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Review Article

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Colour Variation in Common Palm Civet Paradoxurus Hermaphrodites in Similipal Tiger Reserve, Odisha, India

Sandeep Ranjan Mishra* **and Harish Kumar Bisht**

Department of Forest &Environment, Government of Odisha, Baripada, Odisha, India

***Corresponding author**
Sandeep Ranjan Mishra, Department of Forest &Environment, Government of Odisha, Baripada, Odisha, India.

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ABSTRACT

Common Palm Civet is recorded from Similipal Tiger Reserve based on Camera trap exercise for easy identification. Civets are nocturnal carnivores with different coat colors, stripes and wide range of geographical landscapes from hilly areas to patchy gardens and thin forests of the low land or near the human settlement areas. Civets, belonging to the Order Carnivora and Family Viverridae, are small, nocturnal mammals with distinct scent glands. This study investigates their distribution, habitat preferences, and population status across various regions, including southwestern Europe, Southern Asia, the East Indies, Africa, and Madagascar. The Common Palm Civet, a prominent species within this family, exhibits a wide distribution across central to southeastern Asia, including regions of India. The research focuses on coat color variations observed in these civets, with implications for taxonomy and ecological studies. The investigation underscores the importance of understanding civet populations for conservation efforts, particularly considering their ecological roles and significance in human health and commerce.

Keywords: Common Palm Civet, Similipal Tiger Reserve, Coat Colour variations.

Introduction

Civets are small, nocturnal and charismatic carnivore mammals having civet musks or per-anal scent glands and belonging to the Order Carnivora, Family Viverridae and Subfamilies Paradoxurinae (e,g Paradoxurus spp.) and Viverrinae (e.g. Viverricula spp).The Family Viverridae comprises seven subfamilies(i.e. viverricula spp).The Family Viverridae comprises seven subfamilies(i.e. Viverrinae, paradoxurinae, Hemigalinae, Fossinae, Galidinae, Herpestinae and Cryptoproctinae)with 36 genera and 70 species enlisted from southwestern Europe, Southern Asia (Sri lanka, Bangaldesh, Bhutan, India, Nepal, China, Indonesia, Philippines, Singapore, Thailand, Vietnam, Cambodia, Brunei, Laos), the East Indies, Africa and Madagascar. Besides, scanty studies on civets in the world, species diversity, distribution patterns, ecological behaviors and population status. The study on the distribution of civets in the globe has accomplished in several countries which may not suffice to generalize the habitat preference in several countries which May not suffice to generalize the habitat preference of these listless carnivores.

The Common Palm Civet Paradoxurus hermaphroditus has a widespread distribution from central to south-eastern Asia [1]. In India, this species has been recorded as far north as the (Narmada) river along with certain parts such as Himalayan foot hills, Lower Bengal, Sikkim and Assam in the North-East India [2,3,4]. This species is nocturnal and omnivorous, usually preferring primary to secondary evergreen and deciduous forests, plantations, logged forests and human settlements as their habitats (Grassman1998). Three species are defined within the genus Paradoxurus (Cuvier, 1821), one of which is the Common Palm Civet Paradoxurus hermaphroditus (Pallas, 1777), also known as Asian Palm Civet or Indian Palm Civet. It is a small mammal belonging to the family Viverridae. It is distributed in southern and southeastern Asia [5,6]. Coat colour variations have been described within Paradoxurus hermaphroditus based on the specimens collected from eastern India and also used as a

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basis to provisionally describe sub-species (nictitatans) and new species (jorandensis) [7,2,8]. Coat colour variation in Common Palm Civet has been previously reported by [9-11].

Variations in coat colour of the Common Palm Civet have been observed from various localities in different climates [2]. The typical coat colour ranges from brownish-grey to ashy-black along with longitudinal stripes. However, in case of short fur, these stripes are replaced by rows of spots. In case of long hair, under fur could be brown to grey with black tip. Head usually has pale-whitish band across the forehead extending to ears along with a whitish spot below the eye (masked face), vibrissae may appear black and sometimes with white at the base. Legs and tail are nearly black and paler towards extremities [3]. Hitherto, Sharma has recorded an albino individual of the Common Palm Civet from Rajasthan, India, but the occurrence of different coat colours has been reported to date especially from these parts of the country [9].

The vegetation types have a strong influence on the living of civets although these animals have learned to live near or in human habitats. Paradoxurus spp. prefers to live close to human dwellings of rural and urban areas where there are fruit bearing trees to get foods, bushy and open places to hide and roofs of quiet and abandoned houses to rest on safely. However, Viverricula indica prefers to live in the forest with tall grasses and shrubs as well as paddy fields. Generally, civets feed on flowers, nectars and fruits like nuts, berry, coconuts, papaya, banana, litchi and mangoes, etc., among plant products and small animals like frogs, lizards, rodents and eggs or babies of birds as well as the human fetus as anomalous feeding behaviors.

The civets have great importance in prospect to human health harboring different parasites, bacteria and viruses and as an ecological regulator [12-15]. The civets are also used for materials of animal products like natural scents, skins, fur and bones, etc. The secretion of peri-anal glands called civet musk is used as the basic gradients in valuable natural perfumes for the pleasant odor. The indiscriminate killing of civets can lead to a dramatic decline in population to the verge of extinction. Therefore, to unveil the urgency of conservation strategies, the current distribution, population status and species diversity is crucial to report through the research works.

Study Area and Method

Similipal is a densely forested hill in the heart of Mayurbhanj District lying close to the eastern most end of the Eastern Ghats in the Mahanadian Province and within the Chotanagpur plateau. Similipal is the richest water shed in Odisha giving rise to many per¬ennial rivers. Four types of forest habitat such as semi-evergreen, tropical moist deciduous, dry deciduous hill forests and high-level Sal are found in Similipal Tiger Reserve which is spread over 2,70 km² and contains 1,708 species of plants, including 94 species of or¬chids. It also hosts 55 species of mammals, 304 species of birds, 60 species of reptiles, 21 species of frogs, 60 species of fishes and 164 species of butterflies. The core area has a size of 1,194.75 km2 [16,17].

The success of camera trapping depends on the selection of ideal locations for deploy¬ing the camera traps in order to maximise the number of captures. Prior to the camera placements surveys were conducted along the forest paths, animal trails and dried stream beds to record carnivores' presence through indirect signs (such as claw marks, tracks, scats, scrapes, scent deposit and kills) [18,19].

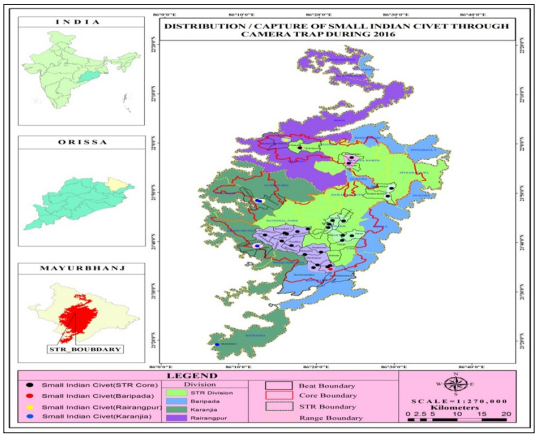

Figure 1: Distribution of Small Indian Civet during 2016

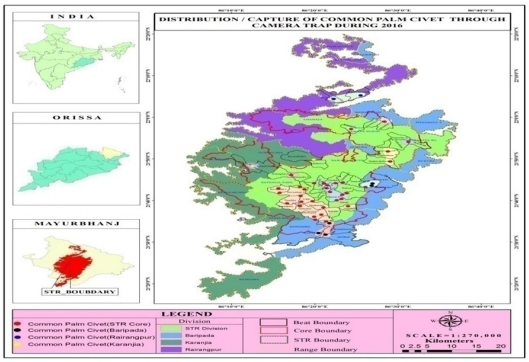

Figure 2: Distribution of Common Palm Civet during 2016 in Similipal Tiger Reserve

Result and Discussion

Image 1: Photograph of partial albino of common palm civet.

The photograph of partial albino individuals of common palm civet was captured from different parts of similipal Tiger Reserve. The Photographs (Image-1) was captured and shows that the body below the shoulders has cremish, whitish fur without any visible marks or spots. Similarly tails and legs lack any pattern or pigmentations. The fur is pigmented only behind the ears and nears eyes and close to the muzzle. White patches on the head below eyes are distinctly visible.

Image 2: Photograph of partial albino showing unpigmented (Creamish) band of fur near abdomen and the middle section of the tail

Image 3: Photograph of normal coat colour of common palm civet

Normal coat colour was captured from tiger reserve. It shows distinct marking as described for Paradoxurus hermaphrodites described the coat in species has longitudinal stripes on the back, spots on the sides, shoulders and thighs, white patches occour on head on a black ground on each side of muzzle and also behind the eye [12]. Some rare speciemen collected previously from Kandhamal have been observed to have only the head and shoulders normally coloured and rest of the body is white.

Conclusion

Since coat colour variations are often influenced by climate and geography, further investigation using both morphologic (and pelagic) characteristics and molecular data are suggested. The investigation into coat color variations among civets highlights the need for further research combining morphological and molecular analyses. As these variations are influenced by both climate and geography, a comprehensive understanding of these factors is crucial for taxonomy and ecological studies. Such endeavors are essential for effective conservation strategies aimed at preserving civet populations and their ecological roles, as well as mitigating potential threats to their existence.

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