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Journal of Threatened Taxa

10.11609/jott.2023.15.8.23631-23826

www.threatenedtaxa.org

26 August 2023 (Online & Print)

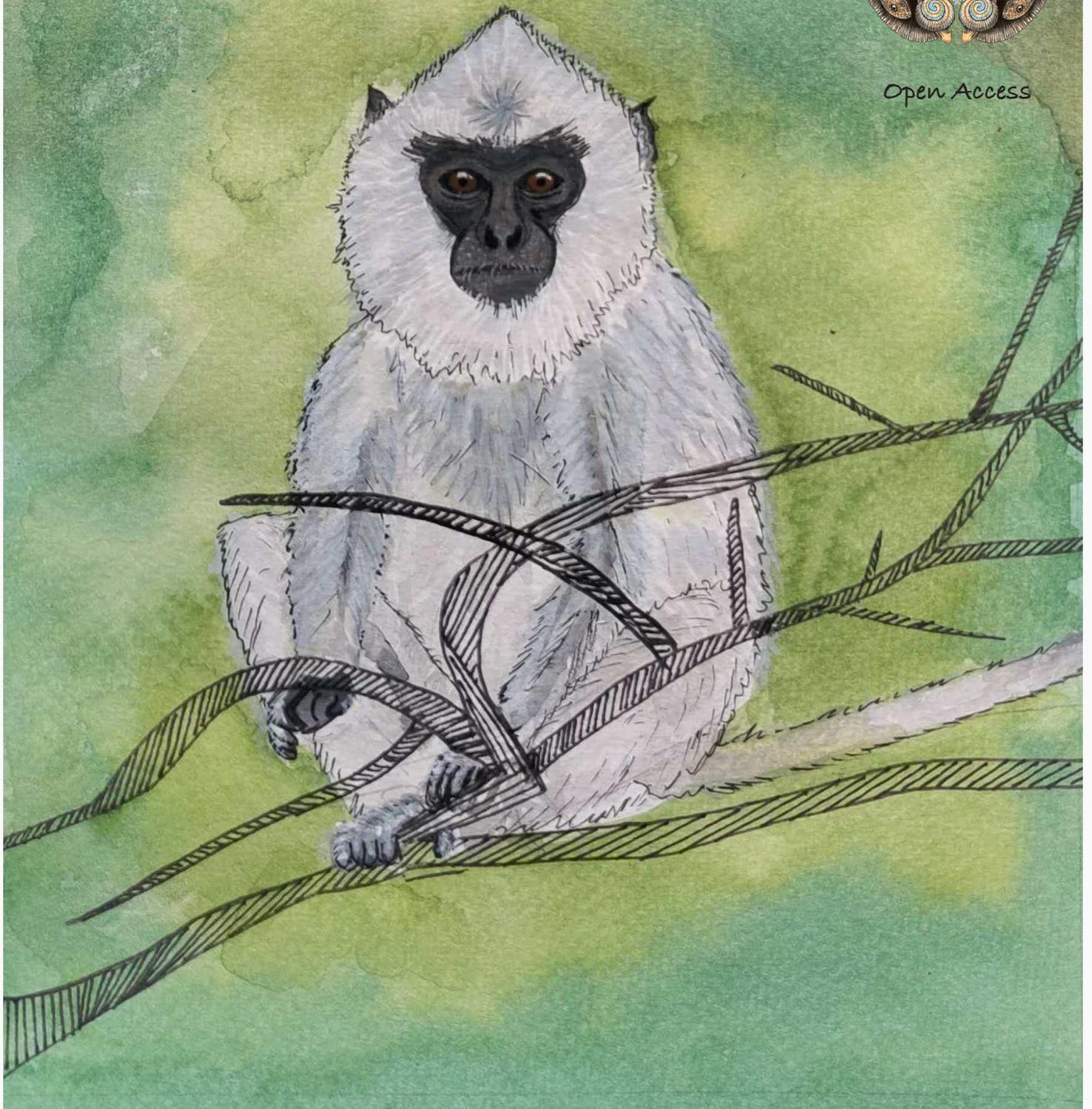
15(8): 23631-23826

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)



Open Access





ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher
Wildlife Information Liaison Development Society
www.wild.zooreach.org

Host
Zoo Outreach Organization
www.zooreach.org

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Cover: Coromandal Sacred Langur *Semnopithecus priam* - made with acrylic paint. © P. Kritika.



Auto-fellatio behaviour observed in the Indian Palm Squirrel *Funambulus palmarum* (Linnaeus, 1766)

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Masturbation is an auto-sexual behaviour, a widespread phylogenetic trait in many taxa, including non-mammalian species (Roth et al. 2022). Non-reproductive sexual behaviours are observed in birds, Bonobos, sheep, goats, cats, Cape Squirrels, Spotted Hyenas, and many other animals (Bagemihl 1999; Schwartz 1999; Waterman 2010; Balcombe 2011). Waterman (2010) reported that males under intense sperm competition might manipulate sperm quantity and quality through masturbation, which could waste sperm and decrease fertility. Masturbation is found to be a reason for lacking sexual opportunity or fulfilling sexual desire. Masturbation, however, was initially thought to be non-adaptive, but later researchers pointed out to be adaptive (Thomsen et al. 2003). Sperm flushing through masturbation is adaptive to increase the chance of having fertile sperm to have reproductive success (Baker & Bellis 1993; Bellis 1995). Masturbation is a self-directed action; the vertebrates use their hands directly and sometimes mouth by the suggestive term auto-fellatio (Waterman 2010). Extending to body parts, monkeys have been known to masturbate using stones

as a part of tool use based on physiological responses (Cenni et al. 2022).

The Indian Palm Squirrel *Funambulus palmarum* is a rodent under the family Sciuridae and is widespread in the Indian subcontinent and Sri Lanka (Nowak 1999). They are known to breed throughout the year (Prasad 1951). Rodents perhaps exhibit masturbation behaviour; one such incident has been reported in the African Ground Squirrel *Xerus inauris* (Waterman 2010). This study presents an observation of auto-fellatio behaviour in an adult male Indian Palm Squirrel.

On 14 December 2018, an Indian Palm Squirrel was found on a Neem Tree *Azadirachta indica* during the evening hours in an agriculture field at Bhavanisagar, Tamil Nadu, India (11.4783°N, 77.1273°E). The squirrel's activity was observed to express an auto-fellatio behaviour (Image 1). The observation began with the male squirrel stimulating its genital organ using both hands for approximately six seconds.

The activity continued till the penis got appropriately erected. The squirrel held its penis by its forelimbs and was sucked by its mouth forward and back

Editor: P.O. Nameer, Kerala Agricultural University, Thrissur, India.

Date of publication: 26 August 2023 (online & print)

Citation: Abinesh, A., C.S. Vishnu & C. Ramesh (2023). Auto-fellatio behaviour observed in the Indian Palm Squirrel *Funambulus palmarum* (Linnaeus, 1766). *Journal of Threatened Taxa* 15(8): 23817–23818. <https://doi.org/10.11609/jott.8370.15.8.23817-23818>

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Funding: F.No: EMR/2016/003963, Science and Engineering Research Board, Department of Science and Technology, Government of India.

Competing interests: The authors declare no competing interests.

Acknowledgements: This note is an outcome of a research grant by DST-SERB- (EMR/2016/003963). We acknowledge Mr. Vedagiri Thirumurugan for his moral support during the research. We thank the director, registrar, and dean of the Wildlife Institute of India for the inspiration.





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Image 1a. *Funambulus palmarum* engaging in auto-fellatio activity.

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Image 1b. *Funambulus palmarum* engaging in auto-fellatio activity.

continuously. Subsequently, the sperm ejaculated at the end of the 26th second, and thereby we concluded it as masturbation. The action was performed with its whole mouth for 26 seconds, confirming the activity as an auto-fellatio behaviour and not a penis-cleansing behaviour. The male squirrel was found alone without any other individuals near for about a 10-m radius from the animal.

The auto-fellatio behaviour in animals has been attributed to various hypotheses, including relaxation and aggression reduction (Thomsen & Sommer 2015), serving as a sexual outlet, potential enhancement of sperm quality, energy reallocation, sexual display, rivalry demonstration, and even reduction of the risk of sexually transmitted infections (Waterman 2010). Considering that Indian Palm Squirrels are known to breed throughout the year, any of these hypotheses could potentially explain the occurrence of auto-fellatio behaviour in this species.

This observation calls for further research to comprehensively investigate the variety of factors contributing to non-breeding behaviours in Indian Palm Squirrels. The auto-fellatio behaviour observed in *F. palmarum* is novel and represents the first recorded instance to the best of our knowledge. Additional studies are needed to delve deeper into the motivations and implications of this behaviour, shedding more light on its significance within the context of squirrel biology and behaviour.

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ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

August 2023 | Vol. 15 | No. 8 | Pages: 23631–23826

Date of Publication: 26 August 2023 (Online & Print)

DOI: 10.11609/jott.2023.15.8.23631-23836

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