



New sighting of *Psammophilus dorsalis* (Gray, 1831) in the Western Ghats of Thandikudi, Kodaikanal Hill, South India

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The present study was new sighting of *Psammophilus dorsalis* from Thandikudi, Kodaikanal. This species belongs to the reptilian class and comprises very large, robust lizards that are well adapted to rocky outcrops, even within tropical environments. The genus "Psammophilus" means to "sand-loving" in Greek, and its members predominantly inhabit rocky habitats. The Indian Peninsula is home to the common rock-dwelling lizard known as the Peninsular Rock Agama (*Psammophilus dorsalis*), which may bring into survival as tall as 1829 meters in the hilly region (Daniel, 2002). The Peninsular Rock Agama, as its name suggests, is an agamid lizard that inhabits hilly regions of South India and is frequently seen on rocky surfaces (Das, 2002; Daniel, 2002). This species exhibits sexual dimorphism; males are enormous and recognizable; with spectacular red and black breeding colour on the head and dorsal region of the body, while females are smaller than males and possess dull grey colouring without any contrasting patterns. In general, males prefer to pole higher than females, though this preference may vary during the reproductive cycle (Radder et al., 2005). Perch height is another difference between the sexes.

A prior observation of this species illustrates the peculiarity of its relationship with the water surface. Veeranagoudar et al. (2010) reported seeing a lizard swimming in the lake at Hampi,

Karnataka. This author concluded that entering the water was a way to lower body temperature because the lizard's body temperature was almost 4°C lower in the water than it was outside. Moreover, Indian reptiles are exceedingly rare (Deodhar and Isvaran, 2017). A greater amount of study is needed in this area since ectotherms, including amphibians and reptiles, are especially vulnerable to variations in temperature and precipitation patterns. This is especially true given global warming. There is a need for more descriptive ecological research on the food, habitat quality, disturbance caused by humans, and impacts of carrion species nutrition. The current investigation addresses synonymy, description, and diagnostic characteristics of this species. The field survey was conducted about 35 kilometres from Kodaikanal; in Thandikudi, Tamil Nadu - in February 2024 (Figures 1 & 2). Kodaikanal is situated at an elevation of around 3705 ft above sea level in the Western Ghats. From the forestation in Vathalakundu, two reptile specimens were observed and was later identified as *Psammophilus dorsalis* (Gray, 1831), a male and female gecko commonly referred to as the Peninsular rock agama (Figures 3 & 4). The identifications methods are based on (Vijayan and Anbalagan, 2023; Vijayan, 2024).

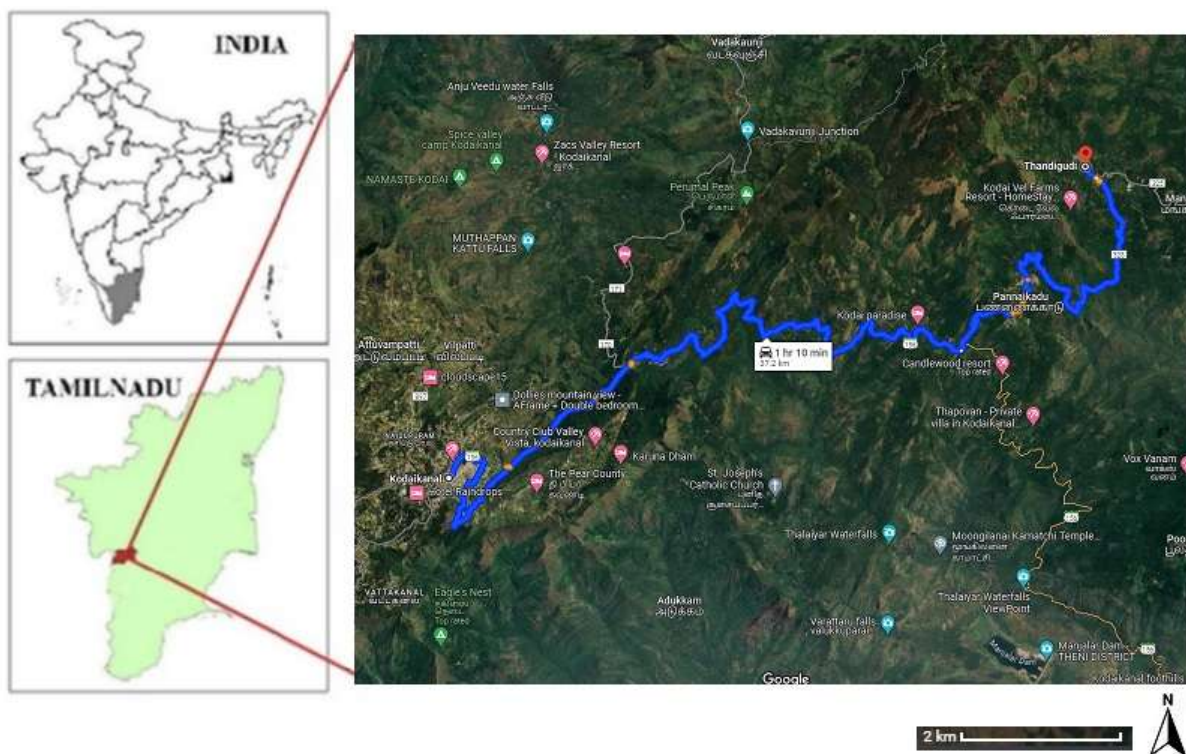


Figure 1. The GPS location map indicates the significant sighting of the two adult (male and female) agama species at Thandikudi, Kodaikanal Hills.



Figure 2. *Psammophilus dorsalis* inhabits the Balamurugan temple, around Thandikudi, Tamil Nadu, which is the species' natural habitat.

Psammophilus dorsalis Gray, 1831 (Figure 3 & 4)

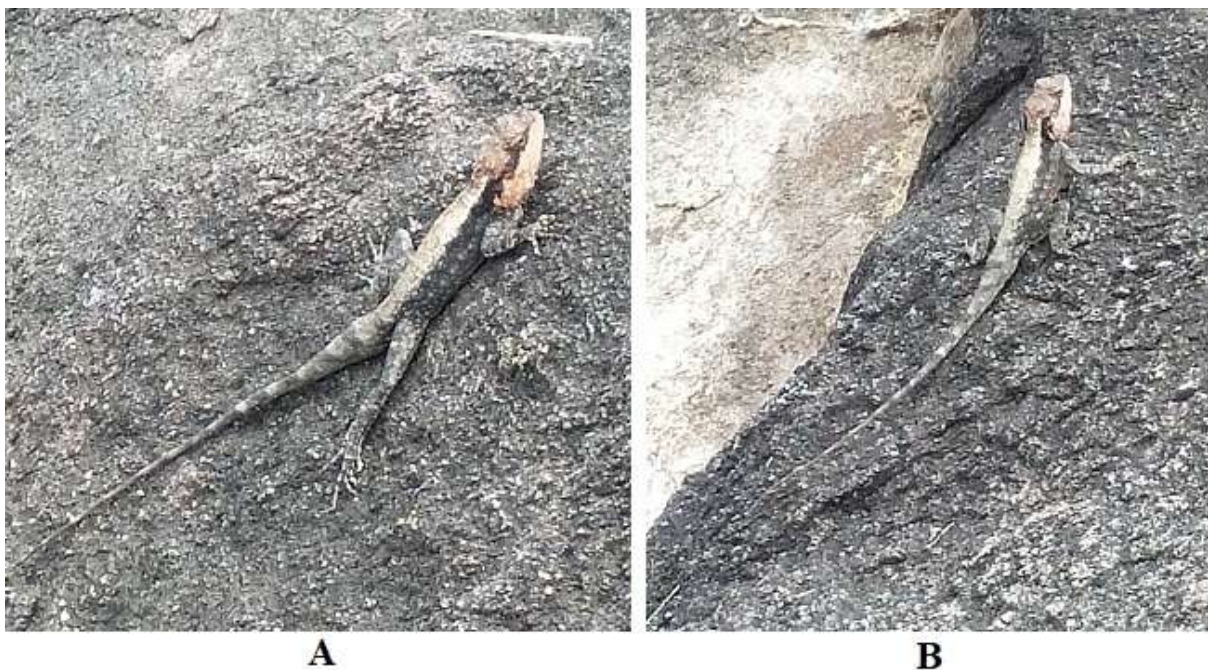


Figure 3. An adult male of *Psammophilus dorsalis*, A) Dorsolateral view of adult male and vivid yellow and orange hues and B) *P. dorsalis* obviously overlap.



Figure 4. An adult female of *Psammophilus dorsalis*, A) Dorsolateral view of adult female and stay dull to dark brown and B) Dull to dark brown head close view

Synonym.

Agama dorsalis Gray in Griffith & Pidgeon, 1831: 56

Agama dorsalis Dumeril & Bibron, 1837: 486

Charasia dorsalis Gray, 1845

Charasia dorsalis Anderson, 1871: 151

Charasia dorsalis Boulenger, 1885: 332

Charasia dorsalis Boettger, 1892: 71

Charasia dorsalis Hora & Chopra, 1923

Psammophilus dorsalis Smith, 1935: 309

Psammophilus dorsalis Wermuth, 1967: 95

Psammophilus dorsalis Das, 1996: 45

Psammophilus dorsalis Murthy, 2010

Psammophilus cf. dorsalis Karthick et al. 2018

Morphology character: *P. sammophilus dorsalis* and *P. blanfordanus*, the only other species in this group that is known to exist, are similar; nevertheless, *P. sammophilus dorsalis* can be

distinguished by an amalgamation of the following traits: in addition, three samples from eastern India, close to the *P. blanfordanus* type location, showed fewer midbody scale rows 84–94 versus 80–100 (Boulenger, 1885; Smith, 1935). *P. dorsalis* and midbody scales row count overlap. Furthermore, we discovered that all of the meristic features overlapped for a tiny number of animals. Therefore, a more thorough examination of morphological and morphometric traits using a larger sample size is necessary to differentiate *P. dorsalis* from *P. blanfordanus*.

Diagnostic Characters: The rest of the species of drastic lizards from the Indian subcontinent can be identified from the genus *P. sammophilus* by their dorso-ventrally compressed bodies, except for *Calotes minor*. In comparison to *Calotes minor*, *P. sammophilus* has more scales encircling its body (80–150) than the latter (48–60). Medium to large body size, body compressed of dorso-ventrally, antehumeral fold, small nuchal and dorsal crest, dorso-lateral scales are reduced, keeled dorsal and lateral rows, and postero-dorsal scale row direction are the characteristics of the adult *P. sammophilus*. *P. sammophilus* can be distinguished from its sister genus *Monilesaurus* gen. nov. and *Calotes* by having a body compression of dorso-ventrally (body compressed as opposed to a dorso-laterally), more than 65 scales on the mid-body scales (as opposed to fewer than 65), a reduced nuchal crest (well-developed as opposed), and a relatively large tympanum. Rather than small, sub-triangular scales, the head has large, uniform shield-like scales (Fig. 3 & 4). Supratympanic spines exist; in *Calotes*, these tend to be present in clusters rather than as two separate spines. Male mature *P. sammophilus* exhibit sexual dimorphism; they are bigger than their female counterparts and have larger cheekbones. *P. sammophilus* also display sexual dichromatic behaviours; during mating season, males have bright yellow and orange colours on their dorsum, while females remain drab to dark brown with patches of either orange or yellow.

Specimen examined: Adult male and female (*Psammophilus dorsalis*), Thandigudi, Kodai hill, Tamil Nadu, February 20, 2024. Collected by Dr. S. Vijayan and C. Sudha Rani

Distribution: Andhra Pradesh, Bihar, Karnataka, Kerala, Kodai hills - Thandigudi (Present study), Madhya Pradesh, Malabar, Mysore, Nilgiris, Nallamali hills, Nilgiris, Odisha, South Arcot and Tamil Nadu.

Reproduction: Oviparous

Conservation: Peninsular rock agama (*Psammophilus dorsalis*) is currently referred to as the least concern category (IUCN, 2024).

Remarks: The Peninsular Rock Agama is a type of agamid lizard that inhabits mountainous regions of Southern India, usually on rocky ground.

Conclusion

The important sights of *Psammophilus dorsalis* are from Thandikudi, Kodai hills, and Tamil Nadu. Additionally, Peninsular Rock Agama species' distribution, habitat, descriptions, colourful images, and synonymy are recorded. These agamid lizards inhabit mountainous regions of South India, usually on rocky ground. It might provide information on rock agama species that contribute to the biodiversity of the study area. Furthermore, field research is required in this particular area for the Agamidae family. This research baseline data is useful for future researchers studying agamid lizards in the region.

Conflict of interest

The authors declare that there is no conflict of interest.

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