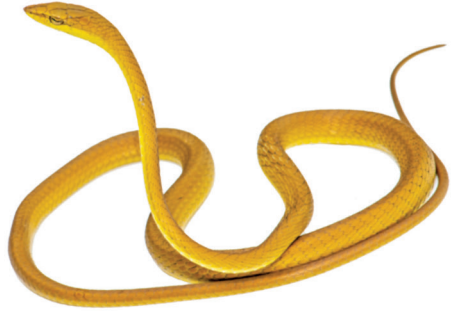


# SNAKES AND LIZARDS OF THE SKY ISLANDS OF THE WESTERN GHATS



DEEPAK V, SURYA NARAYANAN, SANDEEP DAS, RAJKUMAR KP,  
SAUNAK PAL, JASON D GERARD & DAVID J GOWER





*Craspedocephalus macrolepis*

# Snakes and Lizards of the Sky Islands of the Western Ghats

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**Authors:** Deepak V, Surya Narayanan, Sandeep Das, Rajkumar KP, Saunak Pal, Jason D Gerard & David J Gower

**Front cover images:** *Microauris aurantolabium* (top left), *Ahaetulla dispar* (top right), *Craspedocephalus macrolepis* (middle), *Dravidogecko janakiae* (bottom left) & *Plectrurus perroteti* (bottom right).

**Back cover image:** Grassland mosaic view in Eravikulam National Park, Kerala.



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## FOREWORD

### **From Herps to Theory : A Foreword to the Work on the Sky Island Reptile Fauna of the Western Ghats**

The great Sanskrit epic, Mahabharata, the earliest part of which was composed perhaps as early as 400 B.C.E., makes mention of the Sahyadris, the mountain range running along the west coast of India. It is here that the virtuous Pandavas took refuge during their 13-year exile.

The contemporary name for these hills, the Western Ghats, derives from the step-like formation of these mountains and their geological connection to the Deccan plains, which lies to the east. Indeed, the hill ranges represent the eroded edges of the plateau, caused by the separation of the Indian plate from Madagascar, during the Late Cretaceous. And famously today, the range is recognized as a global biodiversity hotspot.

Although keen observers, as evident from their philosophical writings, but not great recorders of natural history, ancient Indian scholars left behind sparse records of their knowledge of biodiversity. The little that exists is contained in the religio-medical works, especially on the use of wild and cultivated plants. For the earliest records of the fauna of the Western Ghats, we must turn to Western science, which leave behind records of early investigations on the fauna of these hill ranges. Nonetheless, no mention of either the herpetofauna or the range itself can be found at the dawn of species discovery at the time of Carolus Linnaeus, the father of binomial nomenclature, nor are covered in *Illustrations in Indian Zoology*,

the first major work on the vertebrates of the South Asian region, published between 1830–1832, as a joint project of Major-General Thomas Hardwicke and John Gray of the British Museum (Natural History) in London.

The earliest herpetofaunal species to be described from the Western Ghats were named by curators of the said museum in London and the one in Paris, based on collections made by Europeans, initially the French, but then chiefly, British, who were ‘in the field’, as explorers, army-men and planters. These include the French botanist, Jean-Baptiste-Louis-Claude-Théodore Leschenault, naturalist to King Louis XVII and Charles X; Jean-Jacques Dussumier, trader-shipowner in the French mercantile marine, who collected specimens at ports of call, including “Côte du Malabar”; Colonel Richard Henry Beddome, herpetologist (with an emphasis on snakes) and botanist, of the Indian Army; and Thomas Claverhill Jerdon, Surgeon, East India Company, Madras Regiment.

European contributors provided the inspiration for early Indian researchers at the time of independence, and after a long hiatus, a slow resurgence of work was evident starting from the period of the country’s independence, spearheaded by the Bombay Natural History Society, the Madras Government Museum, the Madras Snake Park, the Madras Crocodile Bank, the Zoological Survey of India, and several local universities.

These lead to early surveys and species descriptions, basic activities including mapping and characterizing the biota. Two important names from the period are Jivanayakam Cyril Daniel and Romulus Earl Whitaker, who have done more to promote the science of herpetology than arguably anyone from this period.

What we are witnessing today is a healthy resurgence of biodiversity science like never before. The new generation of biologists are a more inspired lot, deriving their enthusiasm from each other and drawn from visiting researchers, have access to the latest technologies and ideas and experiences overseas and not to be left unmentioned, the social media. Their contributions have been profound, equally to empirical data as well as to theory.

With this background, I would congratulate the authors of this guide to the wonderful reptile fauna of the Sky Island landscape of the southern Western Ghats. One can hope it reaches every inhabitant of the region, particularly, the curious and the inquisitive, to take pride in the natural resource and eventually, compel the taking up of arms for its protection.

**Indraneil Das**  
Kuching, Sarawak  
April 2022



Deepak, Surya, Sandeep, Rajkumar, Saunak, Jason and David have collectively spent several decades studying these unique high-altitude ecosystems and are impeccably qualified to do justice to the incredible snakes and lizards that inhabit them.

Several species that have been previously depicted only in scientific papers are featured in this book.

Included in each species description are diagnostic characters, morphometric information, and distribution maps to aid identification in the field (which I must caution, is not always possible)!

I congratulate the authors on collaborating to produce a book that documents one aspect of the incredibly rich biodiversity that exists in these isolated ‘islands’ that (mostly) tower above 1,500m in the southern Western Ghats of India.

**Ashok Captain**  
Pune, India  
April 2022

# CONTENTS

<b>Introduction</b>	17
<b>How to use this book</b>	21
<b>Chapter 1</b>	
<b>Snakes of the sky Islands of the Western Ghats</b>	22
<b>Colubridae</b>	
<i>Ahaetulla dispar</i>	24
<i>Ahaetulla travancorica</i>	26
<i>Ahaetulla perroteti</i>	27
<i>Proahaetulla antiqwa</i>	28
<i>Boiga thackerayi</i>	29
<i>Oligodon venustus</i>	30
<i>Oligodon travancoricus</i>	31
<i>Oligodon brevicauda</i>	32
<i>Hebius beddomei</i>	34
<b>Elapidae</b>	
<i>Calliophis nigrescens</i>	35
<b>Pareidae</b>	
<i>Xylophis mosaicus</i>	37
<i>Xylophis perroteti</i>	38
<i>Xylophis stenorhynchus</i>	39

## **Viperidae**

<i>Craspedocephalus anamallensis</i>	40
<i>Craspedocephalus travancoricus</i>	41
<i>Craspedocephalus malabaricus</i>	42
<i>Craspedocephalus strigatus</i>	44
<i>Craspedocephalus peltopelor</i>	45
<i>Craspedocephalus macrolepis</i>	46

## **Uropeltidae**

<i>Plectrurus perroteti</i>	47
<i>Platyplectrurus madurensis</i>	48
<i>Platyplectrurus trilineatus</i>	49
<i>Teretrurus sanguineus</i>	50
<i>Teretrurus rhodogaster</i>	51
<i>Melanophidium punctatum</i>	52
<i>Uropeltis liura</i>	53
<i>Uropeltis madurensis</i>	54
<i>Uropeltis pulneyensis</i>	55
<i>Uropeltis rubromaculata</i>	56
<i>Uropeltis rubrolineata</i>	57

## **Chapter 2**

<b>Lizards of the sky Islands of the Western Ghats</b>	59
--	----

### **Agamidae**

<i>Calotes grandisquamis</i>	61
<i>Microauris aurantolabium</i>	62

<i>Monilesaurus acanthocephalus</i>	64
<i>Monilesaurus ellioti</i>	66
<i>Monilesaurus montanus</i>	67
<i>Psammophilus dorsalis</i>	68
<i>Salea anamallayana</i>	70
<i>Salea horsfieldii</i>	72

## **Gekkonidae**

<i>Cnemaspis anandani</i>	74
<i>Cnemaspis australis</i>	75
<i>Cnemaspis beddomei</i>	76
<i>Cnemaspis indica</i>	77
<i>Cnemaspis nilagirica</i>	78
<i>Cnemaspis nimbus</i>	79
<i>Cnemaspis palanica</i>	80
<i>Cnemaspis rubraoculus</i>	81
<i>Cnemaspis wallaceii</i>	82
<i>Dravidogecko anamallensis</i>	83
<i>Dravidogecko douglasadamsi</i>	84
<i>Dravidogecko janakiae</i>	85
<i>Dravidogecko meghamalaiensis</i>	86
<i>Dravidogecko tholpalli</i>	87

## **Scincidae**

<i>Dasia subcaerulea</i>	88
<i>Kaestlea bilineata</i>	89
<i>Kaestlea palnica</i>	90

<i>Kaestlea travancorica</i>	91
<i>Ristella rurkii</i>	92
<i>Ristella travancorica</i>	93
<b>Glossary</b>	94
<b>Abbreviations</b>	99
<b>Checklist of reptiles occurring at &gt; 1,000 m elevations in Nilgiris, Anamalais, Meghamalai &amp; Agasthyamalai hill ranges</b>	100
<b>References</b>	103
<b>Acknowledgments</b>	109
<b>About the authors</b>	111



**Figure 1.** Sky islands in the Anamalai hills, Eravikulam National Park, Kerala



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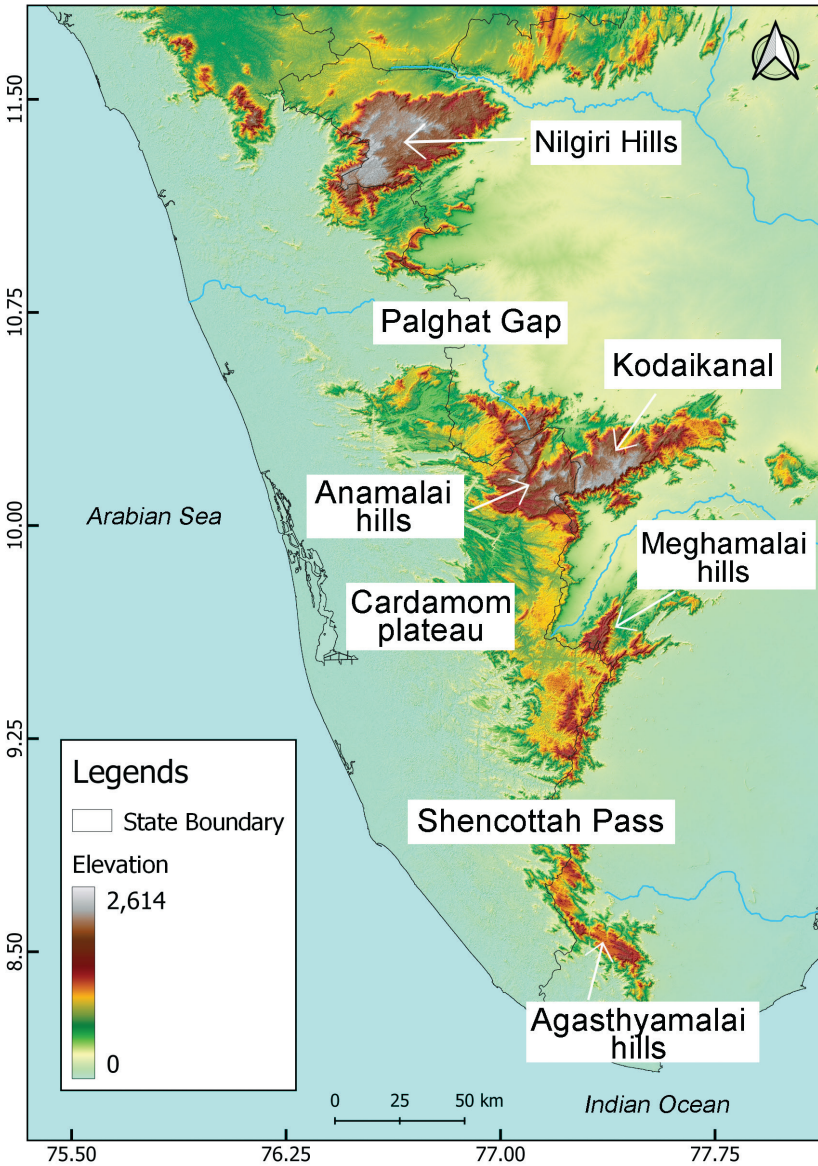
**Figure 2.** Sky islands in the Nilgiri hills with the endemic *Salea horsfieldii* pictured in the foreground. Mukuruthi National Park, Tamil Nadu



**Figure 3.** Sky islands in Meghamalai hills, Tamil Nadu



**Figure 4.** Montane habitat in Agasthyamalai hills, Kerala



**Figure 5.** Map of southern Western Ghats, India showing the four hill ranges with sky islands covered in this book. Geographic breaks in mountain chains are labeled and major river drainages are shown with blue lines.



## INTRODUCTION

The Western Ghats is one of the oldest mountain ranges in India, the Indian plate is estimated to have separated from Madagascar approximately 80 million years ago which was part of the Gondwana supercontinent (Gunnell and Harbor, 2008). The uplift of mountains in peninsular India is estimated to have occurred during the Neogene (23–2.6 million years ago) (Radhakrishna, 1993) and this process may have led to lineage diversification in at least some organisms in the Western Ghats (e.g., Vijayakumar et al, 2016). The montane Western Ghats biodiversity hotspot has a rich endemic fauna (Srinivasulu et al, 2014; Vijayakumar et al, 2016). Geographical isolation of populations is likely a major cause of high speciation in this region. Such isolation could be caused by habitat fragmentation, climatic barriers and/or geographic changes (e.g., mountain uplift; rising seas). The high elevation (>1,400 m) shola grassland-forest mosaics in the Western Ghats are highly patchy, discontinuous ‘sky island’ habitats. They are rich in endemic biodiversity, and highly threatened by anthropogenic pressure (Robin & Nandini, 2012). The rainforests of India were much more widespread during the Palaeocene-early Eocene (ca. 57–66 Million years ago) and the southern Western Ghats is one of the main areas now harbouring remnant wet forests (Prasad et al, 2009). The southern Western Ghats are often defined as the mountains South of the lowland Palghat Gap (Pascal et al, 2004). In this study we consider all areas in the Nilgiri hills and South of this as the southern Western Ghats.

The southern Western Ghats is the most geographically complex and species-rich part of the range, with the highest “sky island” forest-grassland mosaic habitats differing substantially to those at lower elevations (Figures 1–4). These sky islands are separated from each other physically and environmentally, but have similar communities of species distinct from those elsewhere in the Western Ghats. Genetic studies show that intervening lower and/or drier habitats form biogeographic barriers that have promoted diversification of Western Ghats frogs and birds (Vijayakumar et

al, 2016; Robin et al, 2015). Until recently this information was lacking for any of the reptile fauna of sky islands in the Western Ghats but a few studies have begun to address this knowledge gap (Chaitanya et al, 2019; Deepak et al, 2020; Mallick et al, 2020; Mallick et al, 2021, Pal et al, 2021). The lowland Palghat Gap is an important biogeographic barrier that might have promoted lineage diversification in the flanking mountains (Gower et al, 2002, 2007; Vidya et al, 2005; Robin et al, 2010; Vijayakumar et al, 2016). Robin et al, (2010) and Vijayakumar et al. (2016) found the basal divergences within their bird and frog molecular trees were between lineages confined to the north and south of the Palghat Gap, whereas *Xylophis* from south of the Gap are identified as paraphyletic with respect to those from north of the Gap (Deepak et al, 2020), and this also appears to be the case in *Dravidogecko* (Chaitanya et al, 2019; Shameer et al, 2021). Recent phylogenetic studies on reptiles of Western Ghats sky islands provide some indication of different patterns in species relationships compared to other vertebrates. However, taxon sampling is still incomplete and further investigation is required to understand the extent to which patterns of relations are similar among different reptile groups and between them and other organisms.

We have included reptiles from four main hill ranges in this book, namely: Nilgiris, Anamalai (including Kodaikanal), Megamalai and Agasthyamalai (referred as Agasthyamala in Kerala) (Figure 5). Among these four mountain ranges, Nilgiris and Anamalais have the highest surface areas > 1,500 meters above sea level (asl), followed by Megamalai and Agasthyamalai (Figure 5). The latter two mountain ranges are also not as high as the former two mountain ranges (Figure 5). The forest-grassland mosaic sky islands in these hill ranges extend down to approximately 1,000 m elevation in the Agasthyamalai and Megamalai whereas in most places in Nilgiris and Anamalais at this elevation there are forests that are contiguous with those at mid elevations. The fauna of the Nilgiris and Anamalais were also better documented previously, possibly due to the long history of forest and estate management and game hunting during

the colonial period (Price, 1908, Nair, 1991). However, in spite of relatively smaller surface areas, Megamalai and Agasthyamala each have their own unique set of species, many of which are endemic.

Although some of these mountains were explored for nearly two centuries, in the recent times 17 species of reptiles have been described from these four mountain ranges (Pal et al, 2018, 2021; Chaitanya et al, 2020; Deepak et al, 2020; Murthy et al, 2019; Mallik et al, 2020, 2021). Rainfall varies considerably within and between these mountain ranges depending on the slopes and latitude. Although all these areas receive higher amounts of rainfall from the Southwest monsoon, areas south of the Palghat Gap also receive a considerable amount of rain from the Northeast monsoon and consequently have shorter dry periods (Pascal 1982; Barboni et al, 2003).

Temperatures in the sky islands (>1,000 m) also vary considerably (Shameer et al, 2021), but are often cooler than elevations <1,000 m. Temperature also varies depending on the slopes, with eastern slopes often being warmer than the western slope. Under the now rapidly transforming global climate, many species are reported to migrate into higher elevations from their previous range (Huey et al, 2009). Such studies on range shifts are yet to be conducted in the Western Ghats and this is partly due to lack of clear baseline information. Additionally, in the Western Ghats parts of the higher elevations (Nilgiris, Munnar and Kodaikanal) are modified extensively for agriculture and tourism. Therefore, we believe that it is extremely important to better document the unique reptilian diversity in these vulnerable landscapes.

We have compiled a checklist of snakes and lizards found >1,000 m elevations in the four mountain ranges covered in this book. Some genera of lizards (*Draco*, *Cyrtodactylus*, *Hemidactylus*) are absent from elevations >1,000 m. *Salea*, *Proahaetulla*, *Dravidogecko* (also found ~800m in some areas) and *Microauris* are genera that are exclusively found in the sky islands of southern Western Ghats.

In this book we cover 58 species of reptiles (30 snakes and 28 lizards) from four mountain ranges in southern Western Ghats. Most of the species covered in this book are found at elevations >1,500 m (except in Agasthyamalai species >1,000 m were included). Some of the species are also found in the mid elevations, but many widespread species are not covered in this book. We have included a checklist of species found in the high elevations (<1,000 m) in these four mountain ranges. Some of the montane endemic species were excluded because we lacked good colour pictures of them in life or colour illustration. Eighteen out of the 58 species covered in this book were described in the past five years, highlighting the probable incompleteness of taxonomically accurate reptile inventories for this biodiversity hotspot. This book is a preliminary summary of some aspects of our research and fieldwork in the southern Western Ghats over the past few decades. We were able to do targeted field surveys to document this diversity and compile this field guide with the support of the National Geographic Explorer project.

## HOW TO USE THIS BOOK

This book is mainly a photographic field guide with brief species accounts and a history of systematic studies on lizards and snakes from this region. Species coverage in this book is not exhaustive - we lacked photograph and/or precise elevation data for some species. We tried to include photographs of both sexes where the species are sexually dimorphic, in some cases we also illustrate some of the observed colour variation. We have broadly divided this book into two sections, one for snakes and another for lizards and these main sections are further subdivided into families within these two broad groups. Maximum known total length (TL) and snout-vent length (SVL) is provided for each species in the top right corner. For snakes, dorsal scaled round the body were recorded one head-length behind the neck, at midbody and one head-length ahead of the vent. Locality information on the map is shown only for the four hill ranges covered in this book and some species distributions may extend beyond those depicted in this book. Current IUCN Red List status is given as abbreviated symbols for each species. The colour-coded checklist at the end of this book might be helpful to monitor future range shifts for species occurring in these hill ranges. A glossary of the terms used in the identification section is provided.

**CHAPTER 1**  
**SNAKES OF THE SKY**  
**ISLANDS OF THE**  
**WESTERN GHATS**

Of the 340 currently recognised snake species occurring in India, 44 were described in the last 20 years, two of which were described from adjoining countries but reported in India. Twenty two of the 41 species of snakes described in recent years are from the Western Ghats. In total, 127 species of snakes are reported from the Western Ghats and a high proportion (50%; 62 species) of these species are found in the southern Western Ghats (Srinivasulu et al, 2014; current compilation). A large majority (24 species) of the snake species found in southern Western Ghats are montane endemics (see Table 1).

The vast majority of the species in the southern Western Ghats were described before India's independence (Smith, 1943; Whitaker & Captain, 2004). Richard Henry Beddome described many of the snake (particularly uropeltid) species from the southern Western Ghats; he was also the first conservator of forest in the Anamalai region. Post-independence there were limited studies on the systematics of the snakes of Western Ghats to the end of the twentieth century (Rajendran, 1985; Hutton, 1949; Smith, 1949; Whitaker & Dattatri, 1982). The present century has demonstrated that the snake inventory of this region is still incomplete (Gower & Winkler, 2007; Vogel & van Rooijen, 2011; Giri et al, 2017; Jins et al, 2018; Cyriac et al, 2020; Deepak et al, 2020; Mallick et al, 2020, 2021; Narayanan et al, 2021; Sampaio et al, 2020). We provide information on 11 species of uropeltids, nine colubrids, six viperids, three pareids and one elapid.

## Günther's Vine Snake

*Ahaetulla dispar*

TL 650 mm

Family: Colubridae



### Identification:

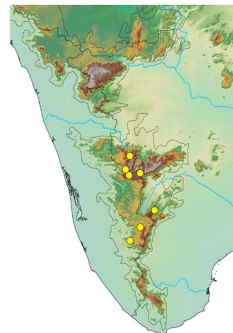
A medium to long, slender snake with elongated head and pointed snout. Dorsal scales smooth, in 15 rows at midbody. Tail long. Ventrals 139–159; subcaudals 103–125; anal divided. Eye with horizontal pupil. Loreals 1–2, rarely absent. Dorsal body olive green to brownish with two white or yellowish lateral stripes along the ventrals. Ventral surface pale green or brownish.

### Habit & Habitat:

A diurnal and semi-arboreal species often found in low bushes, on the rocks and sometimes in grasslands of high-elevation evergreen shola forests and grasslands >1,400.

### Distribution:

TN & KL: Anamalai hills, Megahamalai-Srivilliputhur hills, Munnar hills.







Brownish morph of *Ahaetulla dispar*

## Travancore Vine Snake

*Ahaetulla travancorica*

TL 640 mm

Family: Colubridae



### Identification:

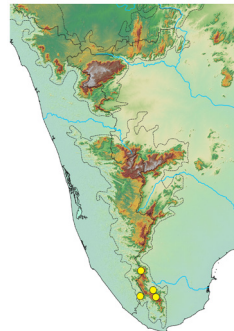
A medium to long slender snake with elongated head and pointed snout. Dorsal scale rows 15 at midbody; vertebral scales mildly keeled, other scale rows smooth. Tail long. Ventrals 153–160 notched with keel; subcaudals 125–130; anal divided. Eye with a horizontal pupil. Loreals 1–2, sometimes absent. Dorsal body olive green to brownish with two white or yellowish lateral stripes along the ventrals. Ventral surface pale green or brownish.

### Habit & Habitat:

A diurnal and semi-arboreal species often found in low bushes, on rocks and sometimes in grasslands of high-elevation evergreen shola forests >1,400 m.

### Distribution:

TN & KL: Agasthyamalai hills.



## Bronze-headed Vine Snake

*Ahaetulla perroteti*

TL 450 mm

Family: Colubridae



### Identification:

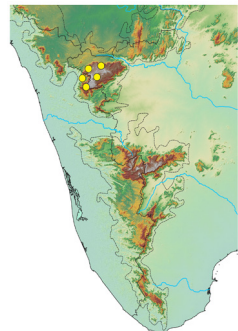
A short slender snake with elongated head and pointed snout; no dermal appendage. Dorsal scales smooth, strongly keeled at the sacral region (only males), in 15 rows at midbody. Tail long. Ventrals 136–146 notched with keel; subcaudals 65–86; anal divided. Eye with horizontal pupil. Loreal absent. Dorsal body light to dark green (males); brownish (females): both with two white or yellowish lateral stripes along the ventrals. Ventral surface pale green or brownish.

### Habit & Habitat:

A diurnal and semi-arboreal species often found in low bushes, on rocks and sometimes in grasslands of high-elevation evergreen shola forests >1,900 m.

### Distribution:

TN & KL: Nilgiris, Silent Valley NP.



**Keeled Vine Snake**  
*Proahaetulla antiqua*

TL 1,200 mm  
Family: Colubridae



**Identification:**

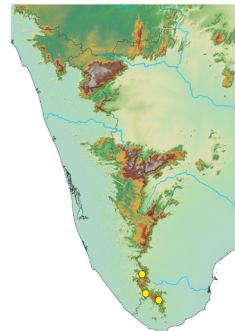
A long slender snake with an elongated head and blunt snout; dermal appendage absent. Dorsal scales smooth and strongly keeled in the sacral region (only males), in 15 rows at midbody. Tail long. Two long loreals, the first broadly in contact with nasals. Ventrals 196–207, subcaudals 160–165; anal divided. Eye with horizontal pupil. Dorsal body light green with two white or yellowish lateral stripes along the ventrals. Ventral surface greenish or creamish.

**Habit & Habitat:**

A diurnal and arboreal species often found in high-elevation evergreen shola forests and grasslands >1,000 m.

**Distribution:**

TN & KL: Agasthyamalai hills.



## Thackeray's Cat Snake

*Boiga thackerayi*

TL 1,250 mm

Family: Colubridae



### Identification:

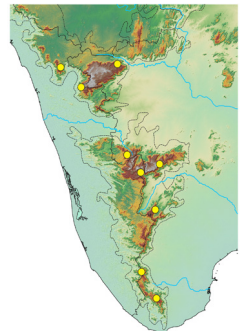
A long slender snake with a triangular head. Dorsal scales smooth, in 19 rows at midbody; vertebral scales hexagonal. Tail long. Ventrals 207–239; subcaudals 86–109; anal entire. Eye large with a vertical pupil. Dorsal body pale grey to yellowish-brown with a series of thin transverse black bands. Dorsal surface of head with irregular black blotches and a stripe from eye to angle of mouth. Ventral surface cream to yellowish, spotted with dark brown.

### Habit & Habitat:

A nocturnal, arboreal species often found in low bushes near streams, on tree trunks and crevices, occasionally seen on the forest floor after rains. Found in mid to high-elevation evergreen shola forests 800–1,000 m.

### Distribution:

TN & KL: Nilgiris-Wayanad-Silent Valley hill complex, Anamalai hills, Meghamalai, Kodaikanal, Agasthyamalai hills.



## Jerdon's Kukri Snake

*Oligodon venustus*

TL 490 mm

Family: Colubridae



### Identification:

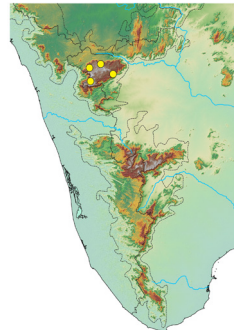
A small snake with a short, blunt head. Dorsal scales smooth, in 17 rows at midbody. Ventrals 138–165; subcaudals 27–36; anal divided. Tail short. Eye with round pupil. Loreal absent. Dorsal body olive brown with large, alternating, dark blotches that are edged with cream. Dorsal surface of head with three distinct crossbands; the second and third are medially connected. Ventral surface cream with distinct rectangular black blotches.

### Habit & Habitat:

A crepuscular, terrestrial species that is often found under logs and stones or on the forest floor in high evergreen shola forests and grasslands >1,000 m.

### Distribution:

TN & KL: Nilgiris hills.



## Travancore Kukri Snake

*Oligodon travancoricus*

TL 450 mm

Family: Colubridae



### Identification:

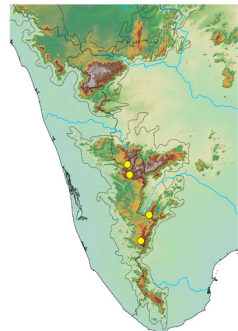
A small snake with a short, blunt head. Dorsal scales smooth, in 17 rows at midbody. Ventrals 138–165; subcaudals 29–39; anal divided. Tail short. Eye with round pupil. Loreal absent. Dorsal body olive-brown with a series of irregular, dark blotches that are edged with cream; these may connect to form bands. Dorsal surface of head with three distinct crossbands that are medially connected. Ventral surface cream with distinct, irregularly arranged, rectangular black blotches.

### Habit & Habitat:

A crepuscular, terrestrial species that is often found under logs and stones or on the forest floor in high evergreen shola forests and grasslands >1,000 m.

### Distribution:

TN & KL: Anamalai hills, Megahamalai-Srivilliputhur hills, Munnar hills.



## Short-tailed Kukri

*Oligodon brevicauda*

TL 500 mm

Family: Colubridae



### Identification:

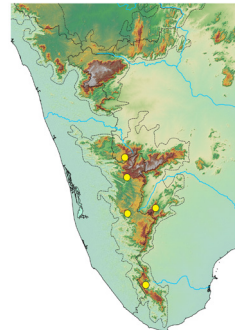
A small snake with a short, blunt head. Dorsal scales smooth, in 15 rows at midbody. Ventrals 158–173; subcaudals 25–29; anal divided. Tail short. Eye with round pupil. Loreal and internasals absent. Dorsal body brownish or reddish with three or four pale or dark, broad longitudinal stripes and a series of indistinct, widely spaced black spots. Dorsal surface of head with dark markings. Ventral surface reddish dun with distinct irregularly arranged rectangular black blotches.

### Habit & Habitat:

A crepuscular, terrestrial species that is often found under logs and stones, or on the forest floor in high evergreen shola forests and grasslands >1,000 m.

### Distribution:

TN & KL: Anamalai hills, Megahamalai-Srivilliputhur hills, Munnar hills.







Reddish morph of *Oligodon brevicauda*



Ventral side of *Oligodon brevicauda* showing black blotches

## Beddome's Keelback, Nilgiri Keelback

*Hebius beddomei*

TL 650 mm

Family: Colubridae



### Identification:

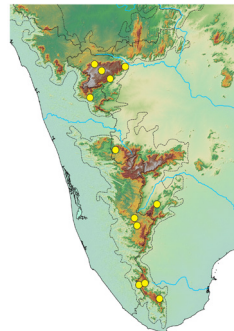
A medium-sized, slender snake; head broader than neck. Dorsal scales strongly keeled, in 19 rows at midbody. Tail long. Ventrals 140–150; subcaudals 62–82; anal entire. Eye with round pupil. Adults: dorsal body brown with a series of small irregular black blotches and white markings that are sometimes restricted to the forebody; interscale skin on dorsum with scattered white markings. A broad white stripe bordered by black extends downwards from behind eye towards nape. Ventral surface generally brown with black speckles. Juveniles dark with single bright band on nape.

### Habit & Habitat:

A nocturnal and terrestrial species often found on the forest floor, in leaf litter or in marshy regions. Found in mid to high elevation evergreen shola forests 600–1,000 m.

### Distribution:

TN & KL: Nilgiris-Wayanad-Silent Valley hill complex, Anamalai hills, Meghamalai, Kodaikanal, Agasthyamalai hills.



## Striped Coral Snake

*Calliophis nigrescens*

TL 1,150 mm

Family: Elapidae



### Identification:

A long slender snake, head slightly broader than the neck. Dorsal scales smooth, in 13 rows at midbody. Tail short. Ventrals 234–251; subcaudals 29–48; anal entire. Eye dark with an indistinct round pupil.

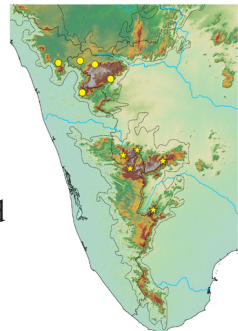
***C. n. nigrescens*:** Dorsal body pale to dark brown with five broad black longitudinal stripes that are white-edged; stripes sometimes absent. Head black with a broad white collar on the neck.

***C. n. pentalineatus*:** Dorsal body pale or bright red with five broad black longitudinal stripes and three stripes on the tail. Head black with a broad white collar on the neck.

Ventral surface reddish dun colour and edge of the tail with white and red markings for both sub-species.

### Habit & Habitat:

A crepuscular and terrestrial species often found under logs and stones or on the forest floor in higher elevation evergreen shola forests and grasslands. Venomous (probably mildly).



**Distribution:**

*C. n. pentalineatus*: marked with stars in map

TN & KL: Anamalai hills, Megahamalai-Srivilliputhur hills, Munnar hills.

*C. n. nigrescens*: marked with circles in map

TN & KL: Nilgiris, Silent Valley NP and Wayanad.



*Calliophis nigrescens nigrescens*



*Calliophis nigrescens pentalineatus*

## Anamalai Woodsnake

*Xylophis mosaicus*

SVL 400 mm

Family: Pareidae

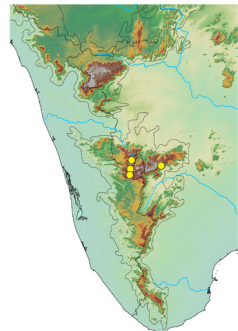


### Identification:

A small stout snake with a narrow head that is not wider than the 'neck'. Dorsal scales smooth, in 13:13:13 rows. Ventrals 128–147; subcaudals 17–34; anal divided. A long loreal present between ocular and nasal. Posterior genials in contact with one another. Tail short. Dorsal body colour varies from a darker dorsum with scattered pale yellow-edged scales, to a yellowish dorsum with scattered black specks, or may be uniform black. Ventral surface of body yellowish, speckled with black; or entirely black.

### Habit & Habitat:

A presumably diurnal semi-burrowing snake, often found in the grasslands and under the decaying logs in shola forests >1,500 m. One female was reported laying seven eggs during December. Feeds on earthworms and possibly other invertebrates.



### Distribution:

TN: Kodaikanal. KL: Eravikulam NP, Meeshapulimala, Munnar.

## Perrotet's Woodsnake

*Xylophis perroteti*

TL 575 mm

Family: Pareidae



### Identification:

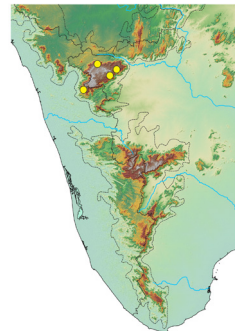
A small stout snake with a narrow head that is not distinct from the neck. Dorsal scales smooth, in 13:13:13 rows. Ventrals 130–141; subcaudals 12–40; anal divided. A long loreal present between ocular and nasal. Posterior genials separated by first ventral. Tail short. Dorsal body colour varies from dark blackish-brown with scattered pale scales that form irregular pale blotches; or dorsum uniform black. Ventral surface of body yellowish, speckled with black; or entirely black.

### Habit & Habitat:

A presumably diurnal, semi-burrowing snake, often found in grasslands and under leaf litter, decaying logs and under stones in shola forests. Feeds on earthworms. Found in high elevation evergreen and shola forests above 1,500 m.

### Distribution:

TN: Nilgiris. KL: Silent Valley NP, Wayanad.



**Günther's Woodsnake**  
*Xylophis stenorhynchus*

TL 240 mm  
Family: Pareidae



© Praveen HN

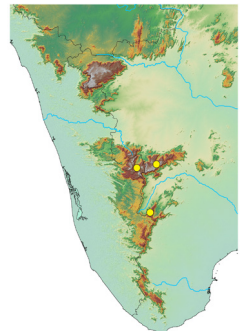


**Identification:**

A very small slender snake with a narrow head that is not distinct from the neck. Dorsal scales smooth, in 15:15:15 rows. Ventrals 120–135; subcaudals 14–29; anal divided. A long loreal present between ocular and nasal. Posterior genials separated by first ventral. Tail short. Dorsal body brown with iridescent scales. Three to five indistinct longitudinal stripes present on dorsum. A distinct pale collar is present on the nape.

**Habit & Habitat:**

A presumably diurnal semi-burrowing snake, found under decaying logs and stones in shola forests. Feeds on earthworms. Found in high elevation evergreen and shola forests above 1,500 m.



**Distribution:**

TN: Meghamalai WLS. KL: Munnar.

## Anamalai Pitviper

*Craspedocephalus anamallensis*

TL 910 mm

Family: Viperidae



### Identification:

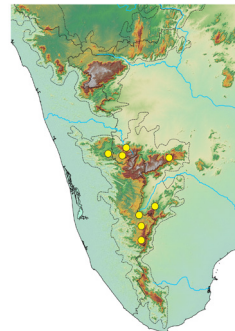
A medium-sized, stout snake with a triangular head that has small scales on its dorsal surface. Dorsal scales keeled, in 21 rows at midbody. Ventrals 144–157; subcaudals 50–62; anal entire. Tail short and prehensile. Eye with vertical pupil. Several colour morphs exist - greenish blue, bright yellow, green, rufous-brown and bright orange-red; most have dark irregular blotches or broad dark bands on the dorsum.

### Habit & Habitat:

A nocturnal and arboreal snake that is mostly seen on low bushes, trees and in rock crevices, also found on rocks near streams and in tea, coffee and cardamom plantations from 100 to 1,800 m. Venomous (probably mildly).

### Distribution:

TN & KL: Anamalai-Palani hills complex, Periyar hills, Meghamalai-Srivilliputhur hill complex.





## Travancore Pitviper

*Craspedocephalus travancoricus*

TL 900 mm

Family: Viperidae



### Identification:

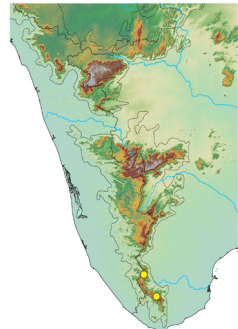
A medium-sized, stout snake with a triangular head that has small scales on its dorsal surface. Dorsal scales keeled, in 21–23 rows at midbody. Ventrals 147–157; subcaudals 55–56; anal entire. Tail short and prehensile. Eye with vertical pupil. Several colour morphs exist - greenish blue, bright yellow, green, rufous-brown and bright orange-red; most have dark irregular blotches or broad dark bands on the dorsum.

### Habit & Habitat:

A nocturnal and arboreal snake that is mostly seen on low bushes, trees and in rock crevices, also found on rocks near streams and in tea, coffee and cardamom plantations from 100 to 1,800 m. Venomous (probably mildly).

### Distribution:

TN & KL: Agasthyamalai hill complex.



## Malabar Pitviper

*Craspedocephalus malabaricus*

TL 890 mm

Family: Viperidae



### Identification:

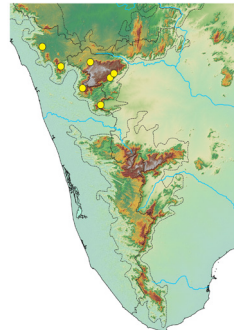
A medium-sized, stout snake with a triangular head that has small scales on its dorsal surface. Dorsal scales keeled, in 19–23 rows at midbody. Ventrals 145–149; subcaudals 52–54; anal entire. Tail short and prehensile. Eye with vertical pupil. Several colour morphs exist – greenish blue, bright yellow, green, rufous-brown and bright orange-red; most have dark irregular blotches or broad dark bands on the dorsum.

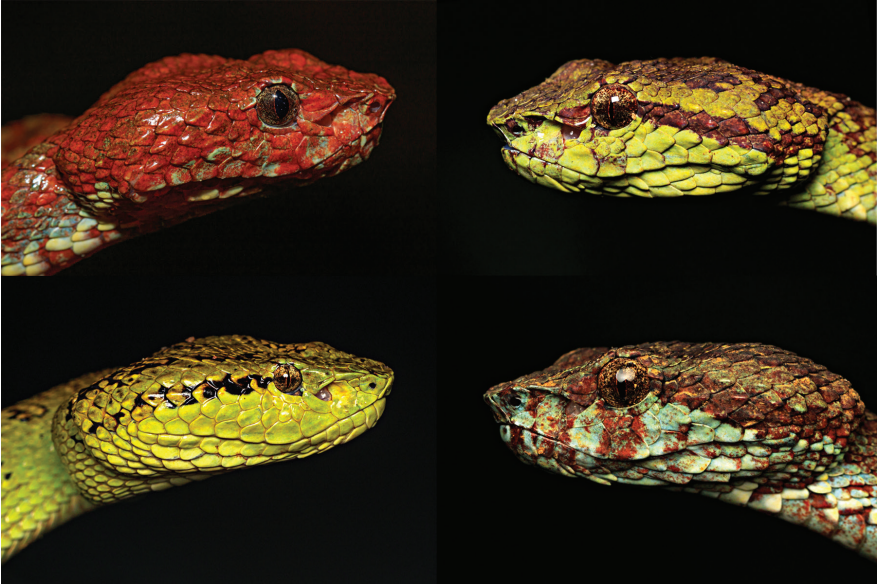
### Habit & Habitat:

A nocturnal and arboreal snake mostly seen in the low bushes, tree and rock crevices, along the rocks on the streams and also found in the tea, coffee and cardamom plantations 100 to 1,800 m. Venomous (probably mildly).

### Distribution:

TN & KL: Nilgiris-Wayanad-Silent Valley hill complex including the Attapadi and Siruvani ranges.





Different colour morphs of *Craspedocephalus malabaricus*

## Horseshoe Pitviper

*Craspedocephalus strigatus*

TL 480 mm

Family: Viperidae

©Gnaneswar CH



### Identification:

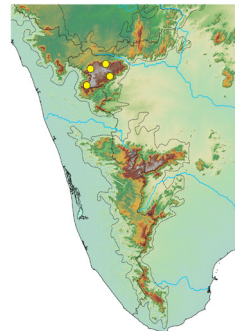
A small, stout snake with a triangular head that is distinct from the neck. Dorsal scales weakly keeled, in 21 (rarely 23) rows at midbody. Ventrals 134–142; subcaudals 32–44; anal entire. Tail short. Eye with vertical pupil. Dorsal body greyish-brown with faint black dark-edged irregular blotches. A distinct “U” shaped (horseshoe-like) yellowish or whitish mark on the nape. Ventral surface white to yellowish with densely scattered dark markings.

### Habit & Habitat:

A nocturnal and terrestrial snake often found around shola edges and grasslands above 1,700 m. Mostly seen on open rocky areas, edges of rocks in the grasslands, and also in tea plantations. Venomous (probably mildly).

### Distribution:

TN: Nilgiris. KL: Silent Valley NP.



## Southern Large-scaled Pitviper

*Craspedocephalus peltopelor*

TL 1,000 mm

Family: Viperidae



### Identification:

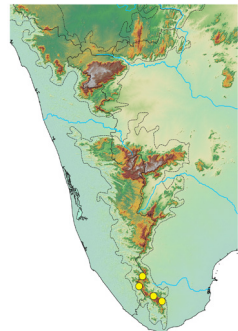
A medium-sized, stout snake with a triangular head that has large shields (scales) on its dorsal surface. Dorsal scales keeled, in 10–14 rows at midbody. Ventrals 150; subcaudals 59–64; anal entire. Tail short and prehensile. Eye with vertical pupil. Dorsal body green overall with cream or white lateral stripe on each side. Sides of head below eyes usually yellowish; ventral aspect of head cream. Ventral surface of body uniform yellowish-green or green.

### Habit & Habitat:

A nocturnal and arboreal snake that is mostly seen on low bushes, trees and rockcrevices, also found on rocks near streams and in tea and cardamom plantations above 1,000 m. Individuals have been seen on the same branch for a long time during the winter. Venomous (probably mildly).

### Distribution:

TN & KL: Agasthyamalai hill complex.



## Large-scaled Pitviper

*Craspedocephalus macrolepis*

TL 920 mm

Family: Viperidae



### Identification:

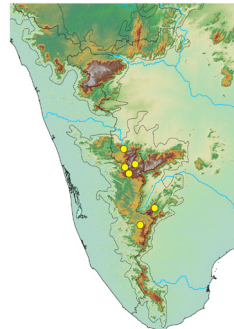
A medium-sized, stout snake with a triangular head that has large shields (scales) on its dorsal surface. Dorsal scales keeled, in 13–19 rows at midbody. Ventrals 133–143; subcaudals 50–57; anal entire. Tail short and prehensile. Eye with vertical pupil. Dorsal body green overall with a cream or white lateral stripe on each side. Sides of head below eyes usually yellowish; ventral aspect of head cream. Ventral surface of body uniform yellowish-green or green.

### Habit & Habitat:

A nocturnal and arboreal snake that is mostly seen on low bushes, trees, in rock crevices, also found on rocks near streams, in tea and cardamom plantations > 1,500 m. Individuals have been seen on the same branch for a long time during the winter. Venomous (probably mildly).

### Distribution:

TN: Anamalai hills, Palani hills, Meghamalai-Srivilliputhur hill complex.  
KL: Munnar hills, Eravikulam NP, Mathiketan shola, Sivagiri-Devagiri hill complex.



## Perrotet's Shieldtail

*Plectrurus perroteti*

TL 440 mm

Family: Uropeltidae



### Identification:

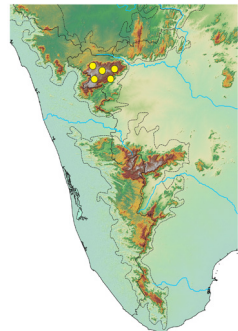
A small slender snake with a pointed head; dorsal scales smooth in 15:15:15 rows. Ventrals 152–180; subcaudals 6–12; anal divided. Supraocular present; eye within ocular scale; loreal absent. Tail short, blunt, slightly compressed laterally, with terminal scute ending in two small points. Dorsal body varying shades of brown; sometimes scales dark-edged; underside of tail orangish.

### Habit & Habitat:

A burrowing snake, often found under logs and stones and while digging in litter and loose soil. Found in high elevation evergreen and shola forests and adjacent low-intensity agricultural habitats > 1,500 m.

### Distribution:

TN: Nilgiris.



## Madurai Shieldtail

*Platyplectrurus madurensis*

TL 440 mm

Family: Uropeltidae



### Identification:

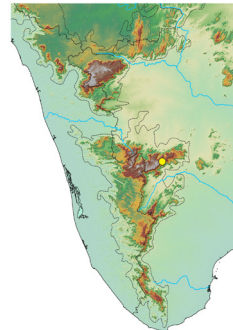
A small slender snake with a flattened and rounded snout; dorsal scales smooth, in 15:15:15 rows. Ventrals 149–175; subcaudals 10–16; anal divided. Supraocular, temporal present; eye distinct, not in ocular scale; loreal absent. Tail short, blunt, laterally compressed and ends in a single, pointed terminal scute. Dorsal body purplish-brown or dark-brownish overall; ventrals, subcaudals and two dorsal scale rows adjacent to ventrals pale yellow edged with brown.

### Habit & Habitat:

Habit & Habitat: A burrowing snake, often found under logs and stones or while digging litter and loose soil. Found in high elevation evergreen and shola forests > 1,200 m.

### Distribution:

TN: Palani hills (Kodaikanal).





## Three-lined Shieldtail

*Platyplectrurus trilineatus*

TL 390 mm

Family: Uropeltidae



©Nihal Jabin

### Identification:

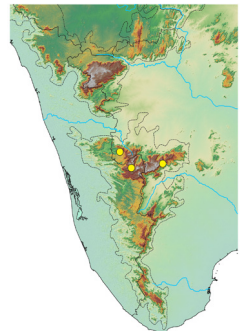
A small-sized slender snake with a flattened and rounded snout; dorsal scales smooth, in 15:15:15 rows. Ventrals 163–175; subcaudals 8–16; anal divided. Supraocular and temporal present; eye distinct, not in ocular scale; loreal absent. Tail short, blunt and laterally compressed, ends in a single, pointed terminal scute. Dorsal body brownish to reddish overall with two or more dark lines from neck to tail; ventrals and subcaudals pale brown.

### Habit & Habitat:

A burrowing snake, often found under logs and stones or while digging litter or loose soil. Found in high elevation evergreen and shola forests > 1,200 m.

### Distribution:

TN : Palani hills (Kodaikanal).  
KL: Munnar hills.



**Blood-red Shieldtail**  
*Teretrurus sanguineus*

TL 230 mm  
Family: Uropeltidae



**Identification:**

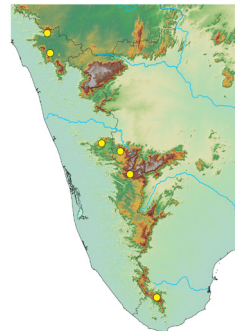
A small snake with a pointed head. Dorsal scales smooth in 15:15:15 rows. Ventrals 131–145; subcaudals 6–11; anal divided. Supraocular, postocular and temporal present; eye distinct, not within ocular scale. Tail short with weakly keeled, multicarinate scales; ends in a single, pointed terminal scute. Dorsal body uniform brownish overall; ventrals and subcaudals reddish-orange, sometimes with irregular black spots or blotches.

**Habit & Habitat:**

A burrowing snake, often found under logs or by digging litter or loose soil. Found in the high elevation evergreen forests and adjacent low-intensity agricultural land > 1,500 m.

**Distribution:**

TN: KMTR, Anamalai hills. KL: Munnar hills, Nelliampathy hills and Wayanad.



**Red-bellied Shieldtail**  
*Teretrurus rhodogaster*

TL 210 mm  
Family: Uropeltidae



**Identification:**

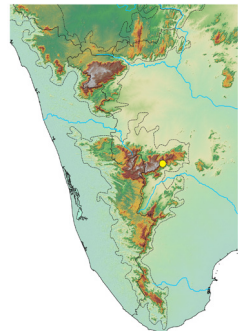
A small snake with a pointed head. Dorsal scales smooth in 15:15:15 rows. Ventrals 120–159; subcaudals 5–11; anal divided. Postocular and temporal present. Eye within ocular shield. Tail short with weakly keeled multicarinate scales; ends in a single, pointed terminal scute. Dorsal body uniform brown or black; ventrals and subcaudals reddish-orange.

**Habit & Habitat:**

A burrowing snake, often found under logs or by digging litter or loose soil. Found in high elevation evergreen forests and adjacent low-intensity agricultural habitats > 1,500 m.

**Distribution:**

TN: Palani hills (Kodaikanal).



## Pied-belly Shieldtail

*Melanophidium punctatum*

TL 560 mm

Family: Uropeltidae



Inset: ©Thalavai Pandi

### Identification:

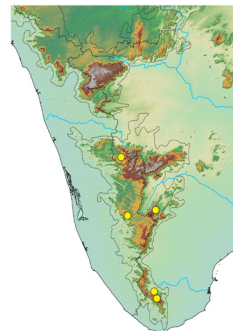
A small, slender snake with small head. Dorsal scales smooth in 15:15:15 rows. Ventrals 180–198; subcaudals 15–17; anal divided. Small eye within ocular shield. Tail short, tapered; ends in a single, terminal scute with variable ridges. Dorsal body uniform iridescent black, ventrals and subcaudals black with distinct white borders.

### Habit & Habitat:

A burrowing snake, often found under logs and in moist loose soil. Found in the high elevation evergreen forests and adjacent low-intensity agricultural habitats > 1,000 m.

### Distribution:

TN: Anamalai hills, KMTR, Meghamalai WLS.  
KL: Munnar hills.



## Günther's Shieldtail

*Uropeltis liura*

TL 320 mm

Family: Uropeltidae



### Identification:

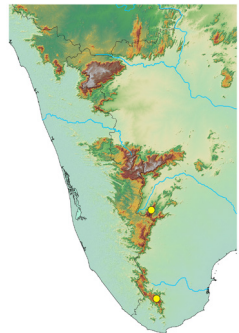
A small slender snake with a pointed head. Dorsal scales smooth, 17 rows at mid-body. Ventrals 173–188; subcaudals 8–12; anal divided. Eye within ocular shield. Tail blunt, rounded without distinct, flattened caudal disc; terminal scute ends in two points. Dorsal body purplish-black with numerous distinct yellow ocelli throughout. Anterior and posterior parts of the body are sometimes darker than midbody. Ventral coloration similar to that above.

### Habit & Habitat:

A burrowing snake, found under logs, and in loose moist soil. Found in high elevation evergreen forests and adjacent low-intensity agricultural habitats > 1,000 m.

### Distribution:

TN: KMTR, Meghamalai WLS.



**Madura Shieldtail**  
*Uropeltis madurensis*

TL 450 mm  
Family: Uropeltidae



**Identification:**

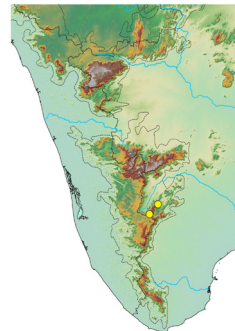
A small slender snake with pointed head. Dorsal scales smooth, in 17 rows at midbody. Ventrals 144–157; subcaudals 7–10; anal divided. Tail short, blunt and rounded with a distinct flattened caudal disc bearing multicarinate scales at the end of which is a two-pointed terminal scute. Dorsal body dark brown or black with yellow-edged scales. Ventral surface darker with large irregular yellow blotches.

**Habit & Habitat:**

A burrowing snake, found under logs and in litter and moist, loose soil; sometimes seen on the surface after rains. Found in high elevation evergreen forests >1,200 m.

**Distribution:**

TN: Meghamalai WLS.



**Palni Shieldtail**  
*Uropeltis pulneyensis*

TL 380 mm  
Family: Uropeltidae



**Identification:**

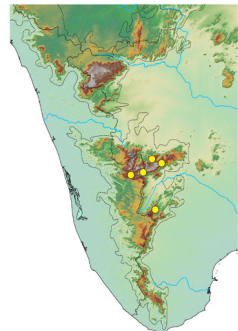
A small slender snake with a pointed head. Dorsal scales smooth, in 17 rows at midbody. Ventrals 156–180; subcaudals 6–13; anal divided. Tail blunt and rounded; ends in a single enlarged terminal scute. Dorsal body dark brown or black with a yellow streak from the lip scales that continues onto the anterior body. Ventrals darker with large irregular yellow blotches.

**Habit & Habitat:**

A burrowing snake, found under logs, or in loose, moist soil; sometimes seen on the ground after rains. Found in high evergreen and shola forests >1,200 m.

**Distribution:**

TN: Palani hills (Kodaikanal), Meghamalai  
WLS.



**Red-spotted Shieldtail**  
*Uropeltis rubromaculata*

TL 380 mm  
Family: Uropeltidae

©Lilly E Linden



DD

**Identification:**

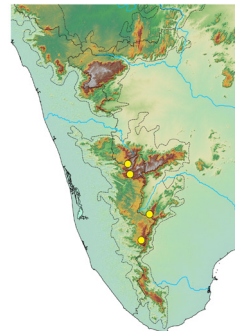
A small slender snake with a pointed head. Dorsal scales smooth, in 17 rows at midbody. Ventrals 127–136; subcaudals 7–10; anal divided. Tail blunt and rounded with a distinct caudal disc bearing multicarinate scales; terminal scute ends in two spines. Dorsal body olive brown, posterior part of body paler. Sides of body with a few large red blotches, and one on each side of the tail. Ventral scales with scattered red and yellow specks.

**Habit & Habitat:**

A burrowing snake, found under logs or in loose, moist soil; sometimes seen on the ground after rains. Found the high elevation evergreen and shola forests > 1,000 m.

**Distribution:**

TN & KL: Anamalai hills, Megahamalai-Srivilliputhur hills, Munnar hills.





**Red-lined Shieldtail**  
*Uropeltis rubrolineata*

TL 350  
Family: Uropeltidae



©Jins VJ

**Identification:**

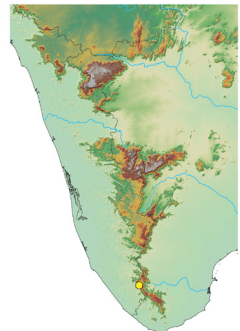
A small slender snake with a pointed head. Dorsal scales smooth, in 17 rows at midbody. Ventrals 165–172; subcaudals 6–8; anal divided. Tail blunt with distinct flattened caudal disc bearing multicarinate scales. Dorsal body blackish with a broad orange stripe along each side. Ventral aspect of body orange and black.

**Habit & Habitat:**

A burrowing snake, found under logs, or in loose soil; sometimes seen on the ground after rains. Found in high evergreen and shola forests > 1,000 m.

**Distribution:**

TN & KL: Agasthyamalai hills and possibly Anamalai hills.





**CHAPTER 2:**  
**LIZARDS OF THE SKY**  
**ISLANDS OF THE**  
**WESTERN GHATS**

Of the 354 currently recognised lizard species occurring in India, 132 were described in the last 20 years, one of which (*Calotes geissleri*) was described from Myanmar but also reported from India. Fifty eight of the 132 species of lizards described in recent years are from the Western Ghats. In total, 117 species of lizards are reported from the Western Ghats and a high proportion (48%; 56 species) of these species are found in the southern Western Ghats (Srinivasulu et al, 2014; current compilation). A considerable number (27 species) of the lizards found in southern Western Ghats are montane endemics (see Table 1).

Similar to the snakes, the vast majority of the lizard species in the southern Western Ghats were described before India's independence (Smith, 1935). Post-independence there were limited studies on the systematics of the lizards of Western Ghats in the twentieth century (Inger et al, 1984; Sharma, 1970, 1975) and most were of northern Western Ghats taxa. Subsequently there were almost no twentieth century studies focusing on the taxonomy of lizards in this region. The present century has proved that the inventory of the lizard fauna of this region is incomplete and likely grossly underestimated (Agarwal et al, 2020; Chaitanya et al, 2018, 2020; Cyriac et al, 2018; Harikrishnan et al, 2012; Murthy et al, 2019; Pal et al, 2018, 2021; Sayyed et al, 2019, 2020; Srikanthan et al, 2020; Das et al, 2022). Multiple new genera of lizards were also identified and described in the last two decades (see Eremchenko & Das, 2004; Pal et al, 2018, Srikanthan et al, 2021).

We provide information on 14 species of gekkonids, eight agamids and six scincids in this book, most but not all are restricted to the sky islands of the Western Ghats.

## Large-scaled Forest Lizard

*Calotes grandisquamis*

SVL 136 mm

Family: Agamidae



Adult male

LC

### Identification:

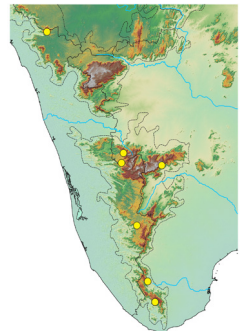
A large lizard with posterodorsally oriented lateral scales; well developed nuchal and dorsal crest; nuchal crest has long and curved spines (short in females), dorsal spine smaller (indistinct in females) and reducing in length towards the tail. Gular pouch present in males. 27–35 large and distinct midbody scale rows and 3–4 compressed supratympanic spine present. Dorsal body green with 2–3 transverse bars laterally. Head laterally darker and labials yellowish.

### Habit & Habitat:

Diurnal and arboreal lizard, known from the medium to high elevation wet evergreen forests (> 900 m). Often seen in the forest patches perching in the high canopies and also seen sleeping in the lower branches during the nights.

### Distribution:

TN & KL: Anamalai hills, Meghamalai-Srivilliputhur hills, Munnar hills.



**Small-eared Dragon; Orange-lipped Forest Lizard** SVL 70 mm

*Microauris aurantolabium*

Family: Agamidae



Adult female

**Identification:**

A medium-sized lizard with body scales acutely keeled; nuchal crest indistinct and poorly developed; supratympanic and postorbital spines absent; scales in head heterogenous and keeled. Tympanum very small. Dorsal body uniformly light-greenish with a distinct orangish or white streak above the lip till the end of the jaw. Gular scales yellowish green. This species is known only based on females.

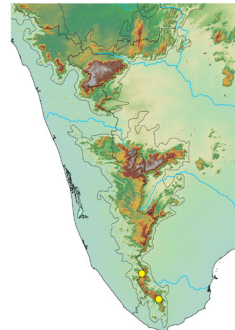
**Habit & Habitat:**

Diurnal and arboreal lizard, known from high elevation wet evergreen forests > 1,000 m, possibly a canopy dwelling species.

**Distribution:**

TN: KMTR.

KL: Peppara WLS & Neyyar WLS.





Colour variations in the streak marking of *Microauris aurantolabium*

## Spiny-headed Forest Lizard

*Monilesaurus acanthocephalus*

SVL 73 mm

Family: Agamidae



### Identification:

A medium-sized lizard with body scales oriented back and downwards; six long well-developed spines in the nuchal crest and two long supratympanic spines present; dorsal crest in the form of serrated scales; dorsal, lateral and ventral scales strongly keeled. 62–64 midbody scale rows; Dorsal body overall olive red with light brown head; mid dorsum with irregularly arranged red and black alternating blotches. Three black lateral lines from the posterior of the eye to the tympanum. Tail banded with alternating brown and grey blotches.

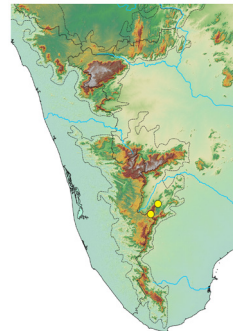
### Habit & Habitat:

Diurnal and a semi-arboreal to arboreal lizard known from high elevation evergreen forests and the edges of forests and tea plantations > 1,500 m. Individuals are observed in lower shrubs and branches.

### Distribution:

TN: Meghamalai WLS.

KL: Periyar Tiger Reserve.







Adult female of *Monilesaurus acanthocephalus*

## Elliot's Forest Lizard

*Monilesaurus ellioti*

SVL 74 mm

Family: Agamidae



Adult male

### Identification:

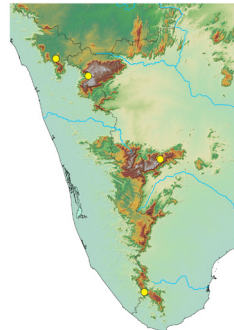
A medium-sized species with body scales oriented back and downwards; 3–4 long well-developed spines in the nuchal crest and two small supratympanic spines present with a long distinct postorbital spine; dorsal, lateral and ventral scales keeled. 52–58 midbody scale rows. Dorsal body blackish-brown with laterally blackish head; mid dorsum with irregular light patches. A distinct white spot below the posterior end of the eye. Tail banded with alternating brown and gray blotches.

### Habit & Habitat:

Diurnal and a semi-arboreal to arboreal lizard known from mid-high elevation semi-evergreen and evergreen forests (700–1,250 m) and the edges of forests, coffee and cardamom plantations. Individuals are observed in lower shrubs and branches.

### Distribution:

TN: Nilgirs hills, Anamalai hills and KMTR  
KL: Wayanad, Agasthyamalai hills.



**Montane Forest Lizard**  
*Monilesaurus montanus*

SVL 85 mm  
Family: Agamidae



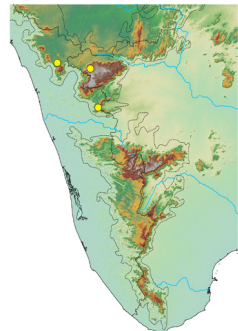
Adult female

**Identification:**

A medium-sized lizard with body scales oriented back and downwards; 3–6 small spines in the nuchal crest and two small supratympanic spines present; dorsal crest in the form of serrated scales; dorsal, lateral and ventral scales strongly keeled. Females with slightly smaller nuchal spine and lack dorsal crest. 46–52 midbody scale rows. Dorsal body yellowish-green with laterally greenish head; mid dorsum with alternating light and dark brown patches. A white band below the eye extends till the end of the jaw. Tail banded with alternating brown and gray blotches.

**Habit & Habitat:**

Diurnal and a semi-arboreal to arboreal lizard known from high elevation evergreen forests (> 1,250 m) and the edges of forests, coffee and cardamom plantations. Individuals are observed in lower shrubs and branches.



**Distribution:**

TN: Nilgiris, Elival malai; Karnataka: Brahmagiri, Kudremukh; KL: Wayanad, Silent Valley, Varadimala.

## Peninsular Rock Agama

*Psammophilus dorsalis*

SVL 110 mm

Family: Agamidae



### Identification:

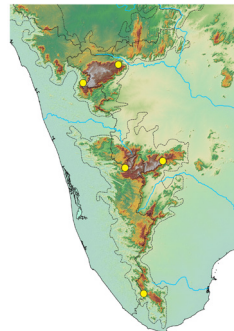
A medium to large lizard with lateral scales oriented posterodorsally; nuchal crest composed of 15–18 reduced triangular spines and dorsal crest absent in females; dorsal and lateral scales keeled and ventral scales strongly keeled. 94–148 midbody scale rows. Dorsal body of males uniform grayish to black with indistinct blotches laterally; males turn bright yellowish to reddish-orange during breeding plumage. Females with two dark dorsolateral stripes from the neck to the tail with dark speckling in both dorsum and laterally.

### Habit & Habitat:

Diurnal and rupicolous lizards known from low to high elevation forests (700-1,250 m) in rocky habitats. Often seen on huge rock boulders and the crevices between them.

### Distribution:

TN & KL: Nilgiris, Anamalais, Agasthyamalai, Elival malai, Silent Valley.





Adult female of *Psammophilus dorsalis*

## Anamalai Spiny Lizard

*Salea anamallayana*

SVL 100 mm

Family: Agamidae



Adult female

LC

### Identification:

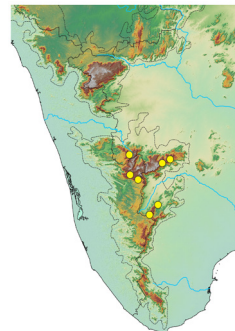
A medium-sized species with strongly imbricate large dorsal scales, sometimes with few large scales on the lateral sides. Males with a well-developed dorsal crest, backwardly oriented long spines extending to the laterally compressed tail. Dorsal crest shorter in females does not extend to tail, tail cylindrical. Gular pouch present in males. The dorsal body usually greenish to dark brownish in colour with a series of irregular reddish-orange or dark-brown lateral markings. A thick and dark lateral stripe on the head extends from the eye to the back of the jaw.

### Habit & Habitat:

Mostly found in abandoned buildings close to natural vegetation like wet evergreen forest. Found in elevations  $>1,100$  m.

### Distribution:

TN & KL: Anamalai hills, Meghamalai WLS.





Greenish morph of *Salea anamallayana* (adult male)



Brownish morph of *Salea anamallayana* (adult male)

## Horsfield's Spiny Lizard

*Salea horsfieldii*

SVL 99 mm

Family: Agamidae



### Identification:

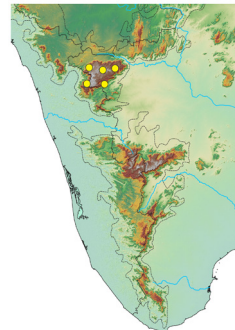
A medium-sized species with strongly imbricate large dorsal scales, sometimes with few large scales on the lateral sides. Males with a well-developed dorsal crest backwardly oriented long spines, short crest in females and nuchal crest absent in males. Gular pouch present in males. The dorsal body usually greenish to dark brownish in colour with a series of irregular reddish-orange or dark-brown transverse markings. A thick and dark lateral stripe on the head extends from the eye to the back of the jaw.

### Habit & Habitat:

A diurnal and arboreal lizard found in the high elevation (> 1,500 m) montane forests. Often seen in low bushes, on tree trunks and also on boulders.

### Distribution:

TN: Nilgiris. KL: Silent Valley NP.







Dark brownish morph of *Salea horsfieldii* (adult male)

## Anandan's Day Gecko

*Cnemaspis anandani*

SVL 41 mm

Family: Gekkonidae



### Identification:

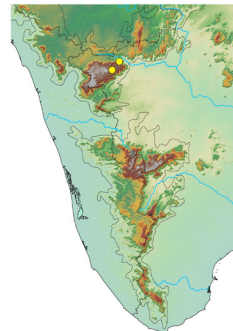
A medium-sized slender species. Dorsal scales heterogenous and keeled; and spine-like tubercles present on the flanks. Males with 5–6 femoral pores separated by 19 or 20 poreless scales and precloacal pores absent. Dorsal body grayish brown, with black-edged light elongated spots. Round dark black pupil. Ventral side of head anteriorly and the body below the neck bright yellowish.

### Habit & Habitat:

A diurnal and arboreal lizard found in the high elevation (> 1,500 m) montane forests. Often seen in rock crevices, under culverts and also in settlements.

### Distribution:

TN: Nilgiris.



## Southern Day Gecko

*Cnemaspis australis*

SVL 31 mm

Family: Gekkonidae



### Identification:

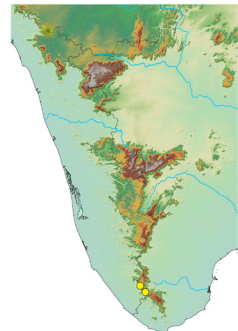
A small, slender species. Dorsal scales heterogenous with 12–15 rows of irregularly arranged rounded tubercles and spine-like tubercles present on the flanks. Males with 2–3 precloacal pores, 4–5 femoral pores on each thigh separated by 11–13 poreless scales. Round black pupil surrounded by thin yellow iris. Dorsal head darkish with yellow mottled patches. Dorsal body dark with lipale yellow elongated spots. Ventral side of the head whitish in throat and dark band below the infralabials. Ventral surface of the body predominantly pale to yellowish.

### Habit & Habitat:

A diurnal species found on tree trunks, boulders and crevices alongside streams. Also found in crevices of tree trunks and under rocks.

### Distribution:

TN & KL: Agasthyamalai hills.



## Beddome's Forest Gecko

*Cnemaspis beddomei*

SVL 53 mm

Family: Gekkonidae



### Identification:

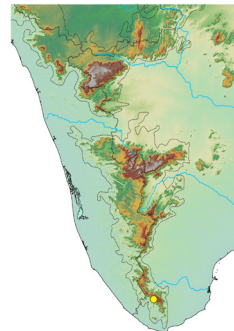
A large, stout species. Dorsal scales heterogenous with regularly arranged rounded tubercles and spine-like tubercles absent on the flanks. Males with 6–8 precloacal pores, femoral pores absent. Round black pupil surrounded by bright red iris. Dorsal head darkish with yellow mottled patches. Dorsal body dark with lighter yellowish longitudinal blotches. Ventral side of head whitish on throat and dark band below the infralabials. Ventral surface of body predominantly pale to yellowish.

### Habit & Habitat:

A nocturnal species found on boulders and in crevices alongside streams. Also found in crevices of tree trunks and under rocks > 1,000.

### Distribution:

TN: Agasthyamalai hills.



## Nilgiri Ground Gecko

*Cnemaspis indica*

SVL 35 mm

Family: Gekkonidae



### Identification:

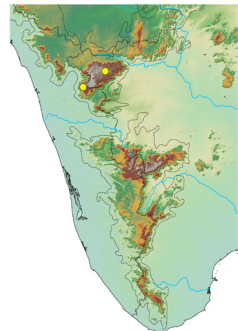
A small to medium sized, stout species. Dorsal scales imbricate and homogenous and spine-like tubercles absent on the flanks. Males with 4–5 femoral pores and precloacal pores absent. Dorsal body dark brown to black, with yellow to red reticulated striations and mid-dorsal stripe often present. Round dark black pupil with a thin golden yellow to orange iris. Ventral side pale gray to white.

### Habit & Habitat:

A (probably) crepuscular terrestrial species. Found in rock crevices and under stones in high elevation montane shola grasslands > 2,000 m.

### Distribution:

TN & KL: Nilgirs and Silent Valley NP.



## Nilgiri Day Gecko

*Cnemaspis nilagirica*

SVL 47 mm

Family: Gekkonidae



### Identification:

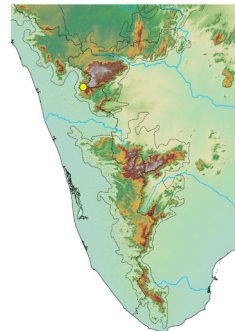
A medium-sized slender species. Dorsal scales homogenous and spine-like tubercles present on the flanks. Males with 4–6 femoral pores and precloacal pores absent. Dorsal body grayish brown, with black-edged light elongated spots. Round dark black pupil. Ventral side of head anteriorly and the body below the neck bright yellowish.

### Habit & Habitat:

A diurnal and predominantly terrestrial species often found on the ground, under logs and rocks in the evergreen forests of elevations between 1,700 and 1,950 m.

### Distribution:

TN & KL: Silent Valley NP, Mukurthi NP.



## Clouded Forest Gecko

*Cnemaspis nimbus*

SVL 48 mm

Family: Gekkonidae



NE

### Identification:

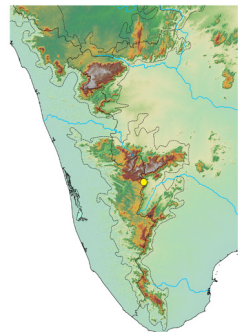
A large, stout species. Dorsal scales heterogenous with irregularly arranged rounded tubercles and spine-like tubercles absent on the flanks. Males with 4–6 precloacal pores, femoral pores absent. Round black pupil surrounded by brick red iris. Dorsal head dirty yellow with a yellow and black lateral stripe from nostril to beyond the eye. Dorsal body olive-yellow with alternating yellow and black blotches; a longitudinal yellowish band from the nuchal to the anterior of the tail. Ventral side of the head gray in throat surrounded by yellow and black reticulations and the body pale yellowish.

### Habit & Habitat:

A crepuscular species often found in rock crevices alongside streams and also found on mud walls of abandoned structures in evergreen forests > 1,500 m.

### Distribution:

KL: Mathikettan Shola NP.



## Palani Hills Day Gecko

*Cnemaspis palanica*

SVL 31 mm

Family: Gekkonidae



### Identification:

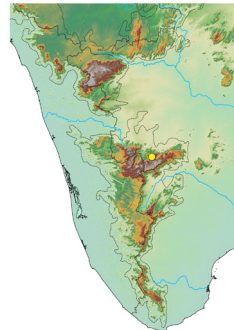
A small, slender species. Dorsal scales homogenous and spine-like tubercles present on the flanks. Males with 12–15 femoral pores and precloacal pores absent. Round dark black pupil. Dorsal head pale, with dark brown or gray markings. Dorsal body brownish, with longitudinal “W” shaped pale yellow bands. Ventral side of the head and the body uniformly yellowish.

### Habit & Habitat:

A diurnal species predominantly found on mud cliffs, also found on tree trunks and buildings. Found in high elevations evergreen forests > 1,500 m.

### Distribution:

TN: Palani hills (Kodaikanal).





## Ruby-eyed Forest Gecko

*Cnemaspis rubraoculus*

SVL 46 mm

Family: Gekkonidae

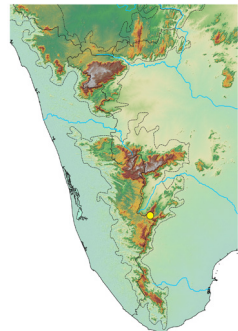


### Identification:

A medium-sized, stout species. Dorsal scales heterogenous with irregularly arranged rounded tubercles and spine-like tubercles absent on the flanks. Males with 6 precloacal pores, femoral pores absent. Round black pupil surrounded by thick blood red iris. Dorsal head dark with a pale yellow lateral stripe from nostril to beyond the eye. Dorsal body olive-brown, with longitudinal yellowish spots from the nuchal to the anterior of the tail. Ventral side of head with yellow speckles and black band parallel to the infralabials; body pale yellowish.

### Habit & Habitat:

Probably a nocturnal species, often found on tree trunks, in root gaps close to the ground, or under rocks. Found in high elevations evergreen forests > 1,500 m.



### Distribution:

TN: Meghamalai WLS. KL: Upper Manalar in Periyar Tiger Reserve.

## Wallace's Forest Gecko

*Cnemaspis wallacei*

SVL 46 mm

Family: Gekkonidae



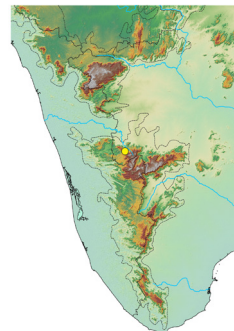
NE

### Identification:

A large, stout species. Dorsal scales heterogenous with regularly arranged rounded tubercles and spine-like tubercles absent on the flanks. Males with 8 precloacal pores, femoral pores absent. Round black pupil surrounded by thick red iris. Dorsal head dark with a dark lateral stripe from nostril to beyond the eye. Dorsal body with large irregularly arranged black and yellow blotches. Ventral side of the head darker on throat; whitish thick band along the infralabials. Ventral surface of the body grayish posteriorly and tail darker.

### Habit & Habitat:

A predominantly nocturnal species found on rock boulders, alongside streams and also on mud walls. Individuals were also found during the day within rock crevices. Found in high elevations evergreen forests > 1,200 m.



### Distribution:

TN: Anamalai Tiger Reserve.

**Anaimalai Dravidogecko**  
*Dravidogecko anamallensis*

SVL 54 mm  
Family: Gekkonidae



**Identification:**

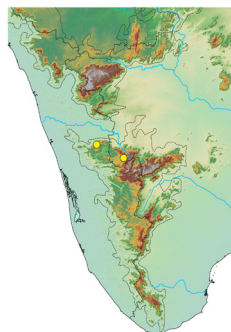
A small species with homogenous, small rounded granular scales dorsal scales. Pupil vertical. A series of 45 uninterrupted precloacal-femoral pores present. Lamella undivided in all the toes. Head creamish with irregular yellow and black mottling. Dorsal body generally creamish with irregular black streaks from the nuchal to the tail. Ventral surface of the body uniformly pale.

**Habit & Habitat:**

Mostly found in abandoned buildings close to natural vegetation like the wet evergreen forest. Found in high elevations evergreen forests > 1,100 m.

**Distribution:**

TN: Anamalai Tiger Reserve.  
KL: Nelliampathy.



## Adams' Dravidogecko

*Dravidogecko douglasadamsi*

SVL 49 mm

Family: Gekkonidae



©Karthik AK

### Identification:

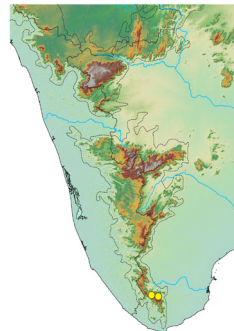
A small species with homogenous, small rounded granular scales dorsal scales. Pupil vertical. A series of 42 or 43 uninterrupted precloacal-femoral pores present. Lamella undivided in all the toes. Head brownish with mottling of yellow scales throughout. Dorsal body generally brown with darker streaks from the nuchal to the tail. Ventral surface of the body is uniformly pale.

### Habit & Habitat:

Mostly found in abandoned buildings in the tea estates close to the wet evergreen forests. Found in high elevations evergreen forests > 2,000 m.

### Distribution:

TN: Nalumukh and Kothayar in KMTR.



## Janaki's Dravidogecko

*Dravidogecko janakiae*

SVL 52 mm

Family: Gekkonidae



### Identification:

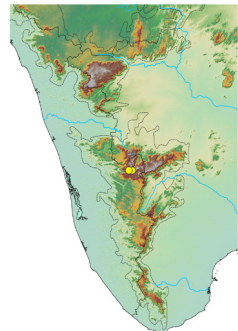
A small species with homogenous, small rounded granular scales dorsal scales. Pupil vertical. A series of 35 or 36 uninterrupted precloacal-femoral pores present. Lamella undivided in all the toes. Head creamish with two dark longitudinal stripes on each side from back of nostril to back of head. Dorsal body generally creamish with irregular dark blotches from nuchal region to tail. Ventral surface of body uniformly pale.

### Habit & Habitat:

Arboreal, collected from tree trunks and abandoned buildings close to natural vegetation. Found in high elevations evergreen forests > 2,000 m.

### Distribution:

KL: Munnar (Idukki district).



## Meghamalai Dravidogecko

*Dravidogecko meghamalaiensis*

SVL 49 mm

Family: Gekkonidae



### Identification:

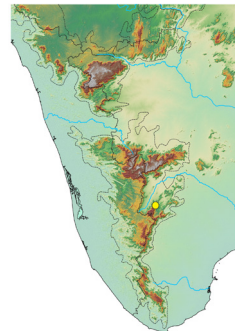
A small species with homogenous, small rounded granular scales dorsal scales. Pupil vertical. A series of 36–38 uninterrupted preloacal-femoral pores present. Lamella undivided in all the toes. Head ground colour with scattered yellow scales and irregular dark markings. Dorsal body generally pale with approximately 6 darker brown streaks from nuchal region to tail. Ventral surface of body uniformly pale.

### Habit & Habitat:

Found in abandoned buildings and on the trunks of trees in mixed deciduous forests and wet evergreen forests. Found in high elevations evergreen forests > 1,300 m.

### Distribution:

TN: Meghamalai WLS.



## Kodaikanal Dravidogecko

*Dravidogecko tholpalli*

SVL 53 mm

Family: Gekkonidae



### Identification:

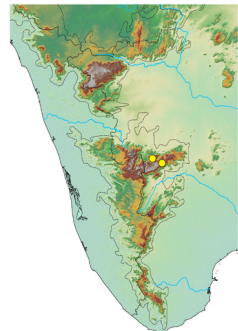
A small species with homogenous, small rounded granular scales dorsal scales. Pupil vertical. A series of 38–40 uninterrupted precloacal-femoral pores present. Lamella undivided in all the toes. Head creamish with irregular yellow and black mottlings. Dorsal body generally creamish with irregular black streaks from the nuchal to the tail. Ventral surface of body uniformly pale.

### Habit & Habitat:

Arboreal, found in Shola and edges of Shola.  
Found in high elevations evergreen forests  
> 1,400 m.

### Distribution:

TN: Palani Hills (Kodaikanal).

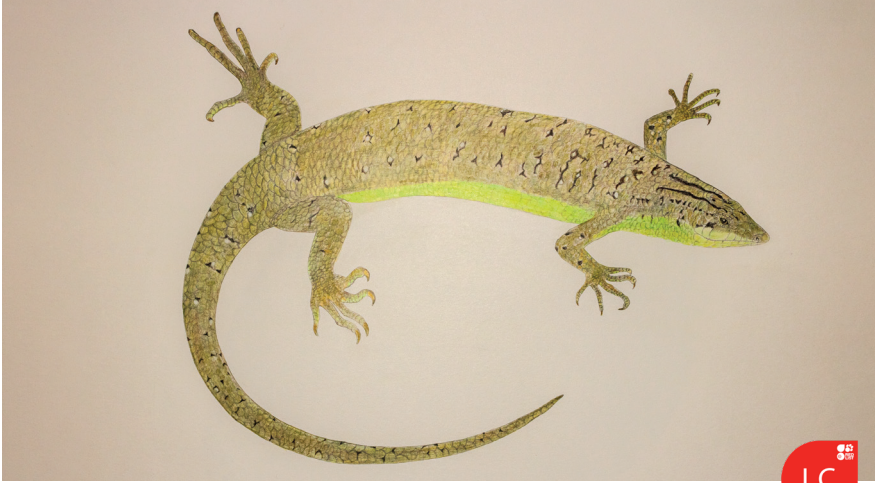


## Boulenger's Tree Skink

*Dasia subcaerulea*

SVL 60 mm

Family: Scincidae



### Identification:

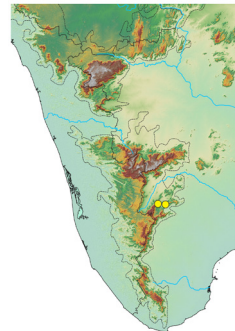
A medium-sized, moderately stout species. Dorsal scales subequal and cycloid, imbricate and almost smooth. Nuchal scales wide and scales on the lateral side of neck smaller. Round black pupil surrounded by pale iris. Snout elongate, lower eyelids scaly, tympanum small and sunken. 28 scales around the midbody. Dorsal body with a blend of grayish olive green/brown. A dark, partly broken stripe extending from behind the eye to the front of the shoulder. Two prominent dark stripes starting from frontal, terminate before the forearm insertion on the dorsum. Ventral side of head whitish and ventral body grass green.

### Habit & Habitat:

Possibly a diurnal species, arboreal in nature, often found on tree trunks in riparian habitats between 400 – 1,400 m.

### Distribution:

TN: Meghamalai WLS.





## Two-lined Ground Skink

*Kaestlea bilineata*

SVL 60 mm

Family: Scincidae

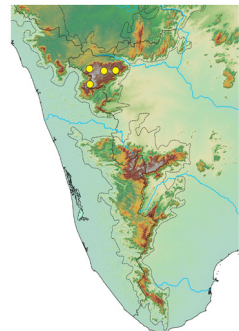


### Identification:

A medium-sized, slender species. Dorsal scales smooth or feebly multicarinate. 20–30 scales around the midbody. 4 large preanals; median pair of preanals larger than the lateral pair, pointed in male. Dorsal body brownish or bronze with 2 thick dark dorsolateral stripes starting from the nape until the anterior region of the tail and sometimes absent in adults. Two thick dorsolateral stripes extend from the posterior of the eye, thicker until the hindlimb insertion and becoming feeble on the tail. Ventral side of the body dark gray.

### Habit & Habitat:

A diurnal species found below stones and logs. Also found in open grassland habitat where rocky outcrops occur. Found in the high elevation evergreen forests and sholas > 1,800.



### Distribution:

TN: Nilgiri Hills.

## Palni Hills Ground Skink

*Kaestlea palnica*

SVL 60 mm

Family: Scincidae



### Identification:

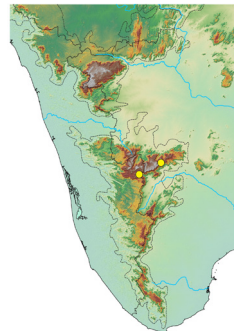
A medium-sized, slender species. Dorsal scales smooth or feebly multicarinate. 28 scales around the midbody. A single row of scales on dorsal surface of fingers on forelimbs. Pale dorsolateral stripe distinct, margined on inner side with dark brown; grayish-white venter; tail blue.

### Habit & Habitat:

A diurnal species found under stones and logs. Found in the high elevation evergreen forests and sholas > 1,800 m.

### Distribution:

TN: Palni Hills (Kodaikanal).



## Travancore Ground Skink

*Kaestlea travancorica*

SVL 53 mm

Family: Scincidae



### Identification:

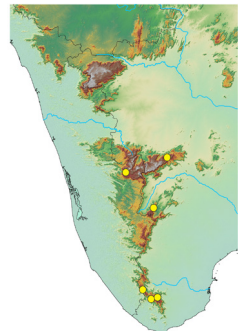
A medium-sized, slender species. Dorsal scales smooth. 22–26 scales around the midbody. 4 large prenasals, pointed in male. Dorsal body brownish or bronze with irregular black spots that may sometimes appear like a dorsal stripe. Two thick dorsolateral stripes extend from the posterior of the eye, thicker until the hindlimb insertion and becoming feeble on the tail. Ventral side of body dark gray.

### Habit & Habitat:

A diurnal species found under stones and logs. Also found in open grassland and forest habitats where rocky outcrops occur. Found in the high elevation evergreen forests and sholas > 1,200 m.

### Distribution:

TN & KL: Agasthyamalai, Anamalai and Palani hills (Kodaikanal).



## Rurk's Cat Skink

*Ristella rurkii*

SVL 45 mm

Family: Scincidae

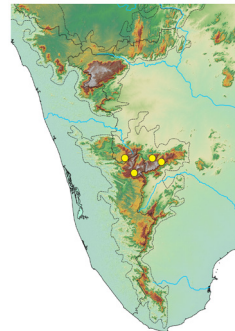


### Identification:

A medium-sized, slender species. Dorsal scales feebly bi- or tricarinate, sometimes smooth, more or less hexagonal in shape. 26–28 scales around the midbody. 4 large prenasals, pointed in male. Dorsal body reddish brown and each scale wedged by a black spot posteriorly that sometimes forms 6 longitudinal lines. The lateral sides dark, extending until the tail with numerous irregularly arranged white spots. Ventral side of body whitish or creamish, tail dark with iridescence.

### Habit & Habitat:

Diurnal, terrestrial, often found under fallen logs inside shola. They are commonly known as cat skinks because of their retractable claws. Found in the high elevation evergreen forests, open grasslands and sholas > 1,000 m.



### Distribution:

TN: Meghamalai WLS, Palni hills (Kodaikanal). KL: Munnar hills.

## Travancore Cat Skink

*Ristella travancorica*

SVL 40 mm

Family: Scincidae



DD

### Identification:

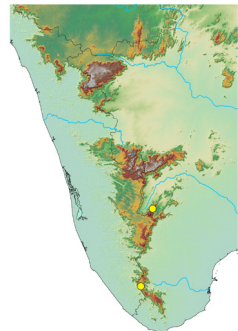
A medium-sized, slender species. Dorsal scales sharply bicarinate, sometimes smooth, more or less hexagonal in shape. 24–26 scales around the midbody. 4 large prenasals, pointed in male. Dorsal body reddish brown usually with a dark brown spot; with an indistinct darker lateral band. Ventral side of body whitish or creamish, tail dark with iridescence.

### Habit & Habitat:

Diurnal, terrestrial, often found under fallen logs inside shola. Commonly known as cat skinks because of their retractable claws. Found in the high elevation evergreen forests, open grasslands and sholas > 1,000 m.

### Distribution:

TN & KL: Agasthyamalai hills.



# GLOSSARY OF TECHNICAL TERMS

(Note some definitions are modified from Wareham, 2005)

**Anal plate:** in snakes the terminal ventral scale or scute, overlying the anus or vent.

**Arboreal:** Active in trees and bushes.

**Biogeography:** the study of the distribution of species and ecosystems in geographic space and through geological time.

**Caudal:** Pertaining to the tail or region of the tail; any pattern, plate, scale or structure on the tail.

**Carinate:** Having carinae (ridges or keels), as seen on the scales of particular lizards and snakes. (Bicarinate: having two keels. Tricarinate: having three keels).

**Compressed:** In reference to body or tail shape, somewhat flattened from side to side providing a greater depth than width.

**Crepuscular:** Active during twilight.

**Crest:** Any elevated, flexible, cutaneous ridge or fold on the tails and/or backs of many lizards.

**Cycloid:** Descriptive of a reptile scale possessing an evenly curved, free border.

**Diurnal:** Active during the day.

**Dimorphism:** Bimodal difference in morphology between members of same species, often between the sexes (sexual dimorphism).

**Diversification:** an increase in lineages, phenotypes or genotypes during evolution from a common ancestor.

**Endemic:** occurring only in a particular area.

**Femoral pores:** Small openings in some enlarged scales on the

undersides of the thighs in some lizards. The pores contain a wax-like material consisting of cellular debris which may, in breeding males, project from the scales' surface, forming a comb.

**Flank:** the side of an animal's body, generally between the fore- and hindlimbs.

**Frontal:** Pertaining to the scale, scales, or the space occupied by them (frontal area), on the top of the head situated between the supraocular scales, in lizards and snakes.

**Dewlap:** A pendulous fold or flap of skin under the throat (gular region) of some lizards. Typically used as a term for the often extensible structure that can, in some taxa, be raised or lowered by the action of the hyoid bone (well-developed in fan-throated lizards) during behavioural displays.

**Genials:** A term used to refer to chinshield. Any one of the large, paired, elongated scales situated immediately behind the first pair of infralabials on either side of the mid-line on the lower jaw.

**Heterogenous:** Having a colour, pattern or size that is not uniform.

**Homogenous:** Having a colour, pattern or size that is uniform.

**Juvenile:** A young, typically sexually immature individual.

**Imbricate:** Having adjacent edges overlapping, used to describe scales.

**Iridescence:** In reptiles, rainbow-like sheen on surface of smooth scales.

**Iris:** The often distinctly coloured muscular tissue between the pupil and the edge of the front of the eye.

**Keel:** Ridge on back, tail or scale.

**Labial:** Of, or pertaining to, the upper or lower lip; any one of the

row of scales bordering the mouths of snakes and lizards on the upper and lower lips and termed upper/supra labial and lower/infra labial respectively.

**Lamella (plural lamellae):** In herpetology, used most frequently for the series of thin, either single or divided, transverse plates extending across the underside of the digits in many lizard species.

**Lineage:** An evolutionary lineage is composed of species or individuals that comprise all of the descendents of a particular common ancestor.

**Loreal:** A scale situated between those of the nostril (nasal scales) and those of the eye (preocular scales), but not touching either nostril or eye, in snakes which usually have only one per side, and in lizards which may have several.

**Nasal:** A scale, situated on the side of the head, that borders or contains a nostril (or naris).

**Nocturnal:** Active during the night.

**Nostril (naris):** Either one of the pairs of external openings to the air passages, situated at the end of the snout.

**Nuchal:** Pertaining to the (typically the back or upper part of the) neck region.

**Orbit:** The bony socket of the eye; the border of skin around the eye of a reptile or amphibian.

**Ossicle:** Any small, often irregularly-shaped bone in the body of an animal, especially one of those in the middle ear.

**Parietal:** Either one of a pair of large scales on the top of the head in snakes, directly behind the frontal and lying at least partly over the parietal bones that form the main part of the roof of the back of the skull.



**Phylogenetics:** The study of evolutionary relationships among organisms.

**Postocular:** Behind the eye, as in ‘postocular scale’ which refers to any scale situated on the rear edge of the eye socket (orbit).

**Preocular:** Situated in front of the eye, as in ‘preocular scale’ which refers to any scale situated on the front edge of the eye socket (orbit).

**Precloacal pores:** A structure, seemingly similar in function to the femoral pore, situated anterior to the anus or cloacal region, in some lizards. The pore opens to the exterior on the upper surface of the preanal scale.

**Precloacal/preanal Scale:** Any one of the rows of scales situated in the pelvic region, directly in front of the cloaca. In some lizards several of these scales may have precloacal pores.

**Pupil:** The opening (aperture) in the centre of the front of the eye surrounded by the iris. In reptiles and amphibians, the constricted pupil can be any one of a number of shapes: usually circular, vertically elliptical, horizontally elliptical, heart-shaped or triangular, all useful features in the identification of these animals.

**Rostrum:** A beak-like projection, especially a stiff snout or anterior prolongation of the head.

**Rupicolous:** Living on, or among, rocks.

**Scalation:** Pattern of scales on body or on a specific part of body.

**Scale:** Is a small rigid, thin and horny plate growing out of the skin.

**Scute(s):** Any one of the larger scales on a reptile and alternatively termed a shield or plate.

**Shola(s):** colloquial regional term for subtropical evergreen montane forests in the southern Western Ghats typically in mosaics of grassland.

**Spine:** Any firm, pointed structure or process on the body or a scale.

**Subcaudals:** The scales on the underside, or ventral surface, of the tail from the vent to the tail tip (or terminal scute forming the tail tip). In most snake species the subcaudals are divided or paired, lying in a double row. In others they may be single, or a mixture of single and divided.

**Supraocular:** Any scale or scales situated above the eye and referring in particular to, in lizards, any one of the scales situated on the back of the eye socket (orbit) or, in snakes, the often enlarged scale directly above the eye which may, in certain species, project slightly to form a supraocular ridge.

**Supraocular/Supraorbital ridge:** The prominent elongated margin of the supraocular scale that overshadows the eye in a number of snake species, especially vipers.

**Systematics:** The branch of biology that deals with classification and nomenclature; often considered as an umbrella term for taxonomy and phylogenetics.

**Temporal(s):** Of, on, or relating to, the region of the temple on the side of the head, for example, any one of the more or less enlarged scales situated behind the postocular scales, beneath the parietal and above the upper labial scales at the angle of the jaw in snakes and lizards.

**Terrestrial:** Living on ground.

**Tubercles:** Small rounded projections or protuberances, especially on a bone or on the surface (often scales) of an animal.

**Tympanum:** The external eardrum, a membrane separating the middle ear from the outer ear. In many reptiles the tympanum is exposed at the skin surface, while in others it may be hidden from external view or completely lacking.

**Ventrals:** The typically broad scales on the under surface, or venter, of a snake, from back of the head to the anal plate.

## ABBREVIATIONS

**asl:** Above Sea Level

**SVL:** Snout–vent length

**TL:** Total length

**KL:** Kerala

**TN:** Tamil Nadu

**NP:** National Park

**WLS:** Wildlife Sanctuary

**KMTR:** Kalakad Mundanthurai Tiger Reserve

**IUCN:** The International Union for Conservation of Nature

## IUCN REDLIST ASSESMENT STATUS



**Table 1.** Checklist of reptiles found above 1,000 m elevation in the four mountain ranges covered in this book. Note that some species are restricted to Kodaikanal range which is an eastward extension of the Anamalai mountain range. Please note: some species listed here are likely to undergo taxonomic revision that might impact these distribution summaries. Species which are found only above 1,000 m (montane endemics) are marked with an asterix (\*).

Species	Nilgiris	Anamalai	Meghamalai	Agasthyamalai
<b>Snakes</b>				
<i>Ahaetulla dispar</i> *	x	✓	✓	x
<i>Ahaetulla perroteti</i> *	✓	x	x	x
<i>Ahaetulla travancorica</i> *	x	x	x	✓
<i>Amphiesma monticola</i>	✓	✓	x	x
<i>Amphiesma stolatum</i>	✓	✓	✓	✓
<i>Boiga dightoni</i>	x	x	✓	✓
<i>Boiga thackerayi</i>	✓	✓	✓	✓
<i>Bungarus caeruleus</i>	✓	✓	✓	✓
<i>Calliophis nigrescens</i>	✓	✓	✓	✓
<i>Coelognathus helena monticollaris</i>	x	✓	✓	x
<i>Craspedocephalus anamallensis</i>	x	✓	✓	x
<i>Craspedocephalus macrolepis</i>	x	✓	✓	x
<i>Craspedocephalus malabaricus</i>	✓	x	x	x
<i>Craspedocephalus peltopelor</i>	x	x	x	✓
<i>Craspedocephalus strigatus</i> *	✓	x	x	x
<i>Craspedocephalus travancoricus</i>	x	x	x	✓
<i>Dendrelaphis ashoki</i>	✓	✓	✓	x
<i>Gerrhopilus thurstoni</i> *	✓	x	x	x
<i>Hebius beddomei</i>	✓	✓	✓	✓
<i>Indotyphlops fletcheri</i> *	✓	x	x	x
<i>Lycodon travancoricus</i>	✓	✓	✓	✓
<i>Melanophidium punctatum</i>	x	✓	✓	✓

<i>Naja naja</i>	✓	✓	✗	✓
<i>Oligodon brevicauda</i> *	✗	✓	✗	✓
<i>Oligodon nikhili</i> *	✗	✓	✗	✗
<i>Oligodon travancoricus</i> *	✗	✓	✓	✓
<i>Oligodon venustus</i> *	✓	✗	✗	✗
<i>Platyplectrurus madurensis</i> *	✗	✓	✗	✗
<i>Platyplectrurus trilineatus</i> *	✗	✓	✗	✗
<i>Plectrurus perroteti</i> *	✓	✗	✗	✗
<i>Proahaetulla antiqua</i> *	✗	✗	✗	✓
<i>Ptyas mucosa</i>	✓	✓	✓	✓
<i>Python molurus</i>	✓	✓	✓	✓
<i>Rhinophis sanguineus</i> *	✓	✗	✗	✗
<i>Teretrurus rhodogaster</i> *	✗	✓	✗	✗
<i>Teretrurus sanguineus</i>	✓	✓	✗	✓
<i>Tropidolaemus huttoni</i> *	✗	✗	✓	✗
<i>Uropeltis liura</i> *	✗	✗	✓	✓
<i>Uropeltis madurensis</i> *	✗	✗	✓	✗
<i>Uropeltis pulneyensis</i> *	✗	✓	✓	✗
<i>Uropeltis rubromaculata</i> *	✗	✓	✗	✗
<i>Uropeltis rubrolineata</i>	✗	?	✗	✓
<i>Xylophis mosaicus</i> *	✗	✓	✗	✗
<i>Xylophis perroteti</i> *	✓	✗	✗	✗
<i>Xylophis stenorhynchus</i> *	✗	✓	✗	✗
<b>Lizards</b>	<b>Nilgiris</b>	<b>Anamalai</b>	<b>Meghamalai</b>	<b>Agasthyamalai</b>
<i>Calotes grandisquamis</i>	✓	✓	✓	✓
<i>Calotes versicolor</i>	✗	✓	✓	✓
<i>Cnemaspis anamudiensis</i> *	✗	✓	✗	✗
<i>Cnemaspis anandani</i> *	✓	✗	✗	✗
<i>Cnemaspis australis</i>	✗	✗	✗	✓
<i>Cnemaspis beddomei</i> *	✗	✗	✗	✓
<i>Cnemaspis flavigularis</i> *	✗	✗	✓	✗
<i>Cnemaspis indica</i> *	✓	✗	✗	✗
<i>Cnemaspis maculicollis</i> *	✗	✗	✗	✓

<i>Cnemaspis monticola</i>	✓	x	x	x
<i>Cnemaspis nilagirica</i> *	✓	x	x	x
<i>Cnemaspis nimbus</i> *	x	x	✓	x
<i>Cnemaspis palanica</i> *	x	✓	x	x
<i>Cnemaspis rubraoculus</i> *	x	x	✓	x
<i>Cnemaspis sisparensis</i> *	✓	x	x	x
<i>Cnemaspis smaug</i> *	x	x	✓	x
<i>Cnemaspis wallaceii</i> *	x	✓	x	x
<i>Cnemaspis zacharyi</i>	✓	x	x	x
<i>Dasia subcaerulea</i>	x	x	✓	x
<i>Dravidogecko anamallensis</i>	x	✓	x	x
<i>Dravidogecko douglasadamsi</i> *	x	x	x	✓
<i>Dravidogecko janakiae</i> *	x	✓	x	x
<i>Dravidogecko meghamalainensis</i>	x	x	✓	x
<i>Dravidogecko smithi</i>	x	x	x	✓
<i>Dravidogecko tholpalli</i> *	x	✓	x	x
<i>Eutropis carinata</i>	✓	✓	✓	✓
<i>Hemiphyllodactylus nilgiriensis</i> *	✓	x	x	x
<i>Kaestlea bilineata</i> *	✓	x	x	x
<i>Kaestlea palnica</i> *	x	✓	x	x
<i>Kaestlea travancorica</i> *	x	✓	✓	✓
<i>Microauris aurantolabium</i> *	x	x	x	✓
<i>Monilesaurus acanthocephalus</i> *	x	x	✓	x
<i>Monilesaurus ellioti</i>	✓	✓	x	✓
<i>Monilesaurus montanus</i> *	✓	x	x	x
<i>Psammophilus dorsalis</i>	✓	✓	✓	✓
<i>Ristella rurkii</i> *	x	✓	✓	x
<i>Ristella travancorica</i> *	x	x	✓	✓
<i>Salea anamallayana</i> *	x	✓	✓	x
<i>Salea horsfieldii</i> *	✓	x	x	x
<i>Varanus bengalensis</i>	✓	✓	✓	✓

✓ present

x not reported

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