo:
Tag/Band:

=====

Taxon Name: MACACA SILENUS Studbook Number: 335

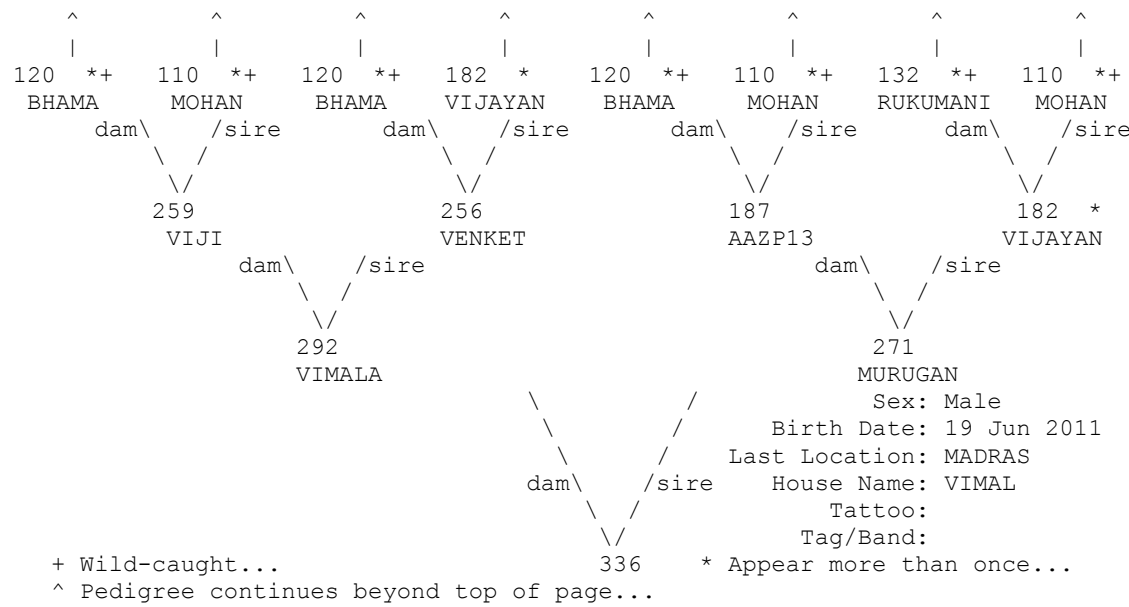
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Taxon Name: MACACA SILENUS Studbook Number: 336

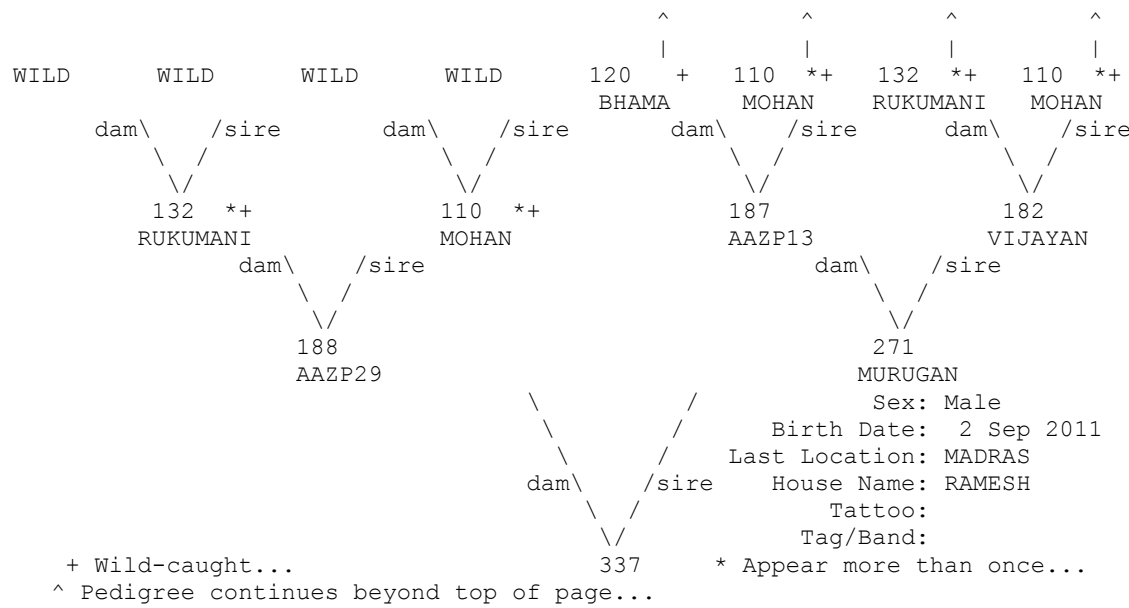
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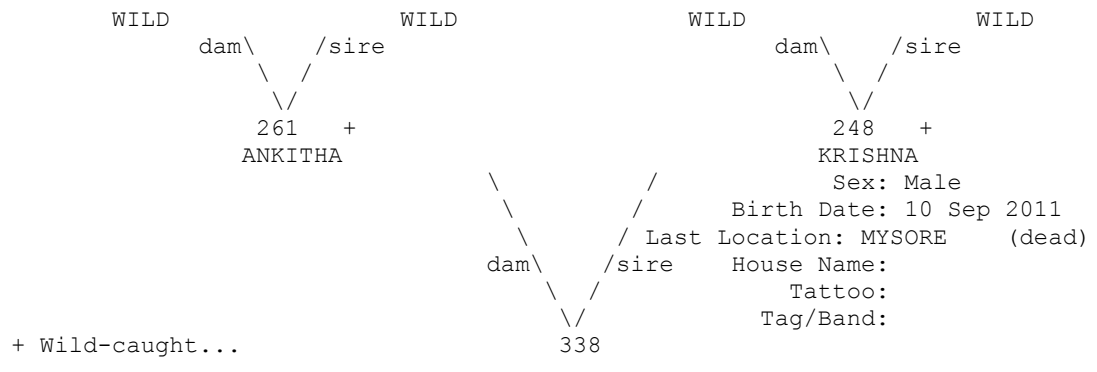
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Taxon Name: MACACA SILENUS Studbook Number: 337

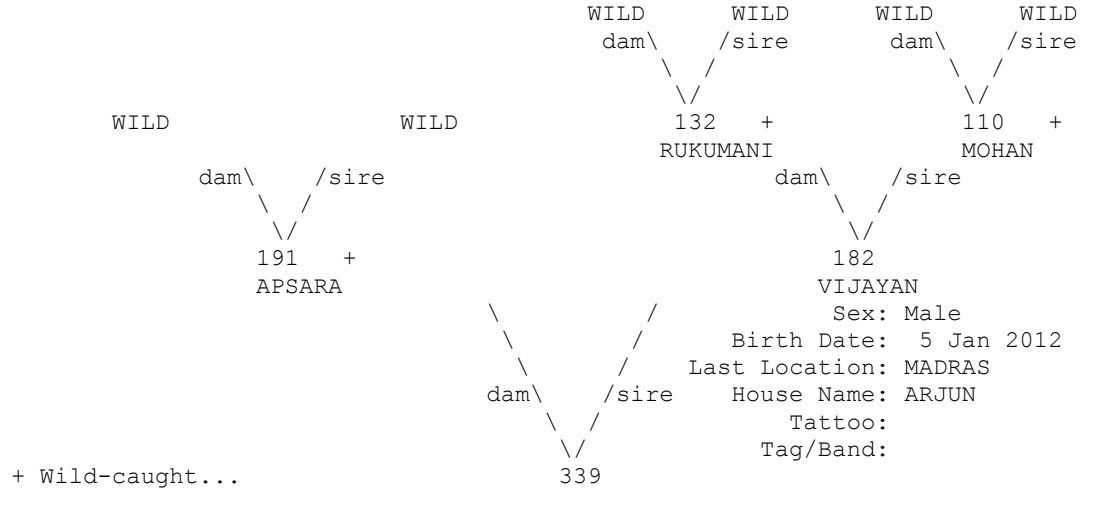
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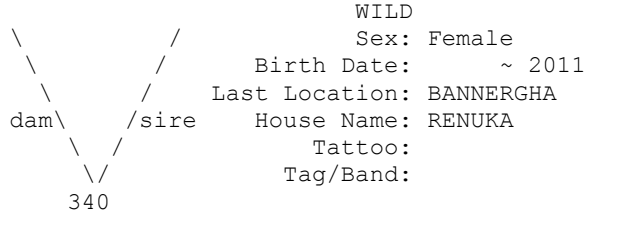
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 Taxon Name: MACACA SILENUS Studbook Number: 338
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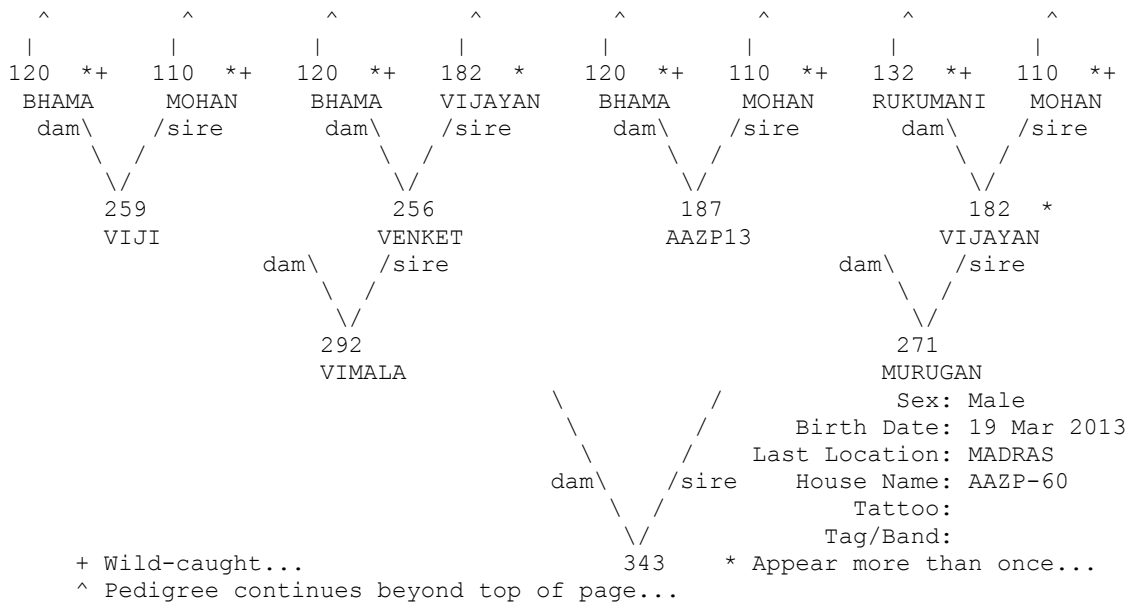
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 Taxon Name: MACACA SILENUS Studbook Number: 339
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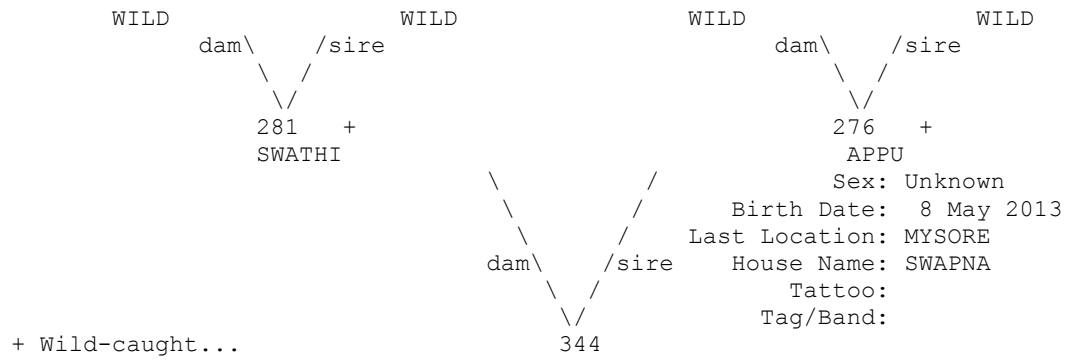
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 Taxon Name: MACACA SILENUS Studbook Number: 340
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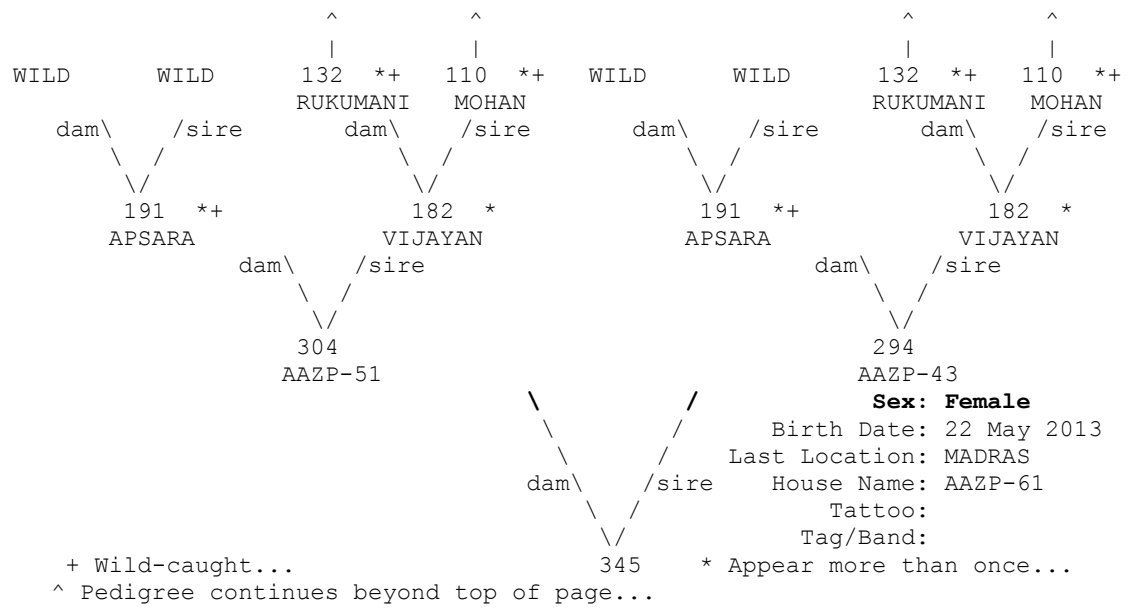
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 Taxon Name: MACACA SILENUS Studbook Number: 343
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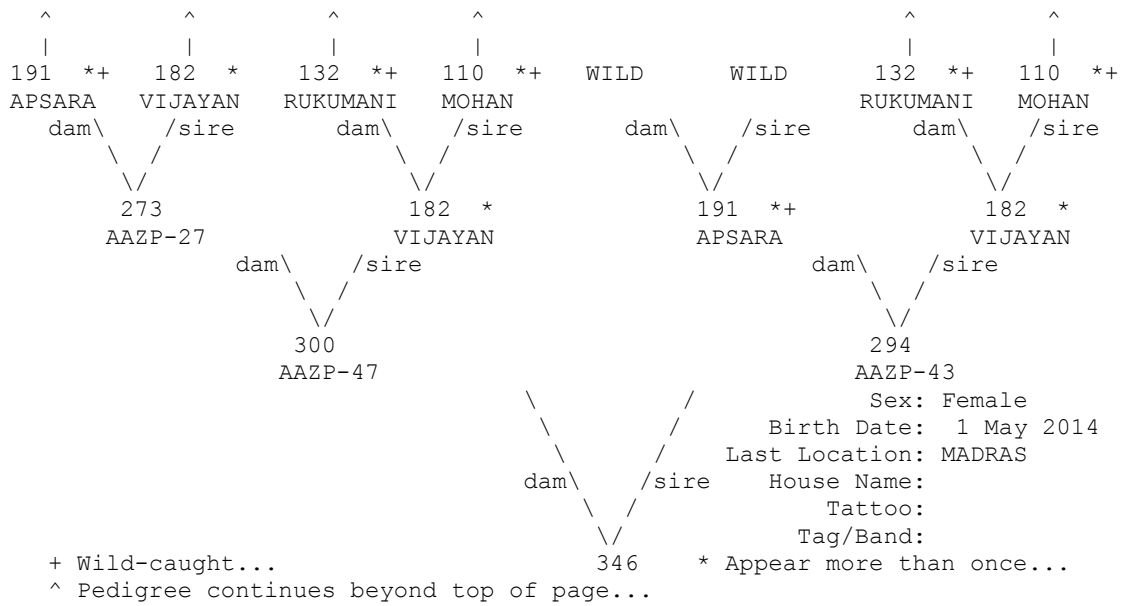
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 Taxon Name: MACACA SILENUS Studbook Number: 344
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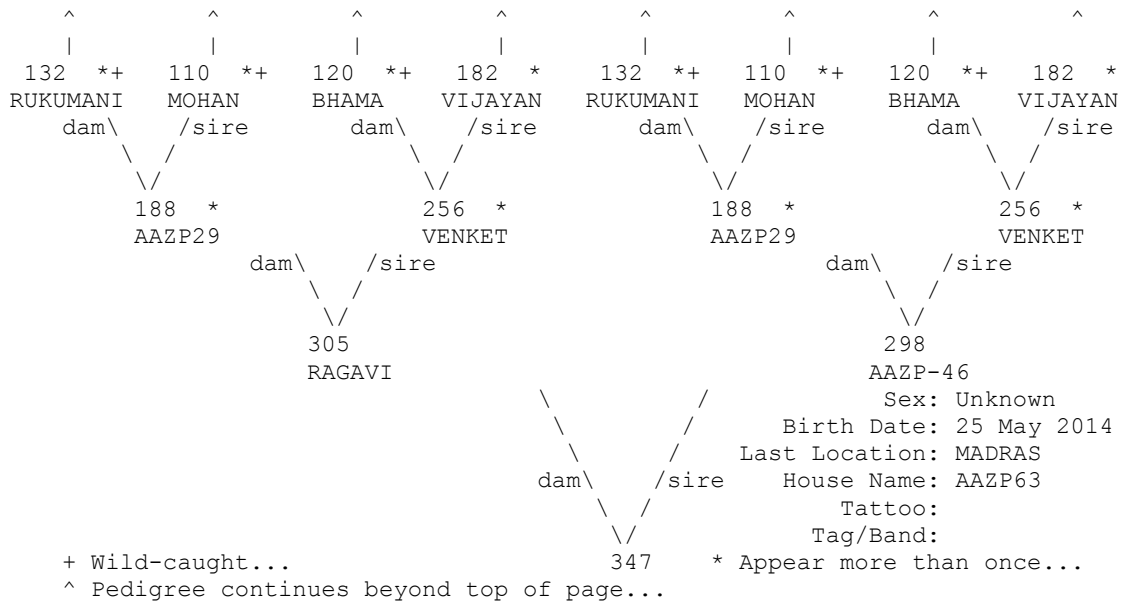
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 Taxon Name: MACACA SILENUS Studbook Number: 345
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 Taxon Name: MACACA SILENUS Studbook Number: 346
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 Taxon Name: MACACA SILENUS Studbook Number: 347
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 Taxon Name: MACACA SILENUS Studbook Number: 348
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