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43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Ph: +91 9385339863 | www.threatenedtaxa.org
Email: sanjay@threatenedtaxa.org

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Cover: Orange Oakleaf *Kallima inachus* with colour pencils and watercolor wash by Elakshi Mahika Molur adapted from a workshop by Lenin Raj.



New locality record of Forest Spotted Gecko *Cyrtodactylus (Geckoella) cf. speciosus* (Beddome, 1870) (Reptilia: Squamata: Gekkonidae) from Thanjavur, in the eastern coastal plains of Tamil Nadu, India

Gopal Murali¹

¹ IISER-TVM Center for Ecology and Evolution (ICREEE), School of Biology, Indian Institute of Science Education and Research Thiruvananthapuram, Maruthamala PO, Thiruvananthapuram, Kerala 695551, India.

² Current address: Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, Arizona 85719, United States. goopaalmurali@gmail.com

Abstract: The study of species distributions is critical for gaining insights into biogeographic patterns and for the protection of threatened species. Here, I report on the new distributional record of the Forest Spotted Gecko (*Cyrtodactylus cf. speciosus*) from Thanjavur in the coastal plains of Tamil Nadu. This observation marks the first documented occurrence of this species outside its typical hilly habitat in southern India.

Keywords: Eachankottai Village, Erode Gecko, population, range extension, road cruising surveys.

The Forest Spotted Gecko or Erode Gecko *Cyrtodactylus speciosus* (Beddome, 1870) was described initially as *Gymnodactylus speciosus* without precise locality information from “a tope near Erode,” in Erode District, Tamil Nadu, India (Beddome 1870). Smith (1935) listed this species as a color variant of *Gymnodactylus collegalensis* Beddome, 1870 and noted that its range is limited to low-elevation sites in the hills of southern India. Agarwal et al. (2016) subsequently recognized this species as *Cyrtodactylus speciosus* based on comparisons with the damaged type specimen and molecular data collected from individuals at Coimbatore North Taluk, Coimbatore

District, Tamil Nadu. This species is yet to be collected from the type locality, Erode. *Cyrtodactylus speciosus* is also reported from three other locations in the southern Eastern Ghats (Jawadhu, Shevaroy, and Kolli hills; Table 1). Further, this species or a closely related lineage is known to occur in Sirumalai Hills, Dindigul District, Tamil Nadu (Ganesh & Arumugam 2016). However, these records were based on photo vouchers alone, whereas persevered voucher specimens and tissue samples for genetic data would have ideally been the preferred case. Here, based on photo vouchers, I report the easternmost locality of *Cyrtodactylus cf. speciosus* from Thanjavur, in the coastal plains of Tamil Nadu.

On 12 July 2014 at 1952 h, I encountered a live adult *Cyrtodactylus cf. speciosus* crossing a road near Eachankottai Village, Thanjavur, Tamil Nadu (10.6490°N, 79.1492°E; Figure 1). This individual was identified to be a male (based on hemipenial bulge) with a snout-vent length (SVL) of 47 mm. I encountered another male gecko with a SVL 43 mm on 10 June 2022 at 2037 h from the same road (10.6529°N, 79.1500°E; Image 1).

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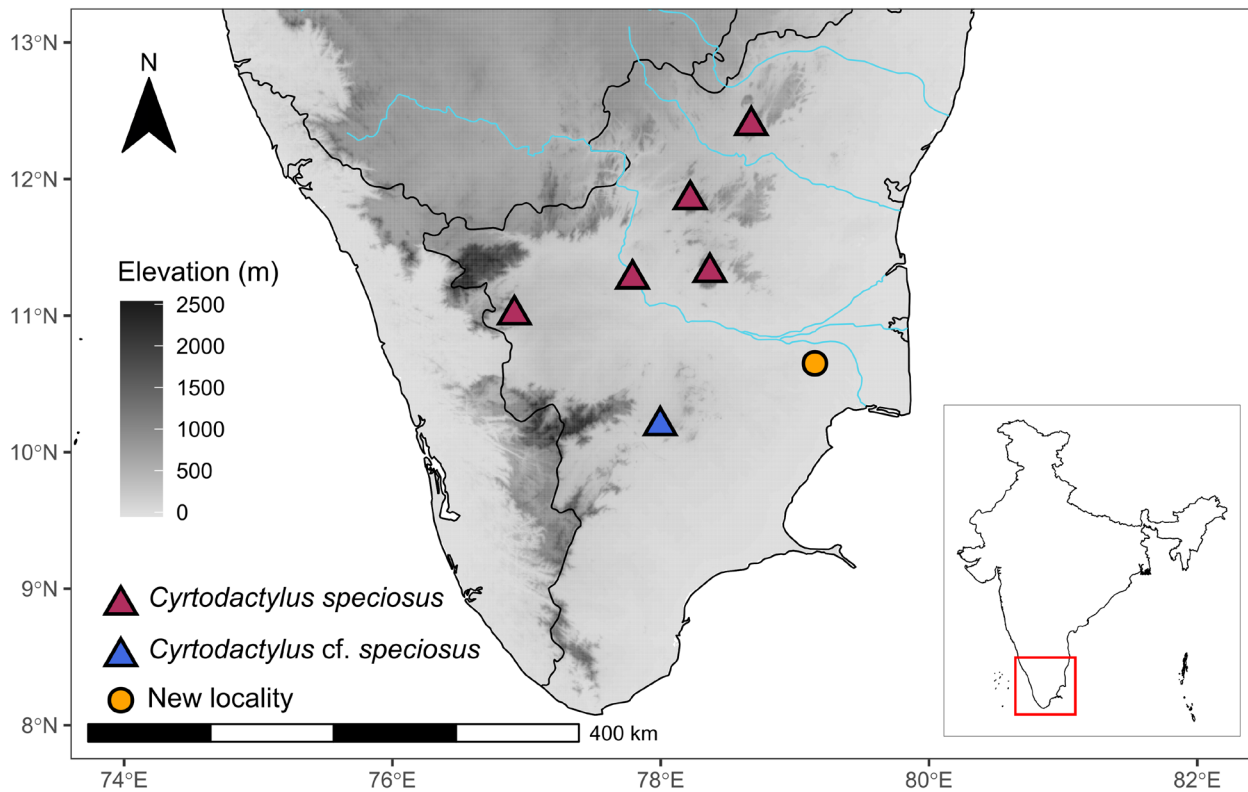


Figure 1. Map showing known locality records for: *Cyrtodactylus speciosus*—maroon triangle | *Cyrtodactylus cf. speciosus*—blue triangle | new locality—orange circle.

Table 1. Published locality records and corresponding districts where *Cyrtodactylus speciosus* and *Cyrtodactylus cf. speciosus* have been reported from Tamil Nadu.

Locality	District	Reference
‘Tope near Erode’	Erode	Beddome 1870
Coimbatore North Taluk	Coimbatore	Agarwal et al. 2016
Jawadhu hills	Tiruvannamalai	Ganesh & Arumugam 2016
Shevaroy hills	Salem	Ganesh & Arumugam 2016
Kolli hills	Namakkal	Ganesh & Arumugam 2016
Sirumalai hills (<i>Cyrtodactylus cf. speciosus</i>)	Dindigul	Ganesh & Arumugam 2016
Eachankottai village (<i>Cyrtodactylus cf. speciosus</i>)	Thanjavur	Present note

Both individuals were visually similar to *C. speciosus*, as described by Agarwal (2016) and Agarwal et al. (2016). The characters noted in the two individuals include two interorbital spots, an elongated interparietal streak longer than two interoccipital spots, a deeply notched post-occipital collar (separated from the postorbital streak in one of the two individuals; Image 1), and two brown dorsal bands between limb

insertions with the black border of the bands slightly notched (Image 1). The geckos made squeaking calls when handled for the first time, as observed in other *Geckoella* group (Agarwal et al. 2016). The geckos were photographed, measured, and released at the capture site. Other geckos observed in this location include the widespread, common, and human-commensal ones, viz., *Hemidactylus cf. parvimaclatus*, *H. triedrus*, *H. frenatus*, and *H. leschenaultii*. *Hemidactylus scabriceps*, another dryland specialist that shares ecological characteristics of *C. speciosus* (strictly ground-dwelling and nocturnal), is also known to occur in Thanjavur (Srikanthan et al. 2018). However, I have not seen *H. scabriceps* from this location. The only nearby sighting of *H. scabriceps* is about ca. 20 km from the current location (10.7958°N, 79.0589°E).

The habitat adjacent to the road where the geckos were found consists mainly of open arid scrublands and thorn forests—Deccan thorn scrub forest ecoregion—according to Olson et al. (2001). These are bordered by plantation trees along both sides of the road (Image 2). This land area is a part of the district’s exotic cattle breeding farm, established by the Government of Tamil Nadu in 1954, and part of it has remained unaltered since



Image 1. Voucher photographs of *Cyrtodactylus* cf. *speciosus* from Eachankottai Village, Thanjavur District, Tamil Nadu. The top individual was photographed in 2014, and the bottom individual was photographed in 2022. © Gopal Murali.



Image 2. Habitat of *Cyrtodactylus* cf. *speciosus* from Eachankottai Village, Thanjavur, Tamil Nadu showing the unmanaged open arid scrub forest habitat where the geckos were seen. © Gopal Murali.

then. Regions immediately surrounding the farm are dominated greatly by agricultural land, mostly cashew and sugarcane fields. I further conducted extensive road cruising surveys in nearby potentially suitable habitats within a ca. 25 km radius surrounding the sighted locality. However, I did not find any *Cyrtodactylus* spp. This indicates that species is probably sensitive to habitat modification and that the population is likely confined to the unmanaged arid scrublands within the cattle farm, encompassing about 5.6 km² in total, with native scrubland occupying no more than 2.6 km². The currently reported locality does not strictly fall under any protected area network. However, the entire farm area is fenced (Image 2), and outsiders are not allowed without permission. Nevertheless, this region seemed to have been occasionally used by locals for cattle

grazing. The present sighting of such an apparently habitat-specific gecko (Agarwal et al. 2016) suggests that such habitat patches like in Eachankottai require greater protection, as they harbor greater biodiversity than the surrounding farmlands, in as far as is known.

Cyrtodactylus speciosus has been assigned to the 'Endangered' category by the IUCN, and the species population status is assessed to be in decline due to habitat loss and fragmentation (Achyuthan et al. 2021). This new easternmost locality for *C. cf. speciosus* is ca. 112 km south-west of the nearest known locality at Kolli Hills, Tamil Nadu, and 173 km from the type locality Erode (Figure 1). Nevertheless, it remains unclear if *C. speciosus* is actually a single widespread species or a group of closely related species (Agarwal et al. 2023a). All members of the *C. collegalis* complex,

except *C. varadgirii* and the recently described *C. chengodumalaensis*, have been documented only in hilly landscapes of southern India (Agarwal et al. 2023b). The newly documented location is situated at an elevation of 24 m, about 65 km from the nearest hillock. Further, this location is ~45 km from the nearest coastline. The current distribution locality thus marks the first occurrence record of this species complex outside their typical hilly terrain in southern India in addition to imprecise type locality ('Erode'). It is possible that the *Cyrtodactylus* cf. *speciosus* population reported here could be an entirely distinct lineage. Hence, further genetic sampling may help assess its evolutionary relationship with other arid zone *Cyrtodactylus* species and help resolve the biogeographic history of this species complex.

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Tamil Nadu 641006, India
ravi@threatenedtaxa.org



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