Asian Journal of Conservation Biology, July 2018. Vol. 7 No. 1, pp. 28-45 AJCB: FP0092
ISSN 2278-7666 ©*TCRP* 2018

Herpetofauna of Southern Eastern Ghats, India – II From Western Ghats to Coromandel Coast

S.R.Ganesh[1]*, A. Kalaimani[2], P. Karthik[2], N. Baskaran[2], R. Nagarajan[2] & S.R.Chandramouli[3]

[1]*Chennai Snake Park, Chennai - 600 022, Tamil Nadu, India.*
[2]*Dept. of Zoology, Divn. of Wildlife Biology, A.V.C College, Mannampandal - 609 305, Mayiladuthurai, Tamil Nadu, India.*
[3]*Dept. of Ecology & Environmental Sciences, School of Life Sciences, Pondicherry University, Puducherry - 605 014, India.*

(Accepted : June 30, 2018)

ABSTRACT

We surveyed for herpetofauna along the poorly-explored sections of Southern Eastern Ghats. This 1000 hours-long large scale survey covered ranges stretching from near Western Ghats eastwards to the Coromandel Coastal Plains, across a longitudinal gradient. Study area consisting of the tall and wet Bilgiri-Melagiri massifs to the west and the low and dry South Arcot and North Arcot ranges to the east were selected and surveyed. We recorded a total of 95 species including 23 species of amphibians, 35 species of lizards and 37 species of snakes. A descriptive species accounts with photographic vouchers is presented. Noteworthy findings include significant new range records for many wet-zone taxa and a few dry-zone taxa from hitherto fore under-surveyed regions. This includes many rare and range-restricted ones and newly described little-known taxa. The study highlights the importance of landscape-level, long-term fieldwork to unravel the hidden diversity of tropical montane regions like the Eastern Ghats.

Key words: amphibians, dry zone, ecoregion, lizards, peninsular India, snakes, wet zone.

INTRODUCTION

The Eastern Ghats hill range in peninsular India is poorly-known in terms of biodiversity (Mani, 1974), particularly on elusive taxa such as herpetofauna (Aengals *et al.*, 2011; Dinesh *et al.*, 2009). The latest comprehensive treatment to the Southern Eastern Ghats herpetofauna was a study that worked on diversity, distribution, assemblage and conservation status of the target taxa from Jawadi southwards to Sirumalai hills (Ganesh & Arumugam, 2015 ab, 2016 ab). But other parts of the Southern Eastern Ghats such as the taller and moist Bilgiri and Melagiri hills to the west as well as the lower and drier cluster of hill chains to the east of the studied region are in want of fresh surveys. Of late, newer studies in these regions brought forth interesting results.

Chandramouli *et al.* (2011), Ganesh *et al.* (2013b), Kalaimani *et al.* (2012), Braghavi *et al.* (2013) and Chandramouli & Kalaimani (2014) studied the Günther's toad *Duttaphrynus hololius*. Chandramouli *et al.* (2012) reported a new inland record of the Bibron's skink *Eutropis bibronii*. Kalaimani & Nath (2012, 2013) and Kalaimani (2015) studied the ecology of golden gecko *Calodactylodes aureus*. Aengals & Ganesh (2013), Vogel & Ganesh (2013), Ganesh *et al*. (2013a, 2014), Ganesh & Ramanujam (2014) and Smart *et al.* (2014) reported on enigmatic and new species of snakes. Agarwal *et al.* (2016) redefined and redescribed two enigmatic ground geckoes (*Cyrtodactylus*) and Agarwal (2016) described two new species in this genus. Priti *et al.* (2016) described a new bush frog *Raorchestes honnametti*. Seshadri *et al.* (2016) re-described another little-known frog *Microhyla sholigari*. Dahanaukar *et al*. (2017) clarified the systematics of the burrowing frog *Sphaerotheca pluvialis*. Ganesh *et al*. (2017b) clarified the nomenclature of the paddy-field frog *Fejervarya agricola*.

However, the complete diversity of herpetofauna of these under-surveyed hill ranges still remains unknown. To fill up this lacuna we conducted herpetological surveys targeting the under-surveyed parts of the Southern Eastern Ghats from the western to the eastern extremities of this landscape across a longitudinal gradient spanning from the Western Ghats to the Coromandel Coast.

STUDY AREA

The study area falls within the Southern Eastern Ghats (11.50°–13.30°N 77.10°–80.00°E; 1750 m asl) representing its entire longitudinal span of 350 km from the borders of the Western Ghats to that near the Coromandel Coastal Plains. This part of Eastern Ghats, though small and disjunct, contains tall and moist hills in addition to lower and drier hillocks (see Daniels & Ishwar, 1994; Jayakumar *et al.*, 2008; Ganesh & Arumugam, 2016). The site selection protocol for field surveys follows Ganesh (2016) in using a combination of factors such as contemporary forest cover, river barriers and presence of tall peaks to fully factor-in the heterogeneity of this landscape. The select massifs (Fig. 1) are: Bilgiri (11.55–11.95°N 77.00–77.70°E), Melagiri (12.00–12.50°N 77.40–78.00°E), North Arcot hill

*Corresponding Author's E-mail: snakeranglerr@gmail.com

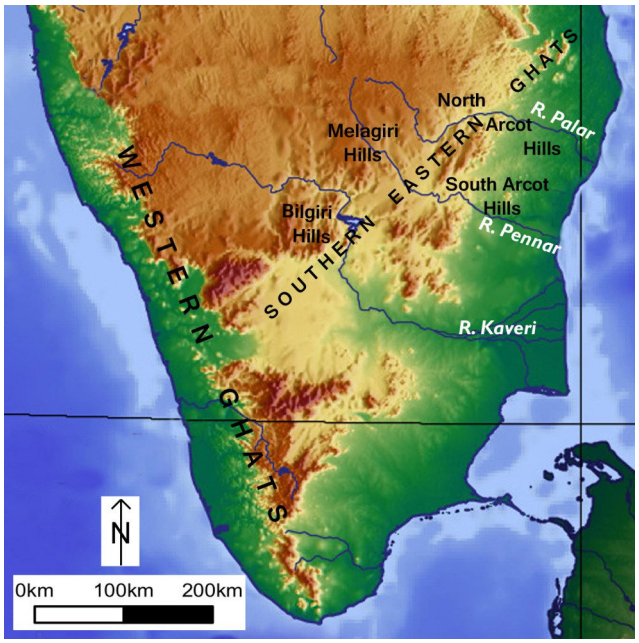

Figure 1. Physical map of southern India showing relief features, with the surveyed ranges and the nearby rivers named.

complex (12.60–13.30°N 78.55–80.07°E), South Arcot hill complex (12.10–12.40°N 78.60–79.50°E), all politically situated in Tamil Nadu.

The westernmost of the surveyed massifs is the Bilgiri range abutting the Moyar gorge adjacent to Nilgiris of the Western Ghats. Bilgiri hills top at 1750 m asl (Attiken) situated at northwestern part; and the tallest point in the surveyed areas is Kambatrayangiri (1650 m asl). Bilgiri hills sprawl eastwards as Guthiyalathur, Gundri and Bargur plateaus, again peaking at Malliamman Durgam (1510 m asl) and Kongadai (1540 m asl) before dropping steeply at Mettur or Stanley river. The hill chains continue northeastwards across Hogenakkal and Billgundala up to Bangalore plateau, as the Melagiri hills. Melagiris top at 1390 m asl (Guthirayan peak) and continues eastwards as Anchetty and Denkanikotta hills before ending at Krishnagiri reservoir. This large chunk of Bilgiri-Melagiri hill complex extending around 150 km east-west is the westernmost massif of the Eastern Ghats.

Further east, across the tall and wet Yelagiri-Jawadi massif, lie the low, dry, scattered series of smaller isolated hills of the North Arcot and South Arcot hill complexes. These hills were herein conveniently named so, after their provincial localities to refer to a wider aggregation of numerous hillocks. North Arcot hill complex include those abutting the banks of Palar river (12.65–12.95°N), westwards from Maharaja Kadai all the way eastwards to Chengelpet hills. The tallest peak of this complex is Peranambut (at 625 m asl) in the west, to near Thiruthani (at 525 m asl) in the east, within the surveyed areas. South Arcot hill complex include those abutting the banks of Then Pennai river (12.10–12.50° N), westwards from Harur-Tirthamalai eastwards upto Gingee. The tallest peak within the surveyed areas is Tiruvannamalai (at 770 m asl).

The dominant natural climax vegetation type of the region ranges from scrub forest in the plains (< 300 m asl), dry deciduous forests in the low elevation (301–600 m asl), moist deciduous forests in the mid-elevation (601–900 m asl) and evergreen forests in the high elevation (> 901 m asl) (after Champion & Seth, 1968). The climate is distinctly seasonal, with dry (January–March), hot (April–May) and wet (June–December) seasons. The region receives parts of southwest (June-September) and northeast monsoon rains (October–December) depending on the longitudinal positioning. In the mid-elevation (600 m asl) zones, average annual rainfall ranges 200–900 cm and diurnal air temperature ranges 27–33°C.

MATERIALS & METHODS

We used Diurnal Time-Constrained Search Method (DTCS, after Ribiero-Junior *et al.*, 2008) and Nocturnal Visual Encounter Survey Method (VES, after Crump & Scott, 1994) for primary field data collection. Fieldwork was conducted in bouts between 2009 and 2016 across all seasons. We used Google Maps, Google Earth and DIVA-GIS software to find out the aforesaid parameters. Total fieldwork amounts to 1000 man hrs and was distributed across regions judging by their land area, elevation and other complexities. A total of 300 man hours of field work was conducted in Bilgiri, 300 h in Melagiri, 200 h in North Arcot hill complex and 200 h in South Arcot hill complex. Within this landscape, 50 study sites were identified and earmarked for surveys and around 20 man hours of fieldwork was conducted per site. Opportunistic observations and secondary evidences particularly of snakes, were also considered to build a comprehensive species inventory. Most of the surveys were during daytime and some short-surveys were conducted during nights, mainly in and around camping sites and inside estates.

Individuals of the target taxa sighted were morphologically examined for identification and photographed in situ to serve as vouchers. No specimen was collected for preservation and deposition in museums, owing to lack of collection permits. Morphological data were scored from live individuals that were gently restrained. Morphometric terminologies, definitions and data collection protocols follow Dutta & Manamendra-Arachchi (1996) for amphibians, Somaweera & Somaweera (2009) for lizards and Whitaker & Captain (2004) for snakes, except for ventral counts of anilioid snakes that were counted after Gower & Abblett (2006). Number of animals examined among those that were sighted is mentioned here as 'n' (sample size). Morphological details of the examined animals were compared to published keys and books to identify species. Species that only partially conform to published species boundaries are represented with a 'cf.' prefix. Such taxa are kept non-conspecific from the respective nominate taxa by excluding them from chresonymy and distribution. For juveniles fewer measurements were scored to alleviate stress. Species richness was estimated using *Estimate S* software (Colwell *et al*., 2004).

SPECIES ACCOUNTS

A total of 95 species of herpetofauna consisting of 23 species of amphibians, 35 species of lizards and 37

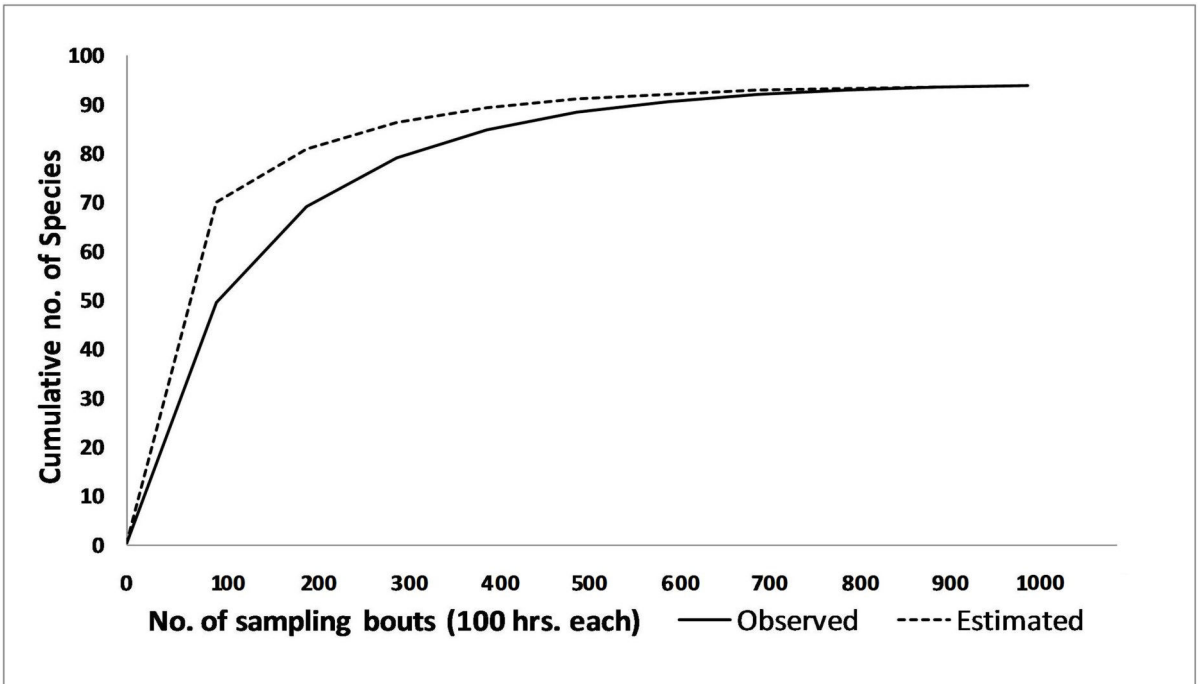

Fig. 2. Species-accumulation curves plotted against no. of samples and no. of species, depicting both the observed (normal line) and estimated (dotted line) values.

species of snakes were observed during the 1000 man hour-long survey. Species-accumulation curves reveal that our sampling is adequate to bring out the complete picture of herpetofauna of this region. While the observed no. of species is 95, the estimated no. of species is 97.3, that is not far from the observed value. Our graph (Fig. 2) shows that though in the beginning of the survey the estimated (dotted line) richness is higher than observed (normal line) richness, as the survey effort progresses, they reach plateau stage and both the curves coincide well. Out of these, around half (ca. 50%; n=43; Figs. 3–6) of the species were range-restricted taxa, many of which also require further taxonomic resolution. The rest of species were represented by widespread ones, many of which also occur in and around human settlements. The following taxonomic checklist furnishes details of the species recorded.

AMPHIBIA

BUFONIDAE

1. *Duttaphrynus melanostictus* (Schneider, 1799)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

2. *Duttaphrynus scaber* (Schneider, 1799)
Morphology (n=5): Snout-vent length: 28–34, head length: 10–12.5, head width: 11–15, head depth: 6.5–9, body width: 15–21, axilla-groin distance: 18–28, fore limb length: 15–21, hind limb length: 32–50. Skin very pustular and warty; top of head with bony cephalic ridges; paratoid gland rounded; dorsally light to dark yellowish brown, most warts often tipped with black; thickened row of black warts across the orbit and canthus rostralis; snout shorter than eye diameter; tympanum < 50% of eye diameter; sometimes a feeble vertebral stripe formed by light-coloured series of warts; mental and gular regions of adult males distinctly yellow; venter off-white; groin and inguinal pits dirty white; iris brownish yellow with a black horizontal pupil.
Recorded from: All study sites, below 700 m asl.

3. *Duttaphrynus hololius* (Günther, 1876)
Morphology (n=5): Snout-vent length: 47–54, head length: 13–15, head width: 8.5–11, head depth: 5.5–7.5, body width: 11–14.5, axilla-groin distance: 25–30, fore limb length: 30–33, hind limb length: 54–60. Skin very smooth, seemingly wet and glandular; top of head without any cephalic ridges; paratoid gland bean–shaped; dorsally light to dark sandy brown, with some black, white and red glandular spots on the back; canthus rostralis distinct; loreal region concave; snout length subequal to eye diameter; tympanum less than eye diameter; sometimes a thin white mid-vertebral stripe from occiput to groin; mental and gular regions pale pinkish white; venter off-white; groin and inguinal pits pale pinkish white; iris brownish yellow with a black horizontal pupil.
Recorded from: Sennimalai, Sankagiri, Melagiri (Devarabetta, Krishnagiri, Maharaja Kadai), North Arcot and South Arcot hill complexes, 140–1200 m asl.

MICROHYLIDAE

4. *Uperodon systoma* (Schneider, 1799)
Specimens typical of the species.
Recorded from: All study sites.

5. *Uperodon taprobanicus* (Parker, 1934)
Specimens typical of the species.
Recorded from: All study sites.

6. *Uperodon variegatus* (Stoliczka, 1871)
Specimens typical of the species.
Recorded from: All study sites.

7. *Microhyla ornata* (Duméril, 1841)
Specimens typical of the species.

Recorded from: All study sites.

8. *Microhyla rubra* (Jerdon, 1854)
Specimens typical of the species.
Recorded from: All study sites.

9. *Microhyla sholigari* Dutta & Ray, 2000
Morphology (n=5): Snout-vent length: 14–16, head length: 3.5–4, head width: 3.5, head depth: 3.5, body width: 7–9, axilla-groin distance: 9–11, fore limb length: 9–11, hind limb length: 17–20. Dorsum light buff to muddy brown with bright black chevron markings; dark brown triangular mark across supraoculars converging posteriorly; continuing again as an anterior triangular or diamond-like pattern till vent; limbs of same colour, black-barred above; digit tips dilated into small but distinct swollen discs; venter rosy white; brick red palmar and plantar tubercles; single mid-gular vocal sac dusky brown to blackish; iris golden yellow with black circular pupil.
Recorded from: Bilgiri (Talamalai, Ittarai, Kali Dimbam) and Melagiri (Guthirayan) hills in high-elevation (> 1100 m asl) wet forests.

RHACOPHORIDAE

10. *Pseudophilautus* cf. *wynaadensis* (Jerdon, 1854)
Morphology (n=5): Snout-vent length: 21–27.5, head length: 6.5–11, head width: 6–12, head depth: 5–6.5, body width: 11–15, axilla-groin distance: 12–18, fore limb length: 9–11, hind limb length: 21–31; adpressed tibio-tarsal articulation reaches between eye and nostril. Skin smooth; supra–tympanic fold slightly evident; dorsally uniform whitish fawn to mild reddish brown; groin and inguinal pits unpatterned; a distinct black eye steak across postocular and supratympanic regions; iris golden above, darker below, with black horizontal pupil.
Recorded from: Bilgiri hills (Talamali plateau), in high-elevation (1000 m asl) wet forests.

11. *Raorchestes honnametti* Gururaja, Priti, Roshmi, Aravind, 2016

***Raorchestes* cf. *leucolatus* (*nec* Vijayakumar *et al.*, 2014) – Ganesh & Arumugam, 2016**
Morphology (n=5): Snout-vent length: 27–30, head length: 7–8.5, head width: 8.5–10, head depth: 7–8, body width: 9–12, axilla-groin distance: 20–26, fore limb length: 5–8, hind limb length: 16–20; adpressed tibio-tarsal articulation reaches between tympanum and eye. Skin mildly granular; supra-tympanic fold slightly evident; a dark eye-streak sometimes evident; dorsally ivory yellow with a brown more or less X-shaped marking on back extending from occiput to loin; numerous dark brown marblings on back, post-orbital, tympanic and lateral regions; a light interocular bar sometimes evident; venter dirty white with mild brown marblings; groin and inguinal pits dark brown with creamy white spots; limbs barred with brown; iris golden yellow, with black horizontal pupil.
Recorded from: Bilgiri hills (Talamalai, Ramar Anai), atop evergreen hill forests.

12. *Polypedates maculatus* (Gray, 1839)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

DICROGLOSSIDAE

13. *Euphlyctis hexadactylus* (Lesson, 1831)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

14. *Euphlyctis cyanophlyctis* (Schneider, 1799)
Morphology : Specimens typical of the species.
Recorded from: All study sites.

15. *Hoplobatrachus tigerinus* (Daudin, 1803)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

16. *Fejervarya agricola* (Jerdon, 1853)
Morphology: Specimens typical of the species.
Recorded from: All study sites.
Remarks: Ganesh *et al*. (2017b) worked out the taxonomy and nomenclature of this species.

17. *Fejervarya* cf. *caperata* Kuramoto, Joshy, Kurabayashi, Sumida, 2008
Morphology (n =5): Snout-vent length: 31–35, head length: 9–11, head width: 9–11, head depth: 6–8, body width: 12–15, axilla-groin distance: 15–18, fore limb length: 16–20, hind limb length: 55–75; adpressed hindlimb reaching snout–tip. Skin rugose, with four parallel longitudinal glandular striations on the back; dorsum olivaeous, with some dark and light marblings; a white mid–dorsal stripe from snout to groin often present; limbs often barred with darker shade; fingers webbed at base, toes 3/4 webbed; venter and lateral regions yellowish white; iris brown, with a black rhomboid pupil.
Recorded from: Bilgiri (Talamalai, Dimbam) hills.

18. *Fejervarya* cf. *mudduraja* Kuramoto, Joshy, Kurabayashi, Sumida, 2008
Morphology (n =5): Snout-vent length: 40–44, head length: 12–15, head width: 12–15, head depth: 9–13, body width: 17–22, axilla-groin distance: 18–22, fore limb length: 20–26, hind limb length: 70–90; adpressed hindlimb reaching snout-tip. Skin rugose, with many globular tubercles; dorsum olivaeous with white and black marblings; a very thin white mid–dorsal line down the back often present; dark bars present between orbits, on labia and limbs; fingers webbed at base, toes 3/4 webbed; venter and lateral body parts yellowish white; iris brown, with a black rhomboid pupil.
Recorded from: Western parts of the region, in Talamalai hills, in hill streams and rivulets.

19. *Fejervarya* cf. *nilagirica* (Jerdon, 1853)
Morphology (n =5): Snout-vent length: 48–53, head length: 15–21, head width: 16–19, head depth: 10–16, body width: 20–24, axilla-groin distance: 25–32, fore limb length: 27–33, hind limb length: 85–110; adpressed hindlimb reaching snout. Skin very pustular, with numerous tubercles and warts, both globular and elongate; dorsum dark olivaceous, with distinct yellow marblings on the many warts; a yellowish white vertebral stripe from prefrontal to groin present or absent; limbs often barred with darker shade; adpressed hindlimb surpassing snout–tip; fingers 1/3 webbed, toes 3/4 webbed; venter and lateral regions, especially along lower lips, mid trunk, thigh and lower hindlimbs yellow; iris fawn brown, with a

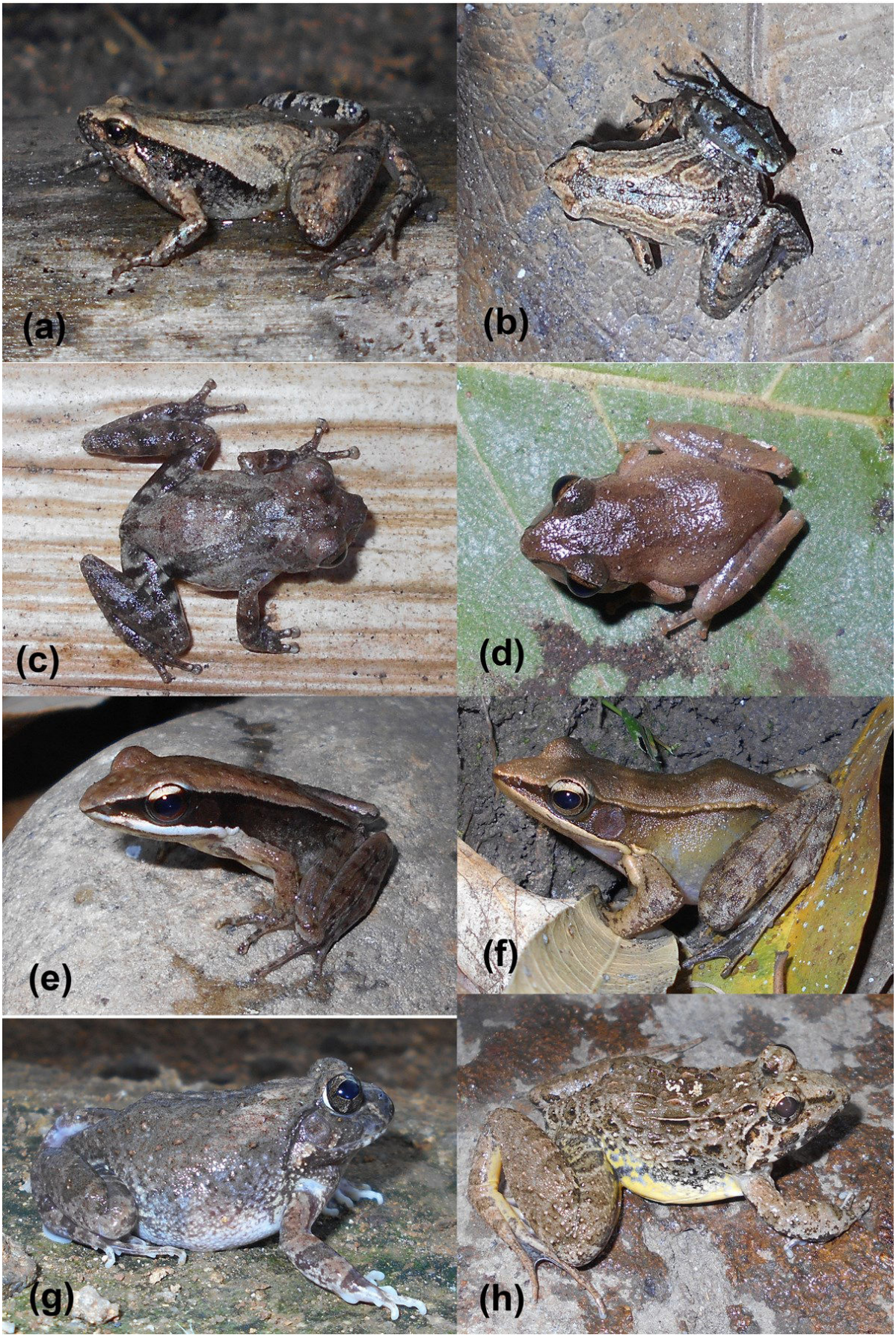

Fig. 3. Some range-restricted amphibians: (a) & (b) *Microhyla sholigari*, (c) *Raorchestes honnametti*, (d) *Pseudophilautus* cf. *wynaadensis*, (e) & (f) *Indosylvirana* sp. (male & female), (g) *Sphaerotheca pluvialis*, (h) *Fejervarya* cf. *nilagirica*.

black rhomboid pupil.
Recorded from: Bilgiri (Talamalai, Dimbam, Kali Dimbam, Ramar Anai, Ittarai) and Melagiri (Spider Valley, Kodagarai, Guthirayan hills).

20. *Sphaerotheca breviceps* (Schneider, 1799)
Specimens typical of the species.
Recorded from: All study sites.

21. *Sphaerotheca rolandae* (Dubois, 1983)
Specimens typical of the species.
Recorded from: All study sites.

22. *Sphaerotheca pluvialis* (Jerdon, 1853)
***Sphaerotheca* cf. *dobsoni* (non Boulenger, 1882) – Ganesh & Arumugam, 2016**
Morphology (n =5): Snout-vent length: 52.5–58, head length: 20.5–23.5, head width: 20–22.5, head depth: 12–17, axilla-groin distance: 30–35.5, body width: 21–25.5, fore limb length: 27–33.5, hind limb length: 61–72, adpressed tibio-tarsal articulation reaches tympanum. Skin dorsally smooth scattered with a few granular rounded warts on trunk and limbs, ventrally smooth except near thighs and groin that are granular; supratympanic fold evident. Dorsum ashy brown, often with a thin yellow mid–dorsal stripe fully across the trunk; sides of head brown with off-white spots in loreal and labial parts; limbs similar to trunk color above, with darker bars; femur and groin dark gray with yellow reticulations; venter white, adult males with black vocal sacs; laterally paler grey, mottled with white spots; iris golden above, darker below, with a black rhomboidal pupil.
Recorded from: Bilgiri, Melagiri, North Arcot and South Arcot hill complexes, in mid-elevation riverine forests.
Comments: This population was represented as *Sphaerotheca* cf. *dobsonii* by Ganesh & Arumugam (2016). Studies by Dahanaukar *et al*. (2017) proved it to be distinct: *S. pluvialis*.

RANIDAE

23. *Indosylvirana* sp.
Morphology (n =5): Snout-vent length: 44–77, head length: 17–27, head width: 11–19, head depth: 7–13, body width: 17–28, axilla-groin distance: 26–47, fore limb length: 20–48, hind limb length: 100–122. Skin fairly smooth all over, slightly granular around limb insertions; dorsally brown with two yellow dorsolateral skin folds extending from eye to beyond loin; laterally of a darker shade, more so in males; adult females of a uniform color dorsolaterally; limbs often with dark bars; adpressed hindlimb reaches orbit; fingers not webbed; toes 3/4 webbed; underside creamy white, anteriorly with small dark specklings; iris yellowish atop, darker below, with a black oval pupil.
Recorded from: Bilgiri (Talamalai, Ittarai, Dimbam) hills.

REPTILIA

SQUAMATA

GEKKONIDAE

24. *Cnemaspis otai* Das & Bauer, 2000
Morphology (n=5): Snout-vent length: 28.5–33; tail length: 31–25 head length: 6.2–8.5; head width: 5.5–6.2; head depth: 3–3.7; body width: 6–7.8; axilla-groin distance: 10.8–13.8; fore limb length: 6.4–9; hind limb length: 7.3–10.2. Dorsal scales of varying sizes, smaller laterally on trunk; beset with small, sparsely-spaced smooth tubercles; no spine-like tubercles on flanks; supralabials 7; postmentals touching each other, each bordered by three scales; nostril separated from 1st supralabial; midventrals 19–23; ventrals smooth, imbricate posteriorly on trunk; preanal pores 4, femoral pores 3 on each thigh; 4th toe subdigitals 14–16; caudal scales larger, subcaudals wide, as broad as tail. Dorsum brownish grey, with paler irregular vermiculations; three pairs of black paravertebral cross bars often confluent vertebrally; circumorbitals distinctly yellow; yellowish vertebral stripe from nape to sacrum; a large black nuchal spot; tail and limbs, of the same colour as body above, with small thin black bars; head straw-coloured, darker in younger specimens; labial, temporal, gular and orbital regions with thin black streaks; venter off-white, unpatterned; iris yellowish grey, with black circular pupil.
Recorded from: North Arcot hill complex (Tiruttani, Vellore, Gudiyattam, Ambur) and South Arcot hill complex (Gingee, Vandavasi, Tiruvannamalai, Sattanur Dam).

25. *Cnemaspis* cf. *gracilis* (Beddome, 1870)
Morphology (n=10): Snout-vent length: 26–29, tail length: 35–38, head length: 7.5–9, head width: 4–5, head depth: 3.5–4, body width: 5–6, axilla-groin distance: 13–16, fore limb length: 6–8, hind limb length: 8–10. Dorsal scales heterogenous, intermixed with protruding spiny tubercles, both on body and tail, tail with regular series of tubercles arranged in circular whorls; postmentals in contact with each other; preanal pores 2, femoral pores 4 on each thigh; 4th toe subdigitals 19–22; subcaudals on original tail hexagonal along median series, flanked by similar rows. Dorsum olivaceus grey in females and orangish brown in males, with a few black spots on nape and forebody; lateral parts of trunk and the dorsal tubercles grey; labia mottled with grey and yellow, with black radiating eye streaks; circumorbital scales distinctly yellow, mainly in adult males; venter off-white, subcaudals orangish in adult males; iris brown with black circular pupil.
Recorded from: Bilgiri (Talamalai), Sankagiri hills, Krishnagiri hills.

26. *Cnemaspis mysoriensis* (Jerdon, 1853)
Morphology (n=15): Snout-vent length: 23–25, tail length: 31–34, head length: 6–8, head width: 3.5–4.5, head depth: 4, body width: 4–5, axilla-groin distance: 12–15, fore limb length: 5–7, hind limb length: 7–9. Dorsal scales intermixed with larger spiny tubercles, both on body and tail, tail with enlarged circular whorls of tubercles; postmentals separated by a single scale; preanal pores 9, femoral pores 4 on each thigh; 4th toe subdigitals 13–15; subcaudals on original tail hexagonal, slightly larger than flanking rows, smaller proximally and larger distally. Dorsum light grey, with a few yellow and brown spots; lateral parts of trunk and the dorsal tubercles yellowish; yellow vertebral stripe from occiput to tail often present; labia mottled with grey and yellow, with black radiating eye streaks; venter off–white, iris brown with black circular pupil.
Recorded from: Bilgiri (Gundri) and Melagiri (Devarabetta, Denkanikotta, Aiyur, Biligundla) and North Arcot hills (Yelagiri).

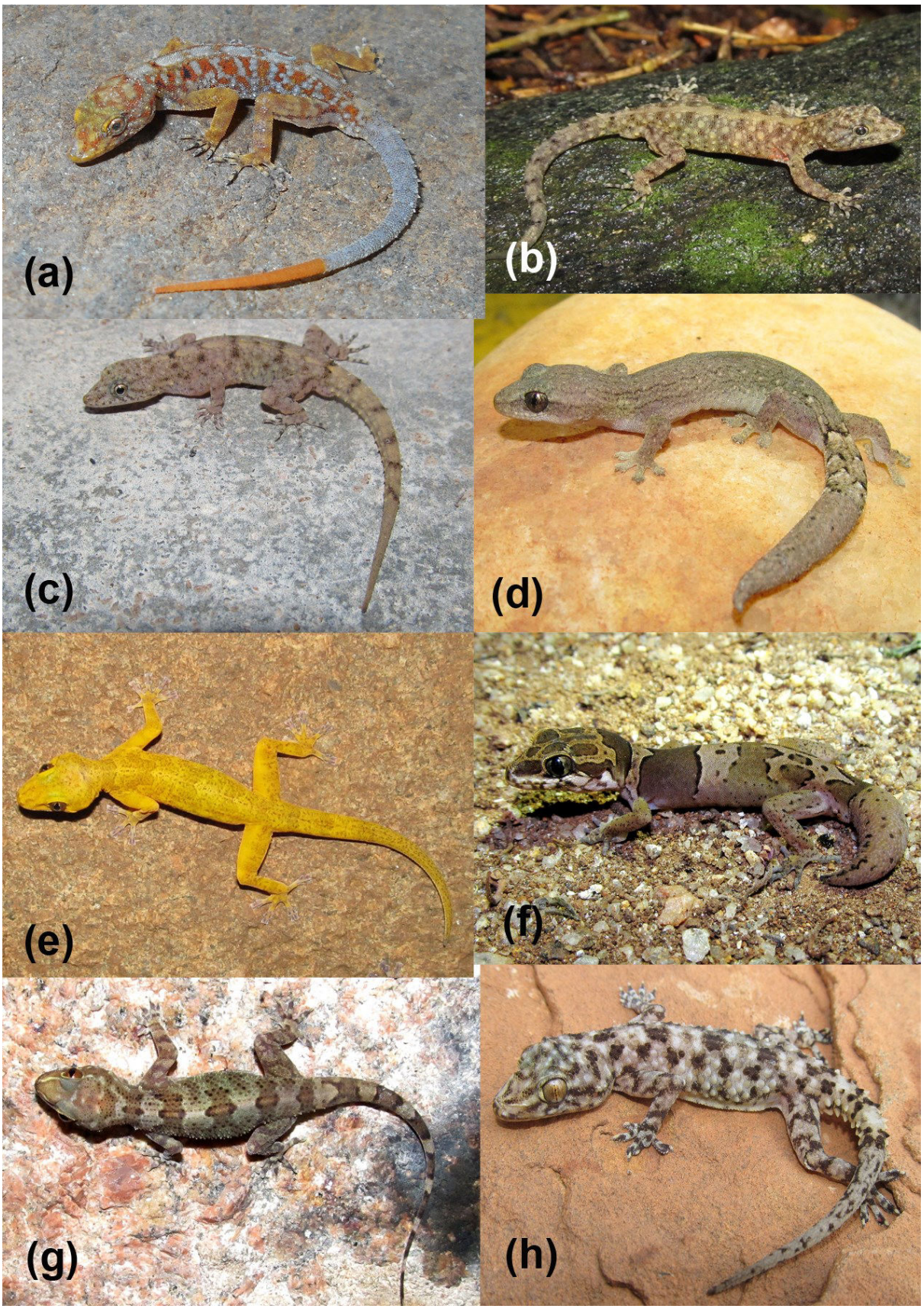

Fig. 4. Some range-restricted lizards: (a) *Cnemaspis* cf. *gracilis*, (b) *Cnemaspis mysoriensis*, (c) *Cnemaspis otai*, (d) *Hemiphyllodactylus* cf. *aurantiacus*, (e) *Calodactylodes aureus*, (f) *Cyrtodactylus srilekhae*, (g) *Hemidactylus graniticolus*, (h) *Hemidactylus* cf. *treutleri*.

27. *Hemidactylus frenatus* Schlegel, 1836
Morphology: Specimens typical of the species.
Recorded from: All study sites.

28. *Hemidactylus murrayi* Gleadow, 1887
Morphology: Specimens typical of the species.
Recorded from: Bilgiri & Melagiri hills, in and around buildings.

29. *Hemidactylus parvimaculatus* Deraniyagala, 1953
Morphology: Specimens typical of the species.
Recorded from: North Arcot, South Arcot & Krishnagiri hills, in and around buildings.

30. *Hemidactylus leschenaultii* Duméril & Bibron, 1836
Morphology: Specimens typical of the species.
Recorded from: All study sites.

31. *Hemidactylus triedrus* (Daudin, 1802)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

32. *Hemidactylus* cf. *gleadowi* Murray, 1887
Morphology (n=10): Snout-vent length: 55–75, tail length: 59–71, head length: 13.5–17, head width: 10–12.5, head depth: 5.5–7, body width: 10.5–14, axilla-groin distance: 23–26.5, fore limb length: 14–17.5, hind limb length: 18–21.5. Dorsal scales warty with large tubercles, both on body and tail; (original) tail with enlarged circular whorls of tubercles; mid-dorsal tubercles subequal to but not larger than tympanic hole; postmentals separated by a single scale; preanofemoral pores 20–28, often fully conjoined or separated by a single scale; 4th toe subdigitals7–8, ending well before toe base; subcaudals on original tail horizontally elongate, flanked by smaller series on both sides. Dorsum pale brown with dark coffee brown spots; some white mottling also present; a discontinuous ocular streak extending from loreal to postocular region; labia mottled with brown and white; venter off-white, iris brown with black vertical pupil.
Recorded from: Bilgiri (Gundri) and Melagiri (Denkanikotta) hills, in mid-elevation drier forest belts across rocky boulder-dominated terrain.

33. *Hemidactylus* cf. *treutleri* Mahony, 2009
Morphology (n=15): Snout-vent length: 58–71, tail length: 60–73, head length: 16–18.5, head width: 13–15, head depth: 6.5–7.5, body width: 14–15.5, axilla-groin distance: 23.5–28, fore limb length: 15–17, hind limb length: 17.5–20. Dorsal scales distinctly warty, intermixed with serrated tubercles; mid-dorsal tubercles as large as or larger than tympanic hole; bearing a distinct keel; postmentals separated by 4–5 scales; preanofemoral pores 20–28 separated by 5–7 pore–less scales; 4th toe subdigitals 7–9, ending well before toe base; subcaudals on original tail horizontally elongate, flanked by smaller series on both sides. Dorsum brown with distinct dark brown and white spots; a prominent patch of white spots on forehead; white spots more numerous than dark brown spots; tail with alternating brown and white cross bars or bands.
Recorded from: South Arcot, North Arcot and eastern parts of Melagiri (Krishnagiri) hills, predominantly in lower rocky slopes within drier zones. Found inside rock crevices and boulders. Not seen in human habitations.
Chengelpet hills adjoining the Coromandel Coast.
Comments: This southerly population differs from the topotypical animals from Hyderabad plateau in their number of femoral pores and intermediate pore-less scales, thereby warranting further taxonomic work to assess the status.

34. *Hemidactylus graniticolus* Agarwal, Giri & Bauer, 2011
Morphology (n=10): Snout-vent length: 70–108, tail length: 72–111, head length: 20–29, head width: 14–21.5, head depth: 8.5–13.5, body width: 15–26.5, axilla-groin distance: 30–46, fore limb length: 21–27, hind limb length: 25.5–30.5. Dorsal scales warty, intermixed with large trihedral tubercles; large series of tubercles disposed from parietal till sacral region; also present on dorsal part of hind limbs; smaller series of such tubercles on lateral most aspects of trunk; tubercles on original tail arranged in circular whorls; postmentals 2 pairs; preanofemoral pores 22–24 separated medially be 2–3 pore–less scales; 4th toe subdigitals 12–14; subcaudals on original tail horizontally elongate, flanked by smaller series on both sides. Dorsum ashy brown with alternate lighter and darker trapezoid blotches vertebrally; eye streaks of the same colours, often confluent behind, in the occiput; pattern very bright and distinct in young ones, becoming faint and obscure with age; venter creamy white in adults, white in young ones; iris brown with reddish vertical pupil.
Recorded from: The entire region, from Talamalai plateau till Chengelpet hills adjoining the Coromandel Coast.

35. *Hemidactylus* cf. *giganteus* Stoliczka, 1871
Morphology (n=5): Snout-vent length: 68–90, tail length: 75–98, head length: 20.5–25.5, head width: 14–17.5, head depth: 7.5–10, body width: 16.5–21.5, axilla-groin distance: 27.5–37.5, fore limb length: 20.5–27, hind limb length: 25.5–29. Dorsal scales smooth and very minute, densely packed, without any warty tubercles and spinules; labia 13–14; postmentals 2–4 pairs; preanofemoral pores 26–28, separated by 5–6 poreless scales; 4th toe subdigitals 15–17; subcaudals on original tail lozenge-shaped, elongate. Dorsum ashy grey to brown with a series of lozenge shaped white, black-edged spots down the back from frontal till the sacral region; a series of similar coloured ragged, zig-zag annuli on tail and dorsal parts of limbs and digits; venter dirty white; iris brownish yellow with black vertical pupil.
Recorded from: North Arcot and Krishnagiri hill complexes. In this landscape, absent in rock boulders south of Palar watercourse near about Vaniyambadi. However, some individuals superficially resembling this taxon, were seen inside caves of Erode hills (Sennimalai).
Comments: Smith (1935) remarked on differences in dorsal scalation of the southerly population (from Cuddapah), which warrants detailed taxonomic investigation of this population.

36. *Hemidactylus reticulatus* Beddome, 1870
Morphology: Specimens typical of the species.
Recorded from: Erode and Salem ranges (Sennimalai, Sankagiri, Tirthamalai, Parvathamalai, Harur), North Arcot (Ambur, Vellore, Thiruthani, Chengelpet) and South Arcot (Tiruvannamalai, Vandavasi) hills.
Comments: Also see Ganesh *et al.* (2017a) for

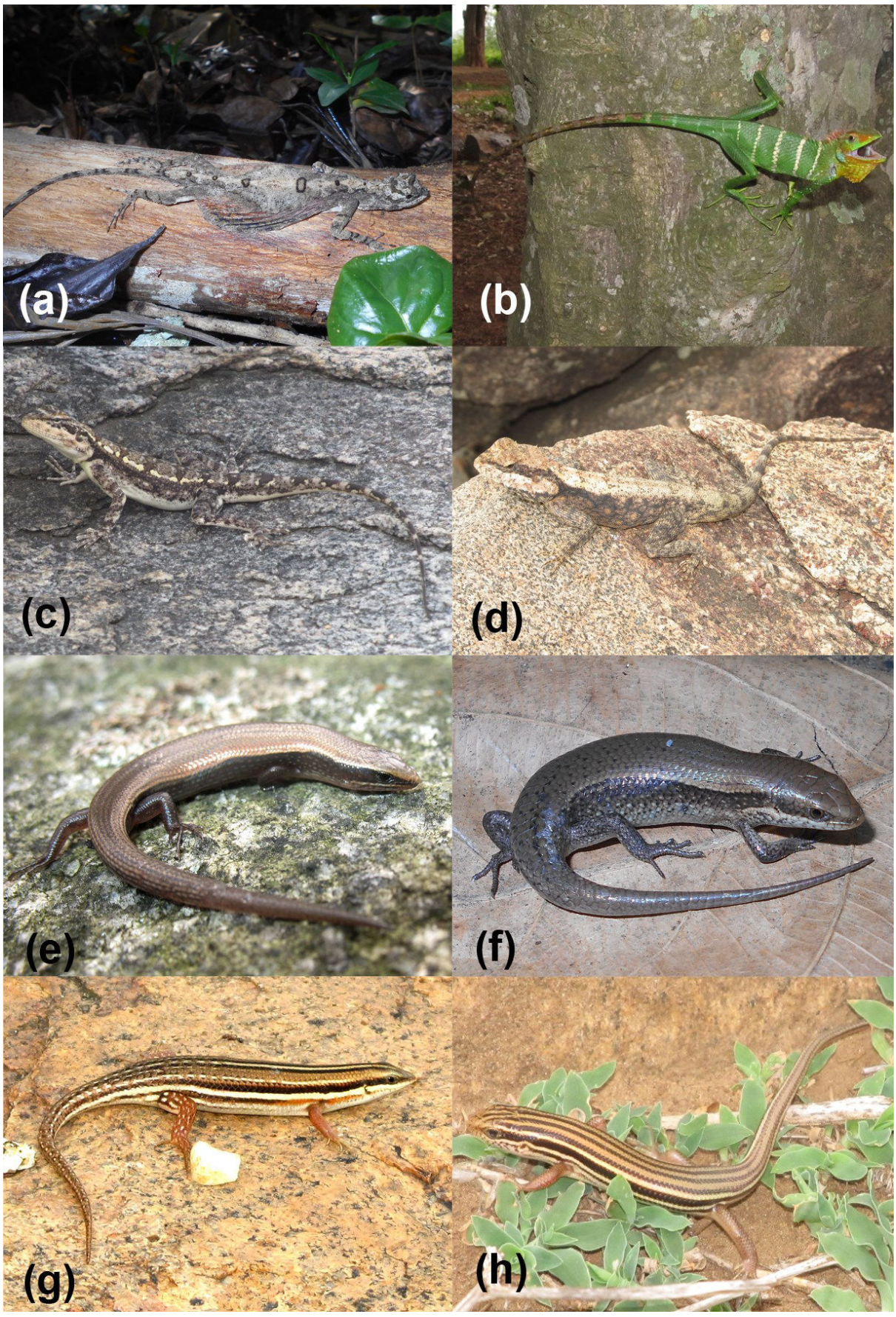

Fig. 5. Some range-restricted lizards: (a) *Draco dussumierii*, (b) *Calotes calotes*, (c) *Psammophilus dorsalis*, (d) *Psammophilus* cf. *blanfordanus*, (e) *Lygosoma pruthi*, (f) *Eutropis allapallensis*, (g) *Eutropis* cf. *bibronii*, (h) *Eutropis beddomei*.

populations from Chengelpet ranges.

37. *Calodactylodes aureus* (Beddome, 1870)
Morphology (n=14): Snout-vent length: 60.5–73, tail length: 72–92, head length: 16.2–22.7, head width: 10.5–13.5, head depth: 8.5–10.5, body width: 9.5–13, axilla-groin distance: 40.5–45, fore limb length: 28.5–33.5, hind limb length: 37.5–42.5. Dorsal scales small, smooth, homogenous, those on trunk with a few larger scales; postmentals disintegrated, similar to size of gular scales; subcaudal scales larger than those on dorsum of tail; digits with double (except innermost that has one) series of trapezoidal expansions on either side; 4th toe subdigitals 10–12. Dorsum brownish gray with feeble large dark brown blotches and wavy bars, giving a variegated appearance, dorsal body and throat brilliant golden yellow in nuptial males; venter straw coloured in nuptial males, buff to off-white in females and young ones; limbs barred with darker shade; iris brown with a black slit-like, vertical pupil.
Recorded from: North Arcot, South Arcot hill complexes and Krishnagiri hills. In this landscape, absent west of Krishangiri reservoir (of Palar river) and south of Hanuman tirtham watercourse (of Thenn Pennaiyar river), near Harur-Tirukoilur area.

38. *Cyrtodactylus srilekhae* Agarwal, 2016
Morphology (n=4): Snout-vent length: 45–51, tail length: 28–37, head length: 12.5–13.5, head width: 8–10, head depth: 5–6, body width: 9–11, axilla-groin distance: 20–25, fore limb length: 8.5–11, hind limb length: 10–12.5. Dorsal scales rather uniform, small and coarse; two pairs of large postmentals, anterior pair touching one another, posterior pair separated by 5–6 scales; anterior pair twice the size of posterior; supralabials 9–10; infralabials 10; midventrals 31–39; preanofemoral pores absent; 4th toe subdigitals 16–18; subcaudals imbricate, larger than ventral scales. Dorsum chocolaty brown to grey; top of head with 5–6 dark spots – 3 parietal, 2 supraocular, 1 internasal, 1 rostral spots, all bordered by white markings; a similar white, black-bordered collar band on nape; trunk with three transverse, white, black-bordered ocellated cross bars; the median bar often wavy and irregular, sometimes confluent with posterior bar on the sacrum; labia white with black streaks; venter rosy white, gular, ventro-lateral and subcaudals parts with brown streaks.
Recorded from: Melagiri (Guthirayan, Biligundla).

39.*Hemipyllodactylus* cf. *aurantiacus* (Beddome, 1870)
Morphology (n=3, females): Snout-vent length: 32–38, tail length: 22–30, head length: 7–9, head width: 5–6, head depth: 3, body width: 5–7, axilla-groin distance: 16–22, fore limb length: 5–7, hind limb length: 6–8. Dorsal scales smooth, small, uniform; trunk elongate; tail stumpy, robust, swollen basally, abruptly tapering to tip; postmentals disintegrated, indistinguishable from gular scales; 4th toe subdigitals 6. Dorsum rosy brown or flesh coloured, with zig-zag irregular brown bars and striations; venter off-white powdered finely with brown dots; tail wavy dark and light annuli on top, subcaudals bright scarlet orange; iris golden with black, vertical slit–like pupil.
Recorded from: Bilgiri (Gundri), Melagiri (Hosur, Guthirayan) hills.

LYGOSOMIDAE

40. *Lygosoma pruthi* (Sharma, 1977)
Morphology (n = 5): Snout-vent length: 32–48, tail length: 30–50, head length: 5.5–8.5, head width: 3.5–6, head depth: 2.5–4, body width: 5–10, axilla-groin distance: 20–35, snout-axilla distance: 12–20, fore limb length: 4–9, hind limb length: 5–11. Dorsum fawn brown, sometimes with mild darker series of spots resembling longitudinal stripes from nape to tail; a thick dark chocolate coloured wash on lateral regions, with mild white speckles; venter off-white, labia and throat with dark brown streaks and spots; supralabial with a distinct yellowish-white stripe; iris brown with black circular pupil. Nuptial males with a distinct yellow wash across neck. Subadults with bluish subcaudals.
Recorded from: Bilgiri, Melagiri and South Arcot (Gingee, Tirthamalai) hills.

41. *Lygosoma punctatum* (Linnaeus, 1758)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

MABUYIDAE

42. *Eutropis allapallensis* (Schmidt, 1926)
Morphology (n = 5): Snout-vent length: 46–49, tail length: 50.5–52, 23+? (tail cut), head length: 7.2–8.8, head width: 6.5–7.5, head depth: 4.5–6, body width: 8.8–10.7, axilla-groin distance: 25.6–27.7, fore limb length: 11–13.5, hind limb length: 15–18. Dorsal scales on mid-trunk with 5–7 keels; in 28–30 rows; supranasals separated or rarely just touching each other; postnasal present or absent; frontoparietals entire; 4th toe subdigitals 13–16. Dorsum chestnut brown, often with some scarce black dots; a thick wide, dusky brown stripe on flanks (blackish in adult males), beset with yellow dots; labia and throat scarlet red in nuptial males; venter bluish steely gray, sometimes yellowish in nuptial males; iris rosy brown, with black circular pupil.
Recorded from: Bilgiri, Melagiri hills, and North Arcot hill complex (Yelagiri).

43. *Eutropis beddomei* (Jerdon, 1870)
Morphology (n =5): Snout-vent length: 39–55.7, tail length: 44–64.5, head length: 10–13.6, head width: 6.2–8.8, head depth: 4–5.6, body width: 9.8–13.7, axilla-groin distance: 20–28.3, fore limb length: 10.5–14, hind limb length: 14–19. Dorsal scales feebly keeled each scale with 3–4 keels, in 30–32 rows; supranasals touching one another along entire midline; no postnasal; temporals smooth; frontoparietals divided; 4th toe subdigitals 12–16, clearly keeled. Dorsum yellowish to golden brown with distinct black stripes either fully on trunk or at least near nape and forebody (on very mature, large individuals); a pair of black vertebral stripes and a pair of black, white–bordered dorsolateral stripes; sides of body with a thick black band from face till tail; iris fawn brown with a black circular pupil.
Recorded from: Bilgiri (Dharmapuri, Pennagaram), Melagiri (Krishnagiri), North Arcot (Chengelpet, Ambur), South Arcot (Gingee, Tiruvannamalai) hills.

44. *Eutropis carinata* (Schneider, 1801)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

45. *Eutropis macularia* (Blyth, 1853)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

46. *Eutropis* cf. *bibronii* (Gray, 1839)
Morphology : See Chandramouli *et al.* (2012).
Recorded from: Melagiri hills (Sankagiri and Rasimanal).
Comments: Further taxonomic studies on this population are currently underway.

LACERTIDAE

47. *Ophisops leschenaultii* (Milne–Edwards, 1829)
Morphology: Specimens typical of the species (see Ganesh & Chandramouli, 2017).
Recorded from: Bilgiri (Guthialathur, Kadambur), Melagiri (Devarabetta, Thalli, Biligundla, Darmapuri, Pennagaram), North Arcot (Ambur, Gudiyattam, Vellimalai, Vellore, Tiruttani), South Arcot (Gingee, Sattanur, Tirthamalai, Tiruvannamalai) hills.

AGAMIDAE

48. *Sitana ponticeriana* Cuvier, 1829
Morphology: Specimens typical of the species.
Recorded from: Seen in all study sites in low elevation (< 500 m asl) fairly dry and open habitats.

49. *Calotes versicolor* (Daudin, 1802)
Morphology: Specimens typical of the species.
Recorded from: Seen in all study sites, particularly around disturbed habitats.

50. *Calotes rouxii* Duméril & Bibron, 1837
Morphology (n =5): Snout-vent length: 34–69 (juv:28), tail length: 80–178 (juv:49), head length: 12–20 (juv:9), head width: 8–12 (juv:7), head depth: 4–9 (juv:5.5), body width: 8–10 (juv:5), axilla-groin distance: 18–38 (juv:14), fore limb length: 11–22 (juv:7), hind limb length: 17–34 (juv:11.5). Scalerows 56–60; scales small, posteriorly oriented, slightly imbricate, keeled; supratympanic spines present; crest well–developed in adult males; 4th toe subdigitals: 33–38. Dorsum brown to dark gray with a series of thin ragged bands on trunk; a pair of black parietals pots; darker shades of small random streaks on lateral part of body and dorsal part of limbs; venter dirty white powdered with brown; gular region dark grey, especially in males; a distinct black antehumeral fold in all age groups and sexes; head and neck of nuptial males scarlet red with blackish body and tail; tail brownish with obscure darker bars across.
Recorded from: Bilgiri and Melagiri hills, in high-elevation wet forests.

51. *Calotes calotes* (Linnaeus, 1758)
Morphology (n=5): Snout-vent length:83–123 (juvenile 303), tail length:333–435 (juvenile 90), head length:20–33, head width:17–21, head depth:14–18 body width:20–25, axilla-groin distance:40–70 (juvenile 17), fore limb length:26–46, hind limb length: 45–65. Dorsum parroty green with 4–5 white transverse vertical bars across the trunk; venter flourascent green; adult males in nuptial season develop blood red head and bluish cheeks; tail basally green progressively becoming white-banded brown towards tip; iris brown with black circular pupil.
Recorded from: South Arcot hill complex (Gingee, Tiruvannamalai)
Comments: : Surprisingly, despite 600 hours of survey, this species could not be sighted in Bilgiri-Melagiri massif and future works are needed to test its absence in this region.

52. *Psammophilus* cf. *blanfordanus* (Stoliczka, 1871)
Morphology : Specimens typical of the species.
Recorded from: All study sites, including Chengelpet hills (> 100 m asl).

53. *Psammophilus dorsalis* (Gray in Griffith & Pidgeon, 1831)
Morphology : Specimens typical of the species.
Recorded from: Krishnagiri hills in higher elevations (> 900 m asl).

54. *Psammophilus* sp.
Morphology (n = 1): Snout-vent length: 63, tail length: 109, head length: 18, head width: 13.5, head depth: 10, body width: 19, axilla-groin distance: 32.5, fore limb length: 29.5, hind limb length: 32.5. Scalerows 65; scales distinctly keeled and imbricate, those on dorsal tail base larger and thickened; those on trunk oriented posterodorsally; supratympanic spine evident, crest poorly developed, but visible, particularly in adult males; a distinct vertebral ridge of skin along neck and trunk; supralabials 11–12; infralabials 13; antehumeral fold evident; 4th toe subdigitals 22. Dorsum whitish cream above with darker black and brownish mottling along the sides of the body, and on limbs and tail; a series of 3–5 whitish trapezoid markings on trunk; venter white laterally bordered by grey dots and reticulations across trunk; grey and white spots and bars on limbs and tail. Nuptial males with scarlet red head and neck, with shiny black body, limbs and tail.
Recorded from: Melagiri hills, within mid-elevation deciduous tracts.

55. *Draco dussumierii* Duméril & Bibron, 1837
Morphology (n=1): Snout-vent length: 105, tail length: 145, head length: 20, head width: 13, head depth: 9, body width: 13, axilla-groin distance: 55, fore limb length: 28, hind limb length: 32. Scales strongly keeled; spiny projections on tail and near rump; scales on face spiny, with distinct supratympanic, orbital and temporal spines; labia 10–13; 4th toe subdigitals 14. Dorsum fawn brown with darker marblings; a series of chocolaty circular ocellated markings on vertebral region; three brown cross bars on head; a pair of brown parietal spots.
Recorded from: Talamalai plateau and Tiruvannamalai hills. Rare.
Comments: Curiously, despite long-term fieldwork this species has not been reported from Shevaroys and Jawadi ranges (Ganesh & Arumugam, 2016).

CHAMELEONIDAE

56. *Chamaeleo zeylanicus* (Laurenti, 1768)
Morphology: Specimens typical of the species.
Recorded from: North Arcot and South Arcot hills.

VARANIDAE

57. *Varanus bengalensis* (Daudin, 1802)
Morphology: Specimens typical of the species.
Recorded from: Bilgiri (Guthiyalathur, Kadambur), Melagiri (Aiyur, Denkanikottai), North Arcot (Chengelpet

Tiruttani), South Arcot (Gingee, Tirthamalai, Tiruvannamalai,) hills.

TYPHLOPIDAE

58. *Indotyphlops braminus* (Daudin, 1803)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

GERRHOPILIDAE

59. *Gerrhopilus* sp.
Morphology (n=5): Snout-vent length: 143–153, tail length: 6–9, head length: 3–4.5, head width: 3.5–4, body width: 4–5. Scalerows 18–20, ventrals 188–197, anal 1, subcaudals 5–7. Scales smooth and shiny all throughout; nasals not in contact with each other behind rostral; scale sutures embedded with series of beady sebaceous glands that are macroscopically visible. Overall color fleshy pinkish to dark coffee brown dorsally, ventrally of a lighter shade, white patches sometimes seen near anal scale and tail tip; black subdermal eye.
Recorded from: Bilgiri (Talamalai, Dimbam, Ittarai), Melagiri (Guthirayan) and North Arcot (Chengelpet) hill complexes.

UROPELTIDAE

60. *Uropeltis ellioti* (Gray, 1858)
Morphology (n=6): Snout-vent length: 128–200, tail length: 8.5–12, head length: 5–7.5, head width: 4–6.5, body width: 4.5–7, tail–shield length: 4.5–9.5, tail–shield width: 3–5.5, tail–shield depth: 2–3.5. Supralabials: 4, infralabials: 4, scalerows 19:17:15; ventrals 144–151, anal 1, subcaudals 9–10 pairs; tail shield bulged, oval and notably convex, covered with multicarinate scales. Body scales smooth and glossy. Dorsum dark chocolaty brown with powdered with yellow, venter of a lighter shade of brown with yellow blotches in adults and smaller speckles in juveniles; head and neck with a yellow ventrolateral stripe on each side; tail brown in between sandwiched by two yellow caudal stripes that meet at anal scale; tail shield dark brownish gray, with a characteristic yellow caudal spot on tail tip; black subdermal eye.
Recorded from: Melagiri hills, in high–elevation wet forests.

61. *Uropeltis* cf. *phipsonii* (Mason, 1888)
Morphology (n=1): Snout-vent length: 202, tail length: 11, head length: 8, head width: 6, body width: 7.5; tail–shield length: 7.5, tail–shield width: 6, tail–shield depth: 5. Supralabials: 4, infralabials: 4, scalerows 17:17:15; ventrals 155, anal 1, subcaudals 7 pairs; a flat, circumscribed, and concave tail–shield, having multicarinate scales. Body scales smooth, shiny. Bluish black above with a tinge of brown; underside of the same colour, having distinct bright yellow blotches that either alternate or conjoin together at places; subcaudals black in between bordered on both sides by bright yellow at level of anal scale; tail shield black, unpatterned; black subdermal eye.
Recorded from: Bilgiri (Dimbam Ghats).
Comments: Endemic to Western Ghats, populations in Eastern Ghats requires taxonomic studies.

PYTHONIDAE

62. *Python molurus* (Linnaeus, 1758)
Morphology: Specimens typical of the species.
Recorded from: South Arcot hills (Gingee, roadkill).

ERYCIDAE

63. *Eryx conicus* (Schneider, 1801)
Morphology: Specimens typical of the species.
Recorded from: North Arcot hills (Chengelpet, Gudiyattam roadkill).

64. *Eryx johnii* (Russell, 1801)
Morphology: Specimens typical of the species.
Recorded from: North Arcot hills (Chengelpet), South Arcot hills (Gingee).

VIPERIDAE

65. *Daboia russelii* (Shaw & Nodder, 1797)
Morphology: Specimens typical of the species.
Recorded from: Hosur, in dry plains country.

66. *Echis carinatus* (Schneider, 1801)
Morphology: Specimens typical of the species.
Recorded from: North Arcot and South Arcot hill complexes.

67. *Trimeresurus gramineus* (Shaw, 1802)
Morphology (n=4): Snout-vent length 660–1020; tail length 155–188; head length 35–41.5; head width 28–31.5; head depth 26–30. Dorsal scales mildly keeled, imbricate; scale rows 21:21:16–17; ventrals 159–162; anals 2; subcaudals 67–76 pairs. Dorsum dull bluish green to grass green, with a series of obscure rhomboid greyish markings, more so in male; venter straw coloured bordered by gresyish blue ventrolateral blotches in male, uniform golden yellow in females; tip of subcaudals distinctly blue; iris greenish with a black, vertical slit-like pupil.
Recorded from: Bilgiri (Talamalai, not examined), Melagiri (Guthirayan) and South Arcot (Gingee) hills.

ELAPIDAE

68. *Calliophis melanurus* (Shaw, 1802)
Morphology : Live specimen, not examined.
Recorded from: North Arcot hills (Chengelpet).

69. *Bungarus caeruleus* (Schneider, 1801)
Morphology: Specimens typical of the species.
Recorded from: Pennagaram, in dry plains country.

70. *Naja naja* (Linnaeus, 1758)
Morphology: Specimens typical of the species.
Recorded from: Hosur, Pennagaram in dry plains country.

NATRICIDAE

71. *Amphiesma stolatum* (Linnaeus, 1758)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

72. *Xenochrophis piscator* (Schneider, 1799)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

73. *Atretium schistosum* (Daudin, 1803)
Morphology: Specimens typical of the species.
Recorded from: South Arcot hill complex (Sattanur dam).

74. *Macropisthodon plumbicolor* (Cantor, 1839)
Morphology (n=3): Snout-vent length: 440, tail length:

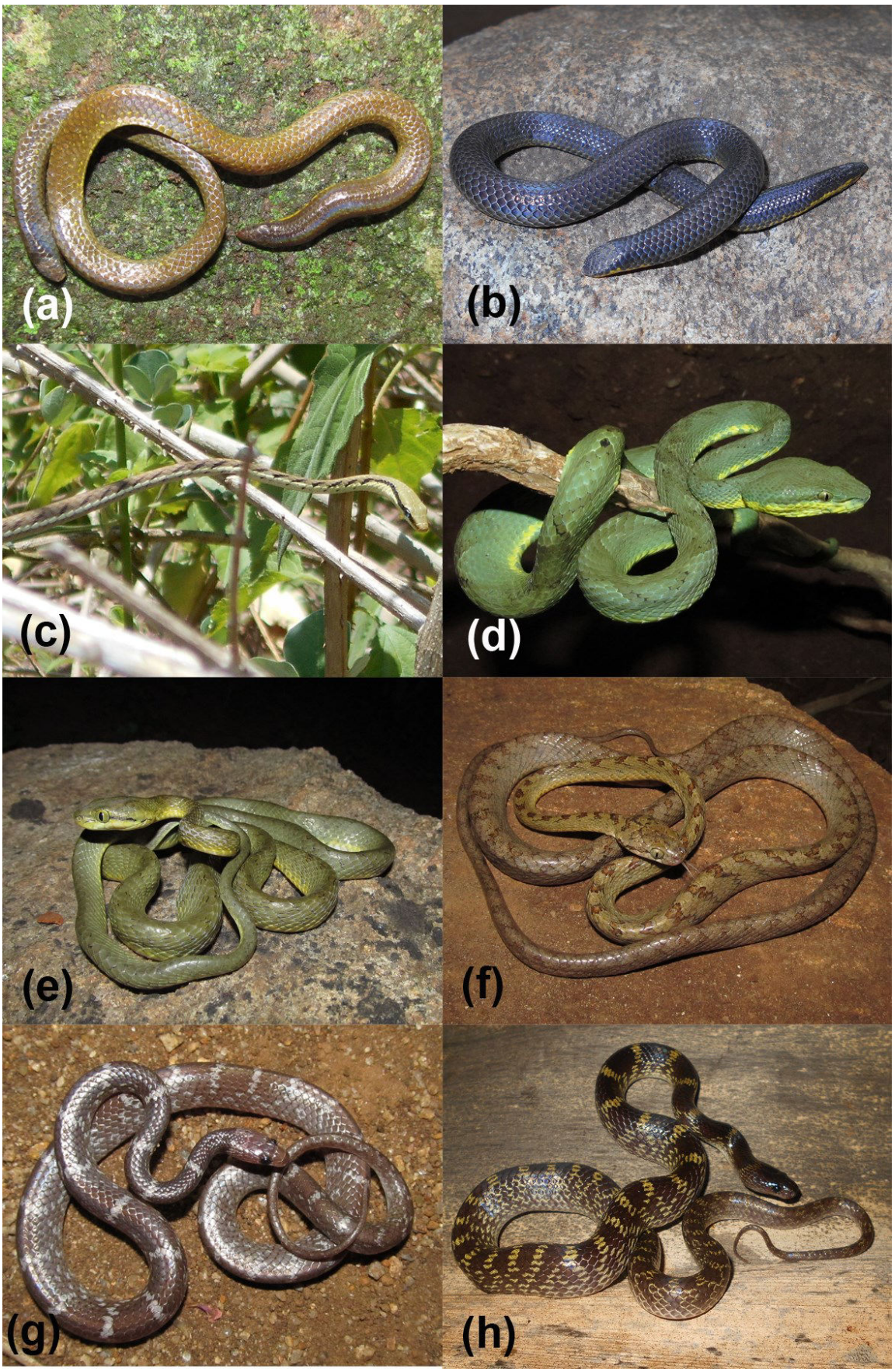

Fig. 6. Some range-restricted snakes: (a) *Uropeltis ellioti*, (b) *Uropeltis* cf. *phipsonii*, (c) *Dendrelaphis* sp., (d) *Trimeresurus gramineus*, (e) *Boiga flaviviridis*, (f) *Boiga nuchalis*, (g) *Lycodon* sp., (h) *Lycodon travancoricus*.

98, head length: 24.5, head width: 18, body width: 22.5. Supralabials 9, infralabials 8, preoculars 2, postoculars 3 –4, loreal 1, temporal 2 + 3, scale rows 23:25:17; ventrals 159, anal 2, subcaudals 44 pairs. Dorsum uniform bright green in adult (juvenile with black cross bars and a yellow chevron mark on nape); venter bluish white; iris green with a black circular pupil.
Recorded from: Melagiri (Devarabetta, roadkill), North Arcot (Yelagiri), South Arcot (Tiruvannamalai, Gingee).

COLUBRIDAE

75. *Dryocalamus nympha* (Daudin, 1803)
Morphology (n=2): Snout-vent length: 380–395, tail length: 90–95, head length: 11–12.5, head width: 6–6.5, head depth: 3–3.5, body width: 6–6.5. Supralabials: 7, infralabials: 8, preocular absent, postoculars 2, loreal 1 touching eye, temporals 2 + 2, scalerows 13:13:13, smooth but with apical pits; ventrals 200–209, anal 2, subcaudals 70–74 pairs. Dorsum dark chocolaty brown with 42–46 yellowish white bands that have brownish dots within; venter white, gular region straw coloured; iris and pupil indiscernibly black.
Recorded from: South Arcot hill complex (Gingee).

76. *Lycodon anamallensis* Günther, 1864
Morphology: Specimens typical of the species.
Recorded from: North Arcot (Chengelpet) hills.

77. *Lycodon striatus* (Shaw, 1802)
Morphology: Specimens typical of the species.
Recorded from: South Arcot hill complex (Tiruvannamalai), a road–kill.

78. *Lycodon travancoricus* (Beddome, 1870)
Morphology (n=2): Snout-vent length: 400–410, tail length: 90–95, head length: 13–14.5, head width: 8–9, head depth: 4.5–5.5, body width: 8–9. Supralabials: 9, infralabials: 9, preocular 1, broadly contacting frontal; postoculars 2, loreal 1, temporals 2 + 3, scalerows 17:17:15; ventrals 184–189, anal 1, subcaudals 70–73 pairs. Dorsum brownish black with 46–50 yellow cross bands; venter white; iris and pupil indistinguishably black.
Recorded from: Bilgiri hills (Talamalai, Dimbam Ghats) in high–elevation evergreen forests.

79. *Lycodon* sp.
Morphology (n=2): Snout-vent length: 310–455, tail length: 50–105, head length: 11–15, head width: 6.5–9.5, head depth: 4–6, body width: 7–10.5. Supralabials: 9–10, infralabials: 9–10, preocular 1, not contacting frontal; postoculars 2, loreal 1, temporals 2 + 3, scalerows 17:17:15; ventrals 182–187, anal 1, subcaudals 78–84 pairs. Dorsum light brown in adult, brownish black in juvenile, with 50–53 white cross bands, bands broader vertebrally, diverging into two arms laterally; a distinct broad collar band that is either contracted or interrupted by ground colour medially at occiput; a backward U-shaped white marking on crown; venter white; scales on head white–bordered; iris and pupil indistinguishably black.
Recorded from: Bilgiri-Melagiri hill complex, in high-elevation wet forests.

80. *Oligodon arnensis* (Shaw, 1802)
Morphology: Specimens typical of the species.
Recorded from: Hosur hills; South Arcot hill complex (Tiruvannamalai).

81. *Oligodon taeniolatus* (Jerdon, 1853)
Morphology: Specimens typical of the species.
Recorded from: North Arcot (Vellore) and South Arcot (Tiruvannamalai) hill complexes.

82. *Boiga trigonata* (Daudin, 1802)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

83. *Boiga flaviviridis* Vogel & Ganesh, 2013
Morphology (n=4): Snout-vent length: 870–1100, tail length: 170–215, head length: 20.5–40, head width: 13–20.5, body width: 19–22.5. Scale rows 19:19:15; ventrals 255–260; subcaudals 110–111; anal 1; supralabials 8; infralabials 9; preocular 1; postoculars 2; temporals 2+3. Dorsum yellowish-green with about 88–93 feeble black bands; venter unpatterned lemon yellow, lacking any speckles; iris yellowish green, with a vertical, slit-like pupil.
Recorded from: Melagiri (Aiyur, Guthirayan), North Arcot (Vallimalai, Gudiyattam), South Arcot (Tiruvannamalai, roadkill) hills.

84. *Boiga nuchalis* (Günther, 1876)
Morphology (n=6): Snout-vent length: 670–1100, tail length: 177–232, head length: 21–42.5, head width: 11–19.5, body width: 19–22.5. Scale rows 21:21:16; ventrals 230–238; subcaudals 109–118; anals 2; supralabials 8; infralabials 9–10; preocular 1; postocualrs 2; temporals 2+3. Dorsum fawn brown with 97–102 reddish cross bars, same coloured collar band on neck; venter straw yellow densely powdered with blackish brown; iris golden brown with black, vertical slit-like pupil.
Recorded from: Bilgiri (Talamalai, Dimbam) and Melagiri (Guthirayan) hills.

85. *Boiga forsteni* (Duméril, Bibron & Duméril, 1854)
Morphology (n=1, roadkill): Snout-vent length: 1030, tail length: 197, head length: 55, head width: 35, head width: 35, body width: 45. Supralabials: 9, infralabials: 8, preocular 1, postoculars 2, loreal 1, temporal 3 + 3, midbody scalerows 25; ventrals 244? (damaged), anal 2, subcaudals 111 pairs. Dorsum ashy or sooty grey with large ragged black bands intermixed with white rhomboid blotches; venter pale white, checkered with similar color as of dorsum; iris fawn brown with a dark black elliptical slit-like pupil.
Recorded from: North Arcot (Vellore) hills.

86. *Dendrelaphis tristis* (Daudin, 1803)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

87. *Dendrelaphis* sp.
Morphology (n=1): See Ganesh & Arumugam (2016a) detailing a specimen from Jawadi hills.
Recorded from: Bilgiri hills (Gundri).

88. *Ahaetulla* cf. *nasuta* (Lacépede, 1789)
Morphology: Specimens typical of the species.
Recorded from: Melagiri (Guthirayan); North and South Arcot (Chengelpet, Gingee) hills.

89. *Sibynophis subpunctatus* (Duméril, Bibron & Duméril, 1854)
Morphology: Only roadkills recorded; identity was

confirmed but detailed observations wanting.
Recorded from: South Arcot hills (Tiruvannamalai).

90. *Liopeltis calamaria* (Günther, 1858)
Morphology (n=1): Snout-vent length: 200, tail length: 85, head length: 11, head width: 9, body width: 9. Scale rows 15:15:15; ventrals 157; subcaudals 60; anal 2; supralabials 8; infralabials 9; preocular 1; postoculars 2; temporals 2+2. Dorsum sandy brown with feeble black spots and streaks; two dark stripes on neck and forebody; venter unpatterned greenish yellow, spotted on coastal margins; iris yellowish brown, with black circular pupil.
Recorded from: North Arcot (Vellore) and South Arcot hills (Gingee).

91. *Argyrogena fasciolata* (Shaw, 1802)
Morphology: Specimens typical of the species.
Recorded from: Hosur hills, in dry, mid-elevation, open stony country.

92. *Platyceps bholanathi* (Sharma, 1976)
Morphology (n=1): See Ganesh *et al.* (2013) for morphology of specimen from Hosur hills (Thally).
Recorded from: Hosur, North Arcot (Vallimalai, escaped) and South Arcot (Gingee, escaped; also see Smart *et al.*, 2014) hills, in dry, mid-elevation, open stony country.

93. *Coelognathus helena helena* (Daudin, 1803)
Morphology: Specimens typical of the species.
Recorded from: Hosur hills, in dry plains / foothills.

94. *Coelognathus helena monticollaris* (Schulz, 1992)
Morphology (n=1, roadkill): Snout-vent length: 570, tail length: 100, head length: 21.5. Supralabials: 9, infralabials: 10, preocular 1, postoculars 3, loreal 1, temporal 2 + 3, midbody scale rows 27; ventrals 220 ? (damaged), anal 2, subcaudals 87 pairs. Dorsum ochre, with a characteristic black forward-facing V-shaped pattern on top of head; anterior body with 21 black and white ocellated crossbars that are either confluent or alternate on either sides of body; hind body striped with dark brown, lacking bands; iris brown with a large, black circular pupil.
Recorded from: Bilgiri hills (Dimbam Ghats).

95. *Ptyas mucosa* (Linnaeus, 1758)
Morphology: Specimens typical of the species.
Recorded from: All study sites.

DISCUSSION

The latest comprehensive treatment on Southern Eastern Ghats herpetofauna (Ganesh & Arumugam, 2015 a,b, 2016 a,b) enumerated on amphibians and reptiles of a series of north-south oriented hill ranges from Jawadi (12°N) up to Sirumalai (10°N), concentrating on the montane zones. Hill ranges on either sides of this landscape - the western and the eastern clusters form the area for the present work. Similar to previous work (Ganesh, 2016), in the present work many rare and poorly-known species were documented from many un- and under-surveyed massifs. As a apart of extensive project on the Eastern Ghats herpetofauna our works have brought out some remarkable results (Barghavi *et al.*, 2013; Chandramouli *et al.*, 2011, 2012, 2014; Ganesh *et al.*, 2013 a, b, 2017; Kalaimani & Nath, 2012, 2103; Kalaimani, 2015).

Historical field sampling in areas falling under the present study region only touched upon certain hill ranges including Bangalore (Jerdon, 1853, 1854), Yelandur, Kollegal, Erode, Denkanicottah, Tirupathi North Arcot, Yelagiri (Beddome, 1863, 1870 a,b). In these works several new species of reptiles were discovered and described. Subsequent attempts were made to enumerate the herpetofauna of Chitteri and Darmapuri regions of this landscape that also resulted in novelties (Sharma, 1979; Murthy & Chandrasekar, 1988). Many hills in these ranges were still unsampled by field herpetologists, thereby throwing open prospects for further new findings (Aengals & Ganesh, 2013). Unstudied voucher materials from these regions are also hard to come by, even in local provincial museums (Ganesh & Asokan, 2010). So the herpetofauna of this region had remained largely unknown.

Our survey uncovered the following new distribution records of amphibians: *Duttaphrynus hololius* from Erode and Salem hills (see Bhargavi *et al.*, 2013), *Microhyla sholigari* from Talamalai and Hosur ranges (Seshadri *et al.*, 2016), *Pseduophilautus* cf. *wynaadensis* and *Indosylvirana* sp. from Talamlai, and hill-stream dwelling *Fejervarya* spp. from Talamalai and Gundri hills (cf. Ganesh & Arumugam, 2016). Our work also provided new additional records of the recently described *Raorchestes honnametti* (see Priti *et al.*, 2016). Though the extremities of the study area abut regions (Mudumalai in the West, Tada in the East) reported to harbor caecilians (Dinesh *et al.*, 2009), none were encountered during the present surveys.

Among lizards, new distribution records include: *Cnemaspis otai* from South Arcot hills, *Hemiphyllodactylus* cf. *aurantiacus* from Bilgiri hills, *Draco dussumierii* from Talamalai plateau and South Arcot hills (Sattanur / Chengam); *Calotes rouxii* from Bilgiri and Melagiri hill complexes; *Lygosoma pruthi* from Melagiri and South Arcot hills; *Eutropis allapallensis* from Bilglri -Melagiri hill complex, *E. beddomei* from North and South Arcot hills, *Eutropis* cf. *bibronii* from Sankagiri. New information was documented for the recently described *Cnemaspis otai* (see Das & Bauer, 2000), *Cyrtodactylus srilekhae* (see Agarwal, 2016) and *Lygosoma pruthi*, (see Ganesh & Arumugam, 2016). Non-detection of *Calotes calotes* in Bilgiri-Melagiri massif indicates that the easterly population in the Arcot belts is a disjunct one (Daniel, 2002).

In snakes, new distribution records include: *Gerrhopilus* sp. from South Arcot hills, *Lycodon travancoricus* from Bilgiri hills, *Boiga nuchalis* from Bilgiri-Melagiri hill complex, *B. flaviviridis* from South Arcot hills, *Liopeltis calamaria* from North Arcot and South Arcot hills. Potentially undescribed species of *Lycodon* and *Dendrelaphis* were also encountered in high-elevations of the some sampled hill ranges. The non-detection of many Western Ghats-endemic pit vipers and coral snakes in the Bilgiri hills further strengthens the conclusions of Ganesh & Arumugam (2016a) about their absence in the disjunct and much more eastwardly Shevaroys.

Taxonomic resolution of the animals documented was not always up to species-level. A few populations resemble described species but differed from them in certain morphological features. Some examples include

Pseudophilautus and *Fejervarya* frogs, some of *Cnemaspis*, *Hemidactylus* and *Psammophilus* lizards as well as *Uropeltis* and *Ahaetulla* snakes. Faced with a similar challenge of banking only on data stemming from examining live animals in situ, we reinstate the opinion of Ganesh & Arumugam (2016a) that collection-based taxonomic works are necessary to refine their identities further. Such works will likely increase the species richness of this region and may even produce novelties. This would bring up the biodiversity value of this unexplored and under-estimated region, despite having good forest cover and topographic heterogenities─factors that drive speciation of less-vagile animals in tropical montane hotspots.

ACKNOWLEDGEMENTS

We thank our respective organisations for encouraging our research activities. We thank the Tamil Nadu Forest Department for their permission to conduct fieldwork. Much of the fieldwork done in this project was commissioned under Recent Protected Area Biodiversity Inventory Programme. We are grateful to Mr. Sanjeev Kumar, Kenneth Anderson's Naturalists Society (in Krishnagiri dt.) and Mr. Sadiq Ali, Wildlife & Nature Conservation Trust (in Erode dt.) for their support. SRG thanks Mr. Preston Ahimaz and M/S. TVS Pvt. Ltd. Hosur for their support. We thank the following persons for their inputs on certain taxa: S.P. Vijayakumar for frogs, Ishan Agarwal for lizards, David Gower for shieldtails and Patrick David, Gernot Vogel and Romulus Whitaker for other snakes. And last but not the least – we gratefully acknowledge the advice offered on this project at its initial stages by the late Dr. S. Bhupathy.

REFERENCES

Aengals, R., Kumar, V.M.S. and Palot, M.J. 2011. Updated checklist of Indian Reptiles. Zoological Survey of India. URL: zsi.gov.in/checklist/reptiles (accessed on 20th January 2018).

Aengals, R. and Ganesh, S.R. 2013. *Rhinophis goweri* – a new species of Shieldtail snake from the southern Eastern Ghats, India. Russian Journal of Herpetology, 20(1): 61–65.

Agarwal, I. 2016. Two new species of ground-dwelling *Cyrtodactylus* (*Geckoella*) from the Mysore Plateau, south India. Zootaxa, 4193 (2): 228–244.

Agarwal, I., Mirza Z.A., Pal S., Maddock S.T., Mishra A. and Bauer A. M. 2016. A new species of the *Cyrtodactylus* (*Geckoella*) *collegalensis* (Beddome, 1870) complex (Squamata: Gekkonidae) from Western India. Zootaxa, 4170(2): 339–354.

Beddome, R.H. 1870 a. Descriptions of some new Lizards from the Madras Presidency. Madras Month. J. Med. Sci., 1: 30–35.

Beddome, R.H. 1870 b. Descriptions of new Reptiles from the Madras Presidency. Madras Month. J. Med. Sci., 2: 169–176.

Bhargavi, S., Ganesh, S.R. and Srinivasulu, C. 2013. New regional record and notes on historical specimens of Günther's toad *Duttaphrynus hololius* with comments on other southeastern Indian congeners. Journal of Threatened Taxa, 5(13):4784–4790.

Champion, H.G. and Seth, S.K. 1968. A revised survey of forest types of India. Govt. of India Press, New Delhi, 104 pp.

Chandramouli, S.R., Ganesh, S.R. and Baskaran, N. 2011. On recent sightings of a little known toad, *Duttaphrynus hololius* (Günther, 1876) with notes on its morphological characterization and ecology. Herpetology Notes, 4: 271–274.

Chandramouli, S.R., Ganesh, S.R., Sravanan, M. and Baskaran, N. 2012. Record of the sea-shore skink *Eutropis bibronii* in the Eastern Ghats of southern India. Salamandra, 48: 241–242.

Chandramouli, S.R. and Kalaimani, A. 2014. Description of the larvae of Günther's toad *Duttaphrynus hololius* (Günther, 1876) (Anura: Bufonidae) with notes on developments and oral ultra-structure. Alytes, 31: 3–12.

Colwell, R.K., C.X. Mao and J. Chang. 2004. Interpolating, extrapolating, and comparing incidence-based species accumulation curves. Ecology, 85: 2717–2727.

Crump, M.L. and Scott, Jr. N.J. 1994. Visual encounter surveys. *In* Heyer, W.R., Donnelly, M.A., Mcdiarmid, R.W., Hayek, L.C. and Foster, M.S. (*Eds*). Measuring and monitoring biological diversity: standard methods for amphibians. Smithsonian Institution Press, Washington DC: 84–92.

Dahanaukar, N., Sulakhae, S. and Padhye, A. 2017. Identity of *Sphaerotheca pluvialis* (Jerdon, 1853) and other available names among the burrowing frogs (Anura: Dicroglossidae) of South Asia. Journal of Threatened Taxa, 9(6): 10269–10285.

Daniel, J.C. 2002. The Book of Indian Reptiles and Amphibians. Bombay Natural History Society, Oxford University Press, Bombay, India.

Daniels, R.J.R. and Ishwar N.M. 1994. Rarity and the herpetofauna of the Southern Eastern Ghats, India. *Cobra*, 16: 2–14.

Das, I. 2002. A photographic guide to the snakes and other reptiles of India. New Holland Publishers (U.K.) Ltd., London.

Das, I. and DeSilva, A. 2005. A photographic guide to the snakes and other reptiles of Srilanka. New Holland Publishers (U.K.) Ltd., London.

Dinesh, K.P., Radhakrishnan, C., Gururaja, K.V. and Bhatta, G.K. 2009. An annotated checklist of Amphibia of India with some insights into the patterns of species discoveries, distribution and endemism. Records of Zoological Survey of India, Occasional Papers No. (302): 153 pp.

Dutta, S.K. 1997. Amphibians of India and Sri Lanka (checklist and bibliography). Odyssey Publishing House, Bhubaneswar, India.

Dutta, S.K. and Manamendra-Arachchi, K. 1996. The Amphibian Fauna of Sri Lanka. Colombo, Wildlife Heritage Trust of Sri Lanka.

Dutta, S.K. and Ray, P. 2000. *Microhyla sholigari* – a new species of microhylid frog (Anura: Microhylidae) from Karnataka, India. *Hamadryad*, 25(1):38–44.

Jayakumar, S., Ramachandran, A., Bhaskaran, G. and Heo, J. 2008. Forest dynamics in the Eastern Ghats of Tamil Nadu, India. Environmental Management, 2008: 1–20.

Jerdon, T.C. 1854. Catalogue of the reptiles inhabiting the peninsula of India. J. Asiatic Soc. Bengal, 22: 522–534.

Joshy, S.H., Alam, M.S., Kurabayashi, A., Sumida, M. and Kuramoto, M. 2009. Two new species of the genus *Euphlyctis* (Anura, Ranidae) from southwestern India, revealed by molecular and morphological comparisons. Alytes, 26: 97–116.

Ganesh, S.R. and Asokan, J.R. 2010. Catalogue of Indian herpetological specimens in the collection of the Government Museum Chennai, India. Hamadryad, 35:46–63.

Ganesh, S.R., Adimallaiah, D. and Kailash, P.K. 2013a. New locality records of Nagarjunsagar racer snake *Coluber bholanathi* Sharma, 1976. Herpetotropicos, 9(1–2):9–12.

Ganesh, S.R., Kalaimani, A., Nathu, A. and Kumar, R.B. 2013b. First observations on the larval characteristics of Günther's toad *Duttaphrynus hololius* (Günther,1876). Herpetotropcios, 9(1–2): 5–8.

Ganesh, S.R., Aengals, R. and Ramanujam, M.E. 2014. Taxonomic reassessment of two Indian shieldtail snakes in the *Uropeltis ceylanicus* species group (Reptilia: Uropeltidae). Journal of Threatened Taxa, 6(1): 5305–5314.

Ganesh, S.R. and Ramanujam, M.E. 2014. Rediscovery of Beddome's coralsnake *Calliophis beddomei* Smith, 1943 from the type locality. Journal of Threatened Taxa, 6(3): 5580–5582.

Ganesh, S.R. and Arumugam, M. 2015a. Status and conservation of montane herpetofauna of Southern Eastern Ghats, India. Zoo's Print, 30(9): 18–22.

Ganesh, S.R. and Arumugam, M. 2015b. Microhabitat use and abundance estimates of understorey herpetofauna in the highlands of Southern Eastern Ghats, India, with observations on roadkill mortalities. Asian Journal of Conservation Biology, 4(2): 143–150.

Ganesh, S.R. 2016. Studies on the Montane Herpetofauna of the Southern Eastern Ghats, peninsular India. Ph.D. thesis submitted to the Univ. of Madras.

Ganesh, S.R. and Arumugam, M. 2016a. Distribution pattern, zoogeographic similarities and affinities of montane herpetofauna of Southern Eastern Ghats, peninsular India. Hyla: Herpetological bulletin, 2015(2): 9–19.

Ganesh, S.R. and Arumugam, M. 2016b. Species richness of montane herpetofauna of Southern Eastern Ghats, India: a historical resume and a descriptive checklist. Russian Journal of Herpetology, 23(1): 7–24.

Ganesh, S.R. and Chandramouli, S.R. 2017. Identification of Leschenault's snake-eyed lizard *Ophisops leschenaultii* (Milne-Edwards, 1829), with notes on its ontogenetic colour change. Sauria, 39(2): 68 –72.

Ganesh, S.R., Rameshwaran, M., Joseph, N. A. and Jerith, A.M. 2017a. On two little-known terrestrial South Asian geckoes *Hemidactylus reticulatus* and *Hemidactylus scabriceps* (Reptilia: Gekkonidae). Journal of Threatened Taxa, 9(5): 10171–10177.

Ganesh, S.R., Dutta, S.K. and Chandramouli, S.R. 2017b. On the taxonomy and nomenclature of the common Indian cricket frog *Rana agricola* Jerdon, 1853 (Amphibia: Dciroglossidae). Asian Journal of Conservation Biology, 6(2):107–113.

Giri, V.B., Agarwal, I. and Bauer, A.M. 2009. Designation of a neotype for *Cnemaspis mysoriensis* (Jerdon, 1853) (Sauria: Gekkonidae), with a redescription and notes on its distribution and habitat. Russian Journal of Herpetology, 16(4): 256–264.

Gosner, L.K. 1960. A simplified table for staging anuran embryos and larvae with notes on identification. Herpetologica, 16 (3):183–190.

Gower, D. J. and Ablett, J. D. 2006. Counting ventral scales in anilioid snakes. Herpetological Journal, 16: 259–263.

Kalaiman, A., Nath, A. and Kumar, R.B. 2012. A note on the records of rare and endemic *Duttaphrynus hololius* (Günther, 1876). Frog Leg, 18: 27–30.

Kalaimani, A. and Nath, A. 2012. A new locality and microhabitat usage by *Calodactylodes aureus* (Beddome, 1870) from Tamil Nadu, Southern India. Herpetotropicos, 8: 49–54.

Kalaimani, A. and Nath, A. 2013. The Indian golden gecko *Calodactylodes aureus* (Beddome, 1870) in Tamil Nadu. Taprobanica, 5:81–84.

Kalaimani, A. 2015. Notes on egg-laying sites of *Caldoactylodes aureus* (Beddome, 1870) in Tirupattur Forest Division, Southern India. Herpetological Bulletin, 131: 24–25.

Manamendra–Arachchi, K. Batuwita, S. and Pethiagoda, R. 2007. A taxonomic revision of the Sri Lankan day-geckos (Reptilia: Gekkonidae: *Cnemaspis*), with description of new species from Sri Lanka and southern India. Zeylanica, 7: 9–122.

Murthy, T.S.N. 1990. A field book of the lizards of India. Records of the Zoological Survey of India. Occasional paper, 115: 1–116.

Murthy, T.S.N and Chandrasekhar, S.V.A. 1988. First report on the lizards of Dharmapuri District, Tamil Nadu. Records of the Zoological Survey of India, 853: 405–409.

Priti, H., Roshmi, R. S., Ramya, B., Sudhira, H. S., Ravikanth, G., Aravind, N. A., and Gururaja, K.V. 2016. Integrative taxonomic approach for describing a new cryptic species of bush frog (*Raorchestes*: Anura: Rhacophoridae) from the Western Ghats, India. PloS one, 11(3), e0149382.

Rajendran, M.V. 1985. Studies in Uropeltid snakes. Madurai Kamaraj University, Publications Division, Madurai, India.

Rao, K.T. Ghate, H.V. Sudhakar, M. Javed, S.M.M. and Krishna, I.S.R. 2005. Herpetofauna of Nallamala Hills with eleven new records from the region including ten new records for Andhra Pradesh. Zoos' Print Journal, 20(1):1737–1740.

Ribeiro–Junior, M.A., Gardner, T.A. and Avila–Pires, T.C.S. 2008. Evaluating the effectiveness of herpetofaunal sampling techniques across a gradient

of habitat change in a tropical forest landscape. Journal of Herpetology, 42 (4):733–749.

Scott N. J., Jr. 1994. Complete species inventories. *In*: Heyer, R.W. Donnelly, M.A., McDiarmid R.W., Hayek, L.A.C. and Foster, M.S. (Eds.) Measuring and Monitoring Biological Diversity. Standard Methods for Amphibians. Smithsonian Inst. Press, Washington, 78–84.

Seshadri, K.S., Priti, H., Ravikanth, G., Vidisha, M.K., Vineeth, K.K. Singal, R., Sarma R.R. and Gururaja, K.V. 2016. Redescription and range extension of *Microhyla sholigari* Dutta & Ray (Amphibia: Anura: Microhylidae) from South West India. Zootaxa, 4208: 547–560.

Srinivasulu, C. and Das, I. 2008. The herpetofauna of Nallamalai Hills, Eastern Ghats, India: an annotated checklist, with remarks on nomenclature, taxonomy, habitat use, adaptive types and biogeography. Asiatic Herpetological Research, 11:110–131.

Smart, U., Smith, E.N., Murthy, B.H.C.K. and Mohanty, A. 2014. Report of Nagarjunsagar racer *Coluber bholanathi* Sharma, 1976 (Squamata: Colubridae) from Gingee Hills, Tamil Nadu, India. Journal of Threatened Taxa, 6(4): 5671–5674.

Smith, M.A. 1935. The Fauna of British India, including Ceylon and Burma. Reptilia and Amphibia. Vol. II – Sauria. Taylor and Francis, London.

Smith, M.A. 1943. The Fauna of British India, Ceylon and Burma, including the whole of the Indo– Chinese region. Vol. III – Serpentes. Taylor and Francis, London.

Somaweera, R. and Somaweera, N. 2009. Lizards of Sri Lanka: a colour guide with field keys. Edition Chimaira, Frankfurt Am Mein, Germany.

Vijayakumar, S.P., Dinesh, K.P., Prabhu, M.V. and Shanker, K. 2014. Lineage diversification and description of nine new species of bush frogs (Anura: *Raorchestes*, Rhacophoridae) from the Western Ghats Escarpment. Zootaxa, 3893(4): 451–488.

Vogel, G. and Ganesh, S.R. 2013. A new species of cat snake (Reptilia: Serpentes: Colubridae: *Boiga*) from dry forests of eastern Peninsular India. Zootaxa, 3637(2):158–168.

Whitaker, R. and Captain, A. 2004. Snakes of India – the field guide. Draco Books, Chennai, India.

Appendix 1. Sighting frequency, relative abundance, hours needed for a sighting and encounter rates of family-level taxonomic entities of herpetofauna in the Southern Eastern Ghats, India.

Taxa (No. of spp.)	Sight. Freq.	Rel. Ab.	Hrs./sighting	Enc. Rate
Bufonidae (3 spp.)	595	11.60%	1.68 h	0.59
Microhylidae (6 spp.)	309	6.00%	3.23 h	0.30
Rhacophoridae (3 spp.)	66	1.29%	15.15 h	0.06
Dicroglossidae (11 spp.)	1299	24.90%	0.76 h	1.20
Ranaidae (1 sp.)	22	0.43%	45.4 h	0.02
Gekkonidae (18 spp.)	1170	22.90%	0.85 h	1.17
Lygosomidae (2 spp.)	40	0.78%	25 h	0.04
Mabuyidae (5 spp.)	287	6.00%	3.48 h	0.28
Lacertidae (1 sp.)	60	1.17%	16.6 h	0.06
Agamidae (8 spp.)	1003	19.70%	0.99 h	1.00
Chameleonidae (1 sp.)	28	0.54%	35.7 h	0.02
Varanidae (1 sp.)	5	0.09%	200 h	0.005
Typhlopidae (1 sp.)	13	0.25%	76.9 h	0.01
Gerrhopilidae (1 sp.)	16	0.31%	62.5 h	0.01
Uropeltidae (2 spp.)	7	0.13%	142.8 h	0.007
Pythonidae (1 sp.)	1	0.01%	1000 h	0.001
Erycidae (2 spp.)	10	0.19%	100 h	0.01
Viperidae (3 spp.)	20	0.39%	50 h	0.02
Elapidae (3 spp.)	3	0.05%	333.3 h	0.003
Natricidae (4 spp.)	38	0.74%	26.3 h	0.03
Colubridae (20 spp.)	118	2.30%	8.47 h	0.11