

## New record of Roux's Forest Lizard *Calotes rouxii* (Duméril & Bibron, 1837) (Reptilia: Squamata: Agamidae) from Sandur and Gulbarga, Karnataka, India with a note on its known distribution



## Zoology

**KEYWORDS:** *Calotes rouxii*, range extension, distribution update, Karnataka

**Aditya Srinivasulu**

Biodiversity Research and Conservation Society, 303 Orchid, Sri Sai Nagar Colony, Kanajiguda, Secunderabad, Telangana 500 015, India.

\* **C. Srinivasulu**

Natural History Museum and Wildlife Biology and Taxonomy Lab, Department of Zoology, University College of Science, Osmania University, Hyderabad, Telangana 500 007, India.

\*Corresponding Author

### ABSTRACT

*Roux's Forest Lizard Calotes rouxii (Duméril & Bibron, 1837) is chiefly a forest-dwelling draconine agamid that is widely distributed in the Western Ghats and occasionally reported from the Eastern Ghats and other localities in the central peninsular India. We report the presence of this species for the first time from Sandur forests in Bellary district, Karnataka based on a voucher specimen and from Gulbarga township based on sighting record. A detailed distribution map showing localities from where the species is known is also provided.*

The genus *Calotes* Daudin, 1802, belonging to the draconian family Agamidae (Reptilia) is native to South Asia, South-East Asia and Southern China. It is represented by 24 species, of which nine species – *Calotes calotes* (Linnaeus, 1758); *Calotes versicolor* (Daudin, 1802); *Calotes mystaceus* Duméril & Bibron, 1837; *Calotes rouxii* (Duméril & Bibron, 1837); *Calotes emma* Gray, 1845; *Calotes maria* Gray, 1845; *Calotes nemoricola* Jerdon, 1853; *Calotes ellioti* Günther, 1864; *Calotes jerdoni* Günther, 1870; *Calotes grandisquamis* Günther, 1875 and *Calotes aurantolabium* Krishnan, 2008 – occur in India [1]. Of these, seven occur in the Western Ghats, four of which are endemic to the area.

Of the diversity of the genus *Calotes* in South Asia, the Roux's Forest Lizard (*Calotes rouxii*) is endemic to India and found widely distributed in the Western Ghats of Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu [2]. It has also been reported from the Eastern Ghats of Andhra Pradesh [3] and elsewhere from forested tracts of Madhya Pradesh, Maharashtra and Orissa [4]. It is mostly seen in moist evergreen forests, dry deciduous forests, tropical dry scrub or secondary forests [5].

On 18 May 2014, during a field visit to Sandur, Bellary District, Karnataka, 53 km from the town of Bellary, in order to conduct chiropteran surveys, we sighted three males and one female individual near a cave mouth adjoining a stream behind the Harishankara temple (15.02N, 76.56E; 776 mASL) on Kumarasambheta hills (839 mASL) which is mined since long for iron ore. We collected one male (NHM.OU.REPK.1-2014) (Fig. 1) and identified it based on its morphological characters [5,6,7]. Additionally, we have also sighted and photographed this species in Gulbarga University Campus (17.31N, 76.88E; 501 mASL), Gulbarga district on 24 June 2012. Roux's Forest Lizard is character-

ized by the presence of a dewlap in males, two slender spines on either side of the head and a dark groove before the shoulder.

The area from where the male specimen was collected (Harishankara temple, Sandur, Bellary District) and observed, not collected (Gulbarga, Gulbarga District) falls under the central peninsular region of South India from where the species has not been reported before [4]. The vegetation of Sandur comprises mainly of moist and dry deciduous forests with many small streams [8]. This area is known to be rich in species diversity, harbouring many species of birds, mammals, reptiles and amphibians, but is under threat of habitat loss due to legal and illegal large-scale mining for iron ore taking place in the area. While the vegetation of Gulbarga is of tropical dry deciduous type interspersed with dry scrub jungle [9].

The Roux's Forest Lizard is now documented from 59 locations (Table 1, Fig. 2) including the present records from Eastern Karnataka. There have been no sightings of Roux's Forest Lizard from this area of Central Peninsular India. The knowledge about the distribution of this species is clearly incomplete and further detailed surveys need to be conducted in order to ascertain the true distribution of this species in areas other than the Western Ghats.

### Acknowledgements

We are thankful many herpetologists who have shared their sighting records with us, and also are grateful to the Divisional Forest Officer, Sandur Range, Karnataka Forest Department for providing necessary facilities during the survey. CS acknowledges DST-SERB, Govt. of India for research grant.

**Table-1: Occurrence locations of Roux's Forest Lizard *Calotes rouxii* (Duméril & Bibron, 1837) in India.**

Locality	Coordinates	Reference
<b>Andhra Pradesh</b>		
Pedda Cheruvu, Nagarjunasagar Srisailem Tiger Reserve, Kurnool District	15.94N, 78.78E	Srinivasulu et al. (2006) [10], Srinivasulu & Das (2008) [3]
Rollapadu Wildlife Sanctuary, Kurnool District	15.73N, 78.33E	Srinivasulu & Srinivasulu (2004) [11]
<b>Goa</b>		
Bhagwan Mahaveer Wildlife Sanctuary	15.33N, 74.28E	Srinivasulu et al. (2013) [4]
Bondla Wildlife Sanctuary	15.43N, 74.11E	Srinivasulu et al. (2013) [4]
Mhadei National Park & Wildlife Sanctuary	15.56N, 74.22E	Srinivasulu et al. (2013) [4]
Mollem National Park	15.34N, 74.28E	Srinivasulu et al. (2013) [4]
<b>Gujarat</b>		
Ahwa & Dangs, Dangs District	20.75N, 73.67E	Sharma (2000) [12], Srinivasulu et al. (2013) [4]
Jambugodha Wildlife Sanctuary, Panchmahal and Vadodara Districts	22.36N, 73.66E	Vyas (2006) [13]
Purna National Park & Wildlife Sanctuary, Dangs District	20.91N, 73.69E	Vyas (2007) [14]
Vansda National Park, Navsari District	20.69N, 73.53E	Vyas (2004) [15]

Karnataka		
Agumbe, Shimoga District	13.50N, 75.09E	Ganesh et al. (2006) [16], Srinivasulu et al. (2013) [4]
Mookambika Wildlife Sanctuary, Udupi District	13.85N, 74.81E	Srinivasulu et al. (2013) [4]
Anshi, Belagavi District	14.99N, 74.35E	Srinivasulu et al. (2013) [4]
Bhadra Wildlife Sanctuary, Chikkamagalur District	13.44N, 75.57E	Srinivasulu et al. (2013) [4]
Chikkamagalur, Chikkamagalur District	13.31N, 75.75E	Srinivasulu et al. (2013) [4]
Dharwar, Dharwar District	15.45N, 75.00E	Srinivasulu et al. (2013) [4]
Gersoppa, Uttara Kannada District	14.24N, 74.64E	Srinivasulu et al. (2013) [4]
Gulbarga, Gulbarga District	17.30N, 76.87E	Present study
Harishankara, near Sandur, Bellary District	15.05N, 76.53E	Present study
Jog, Uttara Kannada District	14.22N, 74.81E	Srinivasulu et al. (2013) [4]
Kalasa, Chikkamagalur District	13.22N, 75.25E	Srinivasulu et al. (2013) [4]
Kathalekan, Uttara Kannada District	14.27N, 74.72E	Srinivasulu et al. (2013) [4]
Mathighatta, Uttara Kannada District	14.16N, 75.40E	Srinivasulu et al. (2013) [4]
Nagarhole National Park, Mysuru District	12.04N, 76.13E	Srinivasulu et al. (2013) [4]
Sirsi, Uttara Kannada District	14.61N, 74.82E	Srinivasulu et al. (2013) [4]
Someshwara Wildlife Sanctuary, Udupi District	13.43N, 75.08E	Srinivasulu et al. (2013) [4]
Talewadi, Belagavi District	15.72N, 74.62E	Srinivasulu et al. (2013) [4]
Tirthahalli, Shimoga District	13.68N, 75.23E	Srinivasulu et al. (2013) [4]
Kerala		
Calicut University Campus, Calicut District	11.13N, 75.88E	Srinivasulu et al. (2013) [4]
Chimmini Wildlife Sanctuary, Thrissur District	10.43N, 76.49E	Srinivasulu et al. (2013) [4]
Parambikulam National Park, Palakkad District	10.39N, 76.77E	Srinivasulu et al. (2013) [4]
Periyar Tiger Reserve, Idukki District	9.46N, 77.23E	Zacharias (1997) [17]
Ponnudi, Thiruvananthapuram District	8.75N, 77.11E	Inger et al. (1984) [18]
Shendurney Wildlife Sanctuary, Kollam District	8.85N, 77.21E	Srinivasulu et al. (2013) [4]
Peechi – Vazhani WLS, Thrissur District	10.48N, 76.43E	Srinivasulu et al. (2013) [4]
Vanjikadavu, Thrissur District	10.35N, 76.35E	Das & Whitaker (1990) [19]
Nadukani, Thrissur District	10.08N, 76.67E	Das & Whitaker (1990) [19]
Maharashtra		
Bandha, Sawantwadi, Pune District	18.70N, 73.52E	Srinivasulu et al. (2013) [4]
Bhimashanker Wildlife Sanctuary, Pune District	19.07N, 73.53E	Srinivasulu et al. (2013) [4]
Ghoti, Nasik District	19.70N, 73.62E	Srinivasulu et al. (2013) [4]
Kanheri caves, Bombay District	19.20N, 72.91E	Srinivasulu et al. (2013) [4]
Khandala, Poona District	18.76N, 73.37E	Srinivasulu et al. (2013) [4]
Koyna Nagar, Satara District	17.69N, 74.00E	Srinivasulu et al. (2013) [4]
Lonavla, Pune District	18.74N, 73.40E	Srinivasulu et al. (2013) [4]
Matheran, Raigad District	18.98N, 73.26E	Srinivasulu et al. (2013) [4]
Melghat Tiger Reserve, Amaravati District	21.39N, 77.14E	Srinivasulu et al. (2013) [4]
Panvel, Raigad District	18.98N, 73.11E	Srinivasulu et al. (2013) [4]
Salsette, Bombay District	19.19N, 72.90E	Srinivasulu et al. (2013) [4]
Sanjay Gandhi National Park, Mumbai District	19.21N, 72.91E	Mirza & Pal (2008) [20]
Suriamal Road, Thane District	19.22N, 72.95E	Srinivasulu et al. (2013) [4]
Tamil Nadu		
Anaimalai Hills, Coimbatore District	10.41N, 77.12E	Ishwar et al. (2003) [21]
Hosur, Krishnagiri District	12.72N, 77.82E	Srinivasulu et al. (2013) [4]
Kalakad-Mundunthurai Tiger Reserve, Tirunelveli District	8.54N, 77.42E	Ishwar et al. (2001) [22], Ishwar et al. (2003) [21], Krishnan (2008) [23]
Rajapalayam, Virudhnagar District	9.44N, 77.55E	Srinivasulu et al. (2013) [4]
Shevaroy Hills, Salem District	11.78N, 78.21E	Srinivasulu et al. (2013) [4]
Siruvani Foothills, Coimbatore District	10.93N, 76.68E	Kannan & Venkataraman (1998) [24]
Top slip, Anaimalai, Coimbatore District	10.46N, 76.85E	Srinivasulu et al. (2013) [4]
Telangana		
Farahabad, Nallamala Hills, Mahbubnagar District	16.26N, 78.71E	Srinivasulu et al. (2006) [10], Srinivasulu & Das (2008) [3]
Kawal Wildlife Sanctuary, Adilabad District	19.24N, 78.87E	Srinivasulu (2003) [25]



Fig-1. Male Roux's Forest Lizard *Calotes rouxii* (Duméril & Bibron, 1837) from Harishankara Temple, Sandur, Bellary district, Karnataka, India.



Fig-2. Localities from where the Roux's Forest Lizard *Calotes rouxii* (Duméril & Bibron, 1837) is known (yellow circles) including the new records (red circles) from Eastern Karnataka, India.

## REFERENCE

1. Uetz P and Hošek J (eds.). The Reptile Database. <<http://www.reptile-database.org>>. Accessed on 04 June 2014; 2014. | 2. Manthey U. Agamid Lizards of Southern Asia - Agamen des südlichen Asiens. Draconinae I. Chimaira, Frankfurt am Main, Germany; 2008. | 3. Srinivasulu C and Das I. The herpetofauna of Nallamala Hills, Eastern Ghats, India: An annotated checklist, with remarks on nomenclature, taxonomy, habitat use, adaptive types and biogeography. *Asiat. Herpet. Res.* 2008; 11: 110-131. | 4. Srinivasulu B, Srinivasulu C, Vijayakumar SP, Ramesh M and Ganesan SR. Calotes rouxii. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 June 2014; 2013. | 5. Smith MA. Fauna of British India including Ceylon and Burma. Reptilia and Amphibia Vol. II Sauria. Taylor & Francis, London, 1935; xiii+440 pp, plate 1+2 maps. | 6. Günther ACLG. The Reptiles of British India. Published for the Ray Society by Robert Hardwicke. Taylor & Francis, London, 1864; xxvii + 452 pp, plates 26. | 7. Das I. A photographic guide to snakes and other reptiles of India. New Holland, 2002; 144pp. | 8. Seetharam YN, Haleshi C and Vijay. Assessment of plant biodiversity of dry deciduous forest of Sandur, Karnataka. *Ecol. Environ. Conserv.*, 1999; 5(1): 1-6. | 9. Champion HG and Seth SK. A Revised Survey of Forest Types of India. Govt. of India Press, New Delhi, 1968; p. 404. | 10. Srinivasulu C, Bhargavi Srinivasulu and Rao CAN. Reptilian fauna of Nagarjunasagar Srisailem Tiger Reserve, Andhra Pradesh. *Rec. zool. Surv. India*, 2006; 106(3): 97-122. | 11. Srinivasulu C, and Bhargavi Srinivasulu. Herpetofaunal diversity of Rollapadu Wildlife Sanctuary and its vicinity, Andhra Pradesh. In: Shankaraiah, K. (Ed.) Proceeding of the National Symposium on Bioresources, Biotechnology & Bioenterprise. Osmania University, Hyderabad, 2004; 52-60. | 12. Sharma RC. Reptilia. In: Alfred, J.R.B. (Ed.), Fauna of Gujarat, (Part-1) Vertebrates. State Fauna Series 8. Zoological Survey of India, Kolkata, 2000; 243-297. | 13. Vyas R. Reptilian diversity of Jambughoda Wildlife Sanctuary, Gujarat. *Tigerpaper*, 2006; 33(1): 20-23. | 14. Vyas R. Herpetofauna of Purna Wildlife Sanctuary, Gujarat, India. *ReptileRap*, 2007; (8): 10-15. | 15. Vyas R. Fauna of protected area. 9. Herpetofauna of Vansda National Park, Gujarat. *Zoo's Print J.*, 2004; 19(6): 1512-1514. | 16. Ganesh SR, Chandra Mouli SR and Edward Garfred SL. Herpetofaunal survey at Agumbe, Karnataka. *Cobra*, 2006; 64: 7-10. | 17. Zacharias VJ. Reptiles of Periyar Tiger Reserve, Kerala. *Jour. Bombay nat. Hist. Soc.*, 1997; 94(3): 575-579. | 18. Inger RF, Shaffer HB, Koshy M and Bakde R. A report on a collection of amphibians and reptiles from the Ponmudi, Kerala, South India. *Jour. Bombay nat. Hist. Soc.*, 1984; 81(2): 406-427. | 19. Das I and Whitaker R. Herpetological investigations in the Western Ghats, South India; Part I, The Vanjikadavu and Nadukani forests, Kerala State. *Hamadryad*, 1990; 15(1): 6-9. | 20. Mirza ZA and Pal S. A checklist of reptiles and amphibians of Sanjay Gandhi National Park, Mumbai, Maharashtra. *Cobra*, 2008; 2(4): 14-19. | 21. Ishwar NM, Chellam R, Kumar A and Noon BR. The response of agamid lizards to rainforest fragmentation in the Southern Western Ghats, India. *Conservat. Soc.*, 2003; 1: 69-86. | 22. Ishwar NM, Chellam, R and Kumar A. Distribution of forest floor reptiles in the rainforest of Kalakad-Mundanthurai Tiger Reserve, South India; Special Section: Kalakad-Mundanthurai Tiger Reserve. *Curr. Sci.*, 2001; 80: 413-418. | 23. Krishnan S. New species of Calotes (Reptilia: Squamata: Agamidae) from the southern Western Ghats, India. *J. Herpetol.*, 2008; 42(3): 530-535. | 24. Kannan P and Venkataraman C. Reptile fauna of Siruvani Hills, Nilgiri Biosphere Reserve, Tamil Nadu. *Cobra*, 1998; 33: 6-9. | 25. Srinivasulu C. Reptiles of Kawal Wildlife Sanctuary, Andhra Pradesh. *ReptileRap*, 2003; 5: 2. |