



MORPHOLOGICAL DESCRIPTION OF INDIAN PANGOLIN (*Manis crassicaudata*) IN SRI LANKA, WITH SPECIAL REFERENCE TO SCALE CHARACTERISTICS

Randimal A.H¹, Perera P.K.P^{1,2*}, Dayawansa N³

¹Department of Forestry and Environmental Science, University of Sri Jayewardenepura, Sri Lanka

²IUCN SSC Pangolin Specialist Group, C/o Zoological Society of London, United Kingdom

³Department of Zoology and Environment Sciences, University of Colombo, Sri Lanka

*Email: priyan@sjp.ac.lk

The Indian pangolin (*Manis crassicaudata*), which has a wide distribution in the Indian subcontinent, is the only pangolin species recorded in Sri Lanka. The species has become threatened across its range due to hunting, poaching, and trafficking, largely driven by the demand for its keratinous scales and meat. Despite being identified as “threatened” globally and nationally, limited studies have been done in Sri Lanka on Indian pangolin. An accurate morphological description based on sound data is unavailable in the literature for *M. crassicaudata* occurring in Sri Lanka. This study describes the morphological features of *M. crassicaudata* with special reference to the shape, frequency and orientation of body scales based on observations made on 21 live and dead specimens. Additionally, the shape of the claws of forelimbs were compared using the Curvature Linear Index (CLI). The data were recorded and analysed under three age classes; juvenile, sub-adult and adult, as well as by their sex in order to reveal morphological characteristics that could be used to describe sexual dimorphism of the species. The total number of scales in the juvenile, sub-adult and adult stages were 508 ± 3.35 , 502 ± 12.4 , and 512 ± 6.8 respectively. The most number of scales and the largest scales in terms of size was observed in the trunk region. Thirteen longitudinal rows of scales are present covering dorsal and ventral sides of the body with a virtual median line of scales oriented along the anteroposterior axis of the body. The mean number of scales present in the median row which is the longest, is 15.45 ± 0.153 . The upper side of the tail has 5 longitudinal rows of scales. Bold rhombic, elongated kite, and folded shaped scales were observed in specimens of all age classes and sexes. Bold rhombic shaped scales were the dominant scale type observed on the body. The angle of orientation of the folded-shaped scales present in the tail of males were significantly different from that of females ($t = -5.47$, $p = 0.001$). Grooves were absent on the scales of the adult male pangolins, while they were visible in all 3 age classes of female pangolins. The straight carapace and curved length of the claw along its external perimeter were used to compute the CLI. The middle claw had the greatest CLI in comparison to other claws in all specimens observed. The findings of the study has major implications in establishing conversion parameters for estimating the stock size of *M. crassicaudata* in seizures of scales in illegal trading.

Keywords: Indian pangolin, morphometry, scales, claw, Illegal wildlife trade, dimorphism