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Cover: Common Keeled Skink *Eutropis carinata* in oil pastels, colour pencils, & micron pen adapted from photograph by H. Byju © Pooja Ramdas Patil.

INTRODUCTION

The Erode Ground Gecko *Cyrtodactylus speciosus* (Beddome, 1870) is a species of nocturnal, terrestrial, oviparous, gekkonid lizard endemic to parts of southern India (Beddome 1870; Agarwal et al. 2016, 2023a). It was first described as *Gymnodactylus speciosus* based on the holotype BMNH 1946.9.4.88 (Natural History Museum, London) collected from “tope near Erode” (Beddome 1870). Then it was synonymised with *C. collegalensis* (Beddome, 1870), another closely-related gecko that is morphologically similar and geographically proximate to *C. speciosus* (see Agarwal et al. 2016 and references therein). Agarwal et al. (2016) clarified the afore-mentioned taxonomic complications in this group and also resurrected, redescribed, and illustrated this poorly-known species based on its partly damaged holotype. This species still remains unseen from its stated type locality ‘Erode’ thus far, despite some surveys in hills nearby (see Ganesh et al. 2018). Agarwal et al. (2016) allocated populations from North Coimbatore Taluk (100 airline km south-west of the type locality, ‘Erode’) to *C. speciosus*. Agarwal et al. (2023a) reported genetic similarity between populations from Coimbatore and Shevaroy (that are some 180 km apart, passing through Erode; also see Ganesh & Arumugam 2016) and interchangeably represented *C. speciosus* both with and without ‘cf.’ prefix, indicating taxonomic uncertainty.

As for its distribution, the new specimens of Agarwal et al. (2016) were from Maruthamalai and Anaikatti hills, just to the north-west of Coimbatore (Ishan Agarwal and N.S. Achyuthan pers. comm. to SRG in April 2023). Agarwal et al. (2023a) reported a genetically-similar population from Shevaroy – the base of Yercaud near Salem. Our perusal of museum registry and related data mining revealed *C. speciosus* collections from North Coimbatore (CAS Herp 94157; California Academy of Sciences, USA), Udumalpet (CAS Herp 91458), Aliyar (ZSI/SRS/VRL 156, unreg.; Zoological Survey of India, Chennai), and Anaikatti (SACON VR-5a-b; Salim Ali Centre for Ornithology & Natural History, Coimbatore) (<http://portal.vortnet.org/search?q=collegalensis>; Ganesh et al. 2020; SRG unpub. Data). Taken together, populations across potential barriers such as Cauvery River (Shevaroy) and Palghat Gap (Aliyar, Udumalpet) have been treated as *C. speciosus*. *C. speciosus* and a few other southern Indian congeners, especially in the *C. collegalensis* complex were reported to have a marked affinity to hilly forest terrains (Agarwal & Karanth 2015). Agarwal et al. (2016) while remarking on their excursions in Erode to re-sight topotypical *C.*

speciosus stated that Erode is a large town surrounded by agricultural matrix and that their brief surveys did not yield findings of any *Cyrtodactylus* or “suitable habitat” indicating that farmlands are not the ideal habitats for *C. speciosus*. Murali (2023) reported *C. cf. speciosus* from coastal plains of Thanjavur, again within unmanaged arid scrublands. In this note, we report our findings of living populations of *C. speciosus* sensu Agarwal et al. (2023a) in peri-urban common-lands of Coimbatore.

MATERIALS & METHODS

During April–September 2023, for six months, as part of biodiversity assessment of degraded landscapes, we conducted series of night surveys at two wetland sites in northern fringes of Coimbatore. We sighted *C. speciosus* (Image 1) in these sites, 3½ km apart, ear-marked for wetland restoration in peri-urban north Coimbatore, viz., Site–1 Nallusamy checkdam (11.1103 °N, 76.9940 °E; 435 m elevation) in Keeranatham village and Site–2 Sarkar Sama Kulam or SS Kulam for short (11.1228 °N, 77.0216 °E; 420 m) in Kondayampalayam village (Image 2), Coimbatore district, Tamil Nadu, India.

RESULTS

From about 100 h of survey, we obtained 14 sightings of *C. speciosus* of varying sexes and maturity levels (Table 1), with an encounter rate of about 7 h survey to get 1 sighting, in these sites.

Site 1, Nallusamy checkdam

On 8–9 April 2023, during 1830–0030 h (18 man h; 3 persons) visual encounter survey a total of four sightings, including two gravid females (bulged belly, absence of femoral pores, and hemipenial bulges), one adult male (presence of femoral pores and hemipenial bulges) and one unsexed (escaped before restraint) individual were documented. The two gravid females were sighted at short distance (10 m away) and time (15 min. apart) intervals. When seen from below, two ova were visible through the distended belly skin in both the female geckoes. On 30 May and 2 June 2023, during 1900–2200 h (18 man h; 3 persons) visual encounter surveys, no sightings of the gecko could be obtained. The area was quite wet and slushy with many temporary rainwater puddles due to rains and the survey time also experienced drizzles. On 2 and 3 August 2023, during 1945–2145 h (12 man h; 3 persons) visual encounter



Image 1. *Cyrtodactylus speciosus* sightings (top left to bottom right)—adult male dorsal and ventral views (note hemipenal bulge at tail base); gravid female dorsal and ventral views (note distended belly and feebly visible ova); juvenile and subadult next to an Indian Rs.2/- coin of about one inch diameter (for size comparison). © S.R. Ganesh.

Table 1. Sightings of *Cyrtodactylus speciosus* in the plains of peri-urban northern Coimbatore; left columns Site-1 (Nallusamy checkdam); right columns Site-2 (Sarkar Sama Kulam); #-gravid; *-adults.

Months	Survey (man h)		Males*		Females*		Unsexed*		Subadults		Juveniles		Total no.	
April	18	0	1	0	2#	0	1	0	0	0	0	0	4	0
May–June	18	18	0	0	0	0	0	0	0	0	0	0	0	0
August	12	20	0	0	0	0	3	0	2	2	1	2	6	4
September	2	12	0	0	0	0	0	0	0	0	0	0	0	0
Total	50	50	1	0	2	0	4	0	2	2	1	2	10	4

survey, six sightings, including three unsexed subadults (organ under-developed), two unsexed adults (escaped before restraint) and one unsexed juvenile (escaped before restraint) were documented. In August, the geckoes were sighted on the vegetated bunds of the ploughed lands. They were seen entering cracks and

holes in the ground upon our approach with spot-lights. Individuals were seen at the base of shrubs and plants under the cover of the shrubby top layer. Subadults were sighted in grassy patches. Juvenile was sighted in thick leaf-litter. On 2 September 2023, during 1915–2015 h (2 man h; 2 persons), no gecko of the target species was

sighted. In Site-1, from 50 h survey, 10 sightings were obtained, equating to 5 h survey to get 1 sighting of *C. speciosus*.

Site 2, Sarkar Sama Kulam

On 29 May and 3 June 2023, during 1900–2200 h (18 man h; 3 persons) visual encounter surveys, no sightings of the gecko was obtained. Due to rains, the area was wet and partly inundated. On 4 August 2023, during 2100–2300 h (6 man h; 3 persons), two juveniles (distinctly small body size, proportionally larger head and eyes, contrastingly coloured body pattern patches), and one subadult (milder features of juveniles present) were sighted. The area was dry lake bed with *Acacia* and *Prosopis* trees and thorny scrub thickets close by. Sightings of the geckoes were on small green herb patches of creeper-like plants growing in dried up waterbodies and its fringes. Juveniles were faster in their

locomotion, than the adults seen. On all occasions, the young ones were aware of our presence and approach and were scurrying away from us, trying to crawl into and hide into the ground vegetation. On 5 August 2023, during 2000–0000 h (12 man h; 3 persons), one subadult was sighted, in a similar area. On 6 August 2023, during 2030–2330 h (6 man h; 2 persons), no gecko of the target species was sighted. On 1 September 2023, during 1945–2345 h (12 man h; 3 persons), no gecko of the target species was sighted. In Site-2, from 50 h survey, four sightings were obtained, equating to 12½ h survey to get one sighting of *C. speciosus*.

In both these sites, the general habitat consisted of a mix of farmlands (of paddy and coconut trees), dried-up lake with bund, open grasslands with thorny shrubs and sparse stony mounds. The areas have alluvial soil and gravelly sand and were often interspersed with garbage dumps, electric towers, tar roads, and fences.



Image 2. *Cyrtodactylus speciosus* habitat and range (top left to bottom right)—Satellite map showing Site-1 (Nallusamy checkdam) and Site-2 (SS Kulam) roughly ear-marked by outline as well as eastern foothills of Palamalai-Melmudi ranges, a region of its known distribution. © S.R. Ganesh.

The surveyed sites were water bodies that are either live (Site 1) or dried up (Site 2). On the sides of the lake bunds there were open grounds, fallow lands, pastures, and farmlands. On multiple occasions during the early evenings goats, buffaloes, and cows were seen reared by local shepherds in both the sites. The precise immediate microhabitats, i.e., the resting substrates of the geckos were bare ground having sparse scrub, grass patches, debris of plant matter, and gravel. The general area was a fallow land covered with low dense bushes grown on and around muddy bunds, bordering agricultural fields. All the target geckoes were seen active at night on ground of unploughed patches bordering cultivated farmlands, across the bunds.

Syntopic gecko species sighted in both the sites were *Hemidactylus frenatus* Schlegel, *H. triedrus* (Daudin), *H. leschenaultii* Dumeril & Bibron, *H. parvimaculatus* Deraniyagala, and *H. cf. sankariensis* Agarwal, Bauer, Giri & Khandekar. From iNaturalist we found that *C. speciosus* has also been recorded in Ondipudur Weaver's colony (11.001044 °N 77.057633 °E), a southeastern suburb of Coimbatore (<https://www.inaturalist.org/observations/94402766> accessed in September 2023). Upon a visit there, we found the habitat to be similar to the ones at the surveyed sites 1 and 2. It was also learnt that *C. speciosus* has been sighted in Ganapathy (11.0355 °N, 76.9790 °E) which today is a much more urbanized, core part of Coimbatore city, during the early 1990s (Sanjay Molur pers. comm. in April 2023). Coimbatore district includes parts of Siruvani hills (>1,200 m) of the Western Ghats and the typical southern Indian plains (here, at ≈400 m) with dry evergreen vegetation as the natural climax flora (Chandrabose 1981; Kiruthika et al. 2017).

DISCUSSION

We identified the geckoes as *C. speciosus* following Agarwal et al. (2016) who studied the Coimbatore population on both morphological and molecular lines. This includes a caveat, as stated by Agarwal et al. (2016), that these are not topotypical populations from the broad locality – Erode (also see Agarwal et al. 2023a). The Coimbatore populations showed diagnostic features of *C. speciosus* sensu Agarwal et al. (2016) and did not show any non-diagnostic features that potentially resemble or overlap with regional, allopatric congeners (after Agarwal et al. 2023b). The Coimbatore geckoes exhibited two equidistant (rarely three) dark transverse cross bars on trunk (vs. one in *C. aravindi*; two much

broader bars in *C. rishivalleyensis*; irregular broken-up bars in *C. srilekhae*; multiple series of large ovoid paired spots in *C. collegalisensis*, *C. chengodumalaensis*, *C. irulaorum*, *C. relictus*, and *C. varadgirii*); uniform dorsal scalation (vs. not so in *C. nebulosus*, *C. jeyporensis*, and *C. chengodumalaensis*).

Agarwal et al. (2023) reported that Coimbatore and Shevaroy populations of *C. speciosus* grouped together in their molecular phylogenetic analysis. Additionally, Murali (2023) reported *C. cf. speciosus* from “unmanaged arid scrublands” within the compounds of an old, stable, cattle breeding farm (estd. 1954, Govt. of Tamil Nadu) in Echankottai near Thanjavur, in the eastern coastal plains. This indicates that this species (complex) also occurs in the plains of southern India. But yet, despite surveys in the adjacent cashew and sugarcane fields, no *Cyrtodactylus* spp. were found (Murali 2023), indicating its stenotopic nature. Seen against this backdrop, our finding of *C. speciosus* in the farmland precincts in the plains (400 m) opens possibilities for a probable population contiguity between these degraded and distant (180 km) localities.

And the vital aspect of our finding is the persistence of *C. speciosus* in the mediocre remnant vegetation patches intermixed with anthropic land uses and even human habitation. Unlike the commensally *Hemidactylus* geckoes, *C. speciosus* being a strictly terrestrial gecko, gets affected and displaced by habitat loss by building construction. So it has been rightly assessed as an endangered species (Achyuthan et al. 2021). Related congeners were also reported to occur near cities, viz., *C. collegalisensis* near Mysuru, *C. srilekhae* near Bengaluru, *C. chengodumalaensis* near Kozhikode, *C. irulaorum* near Chennai, and *C. varadgirii* near Mumbai (Agarwal 2016; Agarwal et al. 2016, 2023a,b).

Hence the presence of *C. speciosus* near Coimbatore is consistent with previous such observations. Regarding other aspects of natural history, Guptha (1998) recorded this species (as *Geckoella collegalisensis*) based on an adult and a juvenile seen on 11 October 1997 in the rocky outcrops of Anaikatti slopes (600–700 m). In our case juveniles were seen somewhat earlier, in early August, more or less coinciding with the reported observation (Guptha 1998). This indicates a breeding population of *C. speciosus* in peri-urban common lands of Coimbatore, warranting more such surveys in nearby places to accord greater protection and scientifically-informed management to such remnant habitat patches.

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