

Training : Primate Taxonomy and its importance in zoo management

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Taxonomy is the base for any biological collection. Zoological collections have always been prioritized on the basis of taxonomy. One of the themes of zoological exhibitions in South Asia and elsewhere is taxonomic displays. However, zoos in the region have not kept up with changes in zoological taxonomy and nomenclature.

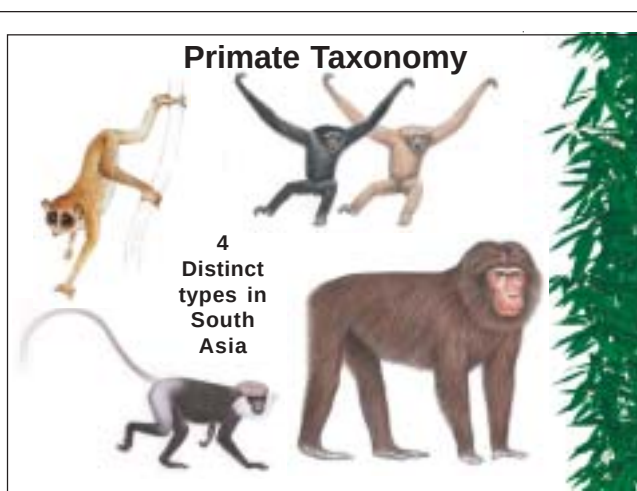
Primates are chosen as a typical example to describe the importance of taxonomy and nomenclature in zoological collections due to the following reasons: primates are one of the more commonly kept groups in zoos — almost every zoo has at least one kind of primate in its collection; primates are very popular among visitors due to their antics or appearance; many primates have very small distribution ranges in the wild; recently there have been many changes in primate taxonomy; and problem primates are wrongly translocated to areas where they do not occur.

Primates such as the Common / Hanuman Langur are thought to be very widely distributed and common. The reason for thinking so is because although there are 2 species and 9 subspecies of langurs that come under this name, zoo personnel in the subcontinent are misled to think all these species and subspecies are the same because of the common name. The scientific community has not corrected the mistake either although subspecies of many of the South Asian primate species were described as early as 1841 by Blyth. R.I. Pocock in 1929 also recognized many subspecies of primates in the region. Still, from the Indian Wildlife (Protection) Act and most other scientific works recognize the Common / Hanuman Langur as one species known as *Presbytis entellus*.

Presbytis entellus is no longer considered the correct name for the langurs in our region. *Presbytis* langurs occur only in South East Asia. The two genera of langurs that occur in South Asia are *Semnopithecus* and *Trachypithecus*. Under this there are four groups of langurs arranged systematically — langurs belonging to *entellus* group, and to *priam* group under *Semnopithecus*; and langurs belonging to *vetulus* group and *pileatus* group under the genus *Trachypithecus*. These groups have different species and subspecies of langurs with common lineage. If one were to examine the Common / Hanuman Langurs closely, there are two distinct groups belonging to two different species — *Semnopithecus entellus* (Hanuman Langur) and *Semnopithecus priam* (Grey Langur).

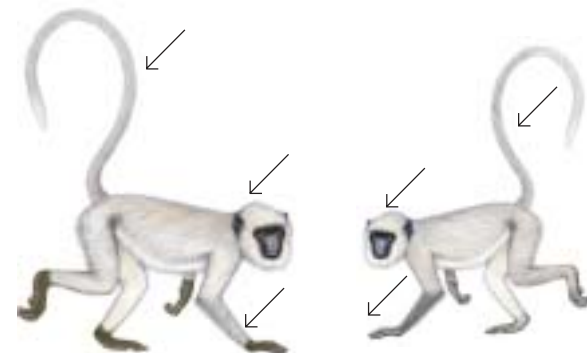
Semnopithecus entellus is further divided into many subspecies, some distinct, others not. The distinct subspecies of *Semnopithecus entellus* are the Himalayan subspecies of *Semnopithecus entellus hector*, *E.E. ajax* and *S.e. schistaceus*, which are morphologically very different looking compared to the central, northern and eastern Indian *Semnopithecus entellus achates*, *S.e. anchises* and *S.e. entellus*. Similarly, the northern Western ghats subspecies of *S.e. hypoleucos* is very different from its neighbouring *S.e. achates* and *S.e. anchises*.

Some of the differences between these subspecies include



Primate Game

Sanjay started his training with a game to demonstrate to participants that perhaps they were not as observant as they thought. He gave out 2 colour pictures of different primate taxa to each participant. He asked them to study the pictures, particularly the details. Then he showed slides of scientific drawings of primates which looked like those which were in the pictures. He asked the group at large how many of them had the picture of each primate and counted hands. As the game went on he showed what looked like the same taxa again ... and sometimes again. He asked participants how many of them were holding the illustrate of particular taxa and recorded the number. In the first go-round it seemed to participants that this game was easy. In a short time, when the numbers didn't match, it was clear that many participants were wrong. In the end — all of them in fact. Then Sanjay showed photos again with arrows pointing to the subtle features which made the taxon different from another which looked very much like it. The game was an excellent beginning to the training, setting the stage for understanding the importance of taxonomy and of getting their primates sorted out ... separating them if there were doubts and trying to match them up for breeding. Some of these taxa are threatened ... Critically Endangered, Endangered, and Vulnerable. Zoos have a responsibility to get it right.



the coat colour (golden in *S.e. anchises*, yellowish in *S.e. entellus*, blackish in *S.e. hypoleucos*; whitish in *S.e. hector*, grayish in *S.e. achates*; brownish-grey in *S.e. ajax* and *S.e. schistaceus*); in tail carriage ('C' shaped tail in *S.e. ajax*, *S.e. hector*, *S.e. schistaceus*, *S.e. entellus*, *S.e. anchises*; and 'S' shaped tail in *S.e. achates* and *S.e. hypoleucos*); in the tapering of the head (*S.e. schistaceus* is more tapered than others); in the colour of the hands and feet (grayishblack or black in *S.e. achates*, *S.e. entellus*, and also black forearm in *S.e. hypoleucos*); and other morphological characters and behaviour that make these subspecies different from one another.

The southern Indian Grey Langur, which was considered part of the Indian Common / Hanuman Langur group, actually belongs to a different species compared to the *Semnopithecus entellus*. The Grey Langurs are called *Semnopithecus priam* with two subspecies – *Semnopithecus priam priam* and *S.p. thersites*. These langurs differ from *S.e. anchises*, *S.e. entellus*, *S.e. achates* and *S.e. hypoleucos* in having a distinct crest or pointed head. Also, these animals carry their tail as a 'S' rather than the more prominent 'C' of the Hanuman Langurs. *S.p. thersites* is also known to occur in Sri Lanka although that needs further taxonomic studies since the Indian and Sri Lankan populations have not interbred for a very long time.

It is therefore important to understand what kind or type of langurs South Asian zoos have and keep them accordingly in holdings. Until now, all zoos have kept all "Common"

langurs in the same enclosure even though the zoo staff know and can see the differences between animals from different areas. In most cases since the animals are rescued from street performers or nomadic people, it becomes difficult to know where these primates are actually caught from. In such cases, it is better for zoological gardens to err on the side of caution and keep unknown origin animals in different enclosures, or ensure that breeding does not result in an offspring (by ensuring appropriate contraception measures) if they are kept together. In one very well known and famous zoo, it was learnt that there are two species of langurs in a mixed exhibit, which have bred and produced two hybrid offspring. These animals are of no use from a conservation perspective, as the breeding is similar to that of breeding a tiger with a lion. Similarly, as subspecies hybrids are not encouraged in lions or tigers, it is important to ensure that langur subspecies are not mixed and bred in zoo situation.

This situation is similar with respect to macaques in different parts of the subcontinent. There have been several instances of different macaque species and subspecies kept together due to confusion in identification, or lack of knowledge.

Most importantly, primates causing problems to humans in one area should not be removed and released in another area where they could not only cause havoc to other humans, but also cause genetic havoc due to populations of unknown taxa (species and subspecies) being mixed.

