STUDIES ON THE FAMILY GEKKONIDAE (REPTILIA) FROM KARNATAKA AND TAMIL NADU

R. AENGALS
Southern Regional Centre, Zoological Survey of India, Chennai-600028

INTRODUCTION
Since the publication of Malcolm Smith's work (Fauna of British India Volume 11, Sauria 1935) the lizards of the family Gekkonidae were studied by Murthy (1985 & 1990) and Tikader and Sharma (1992), Daniels and Daniels (1992), Daniels et al. (2001), Ishwar et al. (2001), Daniel (2002), Sharma (2002), Kalaiarasan (2003), and Mukherjee et al. (2005), have described a new species of Cnemaspis (Cnemaspis anaikattiensis) along with studies on some of the geckos of Western Ghats.

During the faunistic survey of the western Ghats part of Karnataka and Tamil Nadu during 2006-2008, undertaken by the Southern Regional Centre, Zoological Survey of India, 107 specimens of geckos belonging to three genera i.e. Cyrtodactylus, Cnemaspis and Hemidactylus of the family Gekkonidae were collected and studied. The study of these specimens revealed 14 species under 4 genera. In addition, the collections of geckos already available in the Southern Regional Centre, Zoological Survey of India were also examined for comparative study. Altogether 16 species of geckos from 5 genera were studied and identified.

Following is the systematic list of 27 geckonid species based on collections from Karnataka and Tamil Nadu States.

Key to the abbreviation: SVL-Snout to Vent Length; TL-Length of Tail; ex.-example; exs.-examples; Col-Collector / Collected by.

SYSTEMATIC LIST
Phylum CHORDATA
Class REPTILIA
Order SQUAMATA

Sub order SAURIA (LACERTILIA)
Family GEKKONIDAE
Genus 1. Cyrtodactylus Gray
1. Cyrtodactylus collegalensis (Beddome)*
2. Cyrtodactylus dekkanensis (Gunther)
3. Cyrtodactylus albofasciatus (Boulenger)
Genus 2. Cnemaspis Strauch
4. Cnemaspis indica (Gray)*
5. Cnemaspis beddomei (Theobald)*
6. Cnemaspis jerdoni (Theobald)*
7. Cnemaspis sisparensis (Theobald)*
8. Cnemaspis ornata (Beddome)*
9. Cnemaspis mysoriensis (Jerdon)*
10. Cnemaspis kandianus (Kelaart)*
11. Cnemaspis goaensis Sharma
12. Cnemaspis wynadensis (Beddome)
13. Cnemaspis littoralis (Jerdon)
14. Cnemaspis gracilis (Beddome)*
Genus 3. Dravidogecko Smith
15. Dravidogecko anamallensis (Gunther)**
Genus 4. Hemidactylus Oken
16. Hemidactylus maculatus (Dum. & Bibr.)*
17. Hemidactylus triedrus (Daudin)*
18. Hemidactylus brooki (Gray)*
19. Hemidactylus prashadi Smith
20. Hemidactylus gracilis Blanford
21. *Hemidactylus reticulatus* Beddome**

22. *Hemidactylus frenatus* Schlegel*

23. *Hemidactylus leschenaulti* Dum. & Bibr.*

24. *Hemidactylus flaviviridis* Ruppell

25. *Hemidactylus giganteus* Stoliczka

Genus 5. *Hemiphyllodactylus* Bleeker

26. *Hemiphyllodactylus typus aurantiacus* (Beddome)

Genus 6. *Eublepharis*

27. *Eublepharis macularius* (Blyth)

*Specimens collected during the 2006-2008 Western Ghats Survey.

**Not collected during the survey text added.

1. *Cyrtodactylus collegalenisi* (Beddome)

   **Collegal Rock Gecko** (PLATE I a)


   Material examined : 1 ex., (SVL. 34 mm; Tail damaged), Anaimalais Upper Aliyar, 30.xii.67. T.S.N. Murthy, Coll.; 1 ex., (SVL. 34 mm; Tail damaged), Meenmutty New Amarambalam Reserve Forest, 14, iii. 79. T.S.N. Murthy, Coll.; 1 ex. (SVL. 28 mm; Tail damaged), Mudumalai-1 Nilgiri Biosphere Reserve, ca 1100 m. 12.x.87.M.Vasanth, Coll.; lex., (SVL. 45 mm; Tail damaged), Chokanparai, Alagar Kovil, Theni. 27.1.07 R. Aengals Coll.

   Diagnosis : A conspicuously and handsomely coloured gecko : light brown or greyish above, with large, rounded or oval black edged, paired spots upon the back. Tail with much smaller spots irregularly arranged. Dorsal pholidosis composed of small granular scales intermixed with larger keeled scales.


2. *Cnemaspis indica* (Gray)

   **Nilgiri Dwarf Gecko** (PLATE I b)


   Material examined : 3 exs., (SVL. 30-35 mm; TL. 25-30 mm), Doddabetta Nilgiris, 13.iii.78. T.S.N. Murthy, Coll.; 1 ex., (SVL. 32 mm; TL. 35 mm), Meenmutty New Amarambalam, 23.iii.79. T.S.N. Murthy, Coll.; 2 exs., (SVL. 27-32 mm; TL. 35-40 mm), Sayivala New Amarambalam, 15.iii.79. K.R. Rao Coll.; 1 ex., (SVL. 32 mm; TL. 30 mm), Sayivala New Amarambalam, 15.iii.79. K.R. Rao, Coll.; 8 exs., (SVL. 20-32 mm; TL. 22-32 mm), Lakkidi, Nilgiri Biosphere Reserve, 24.viii.90. G. Thirumalai, Coll.; 2 exs., (SVL. 22-25 mm; Tail damaged), Italar, NBH, 28.viii.90. G. Thirumalai, Coll.; 3 exs., (SVL. 23-30 mm; TL. 20-30 mm), Emerald, Nilgiri Biosphere Reserve, 24.iii.91. G. Thirumalai, Coll.; 1 ex., (SVL. 23 mm; TL. 15 mm), Sim's park, Conoor, 18.iv.92. T.S.N. Murthy, Coll.; 1 ex., (SVL. 24 mm; TL. 30 mm), Pykara, 23.iv.92. T.S.N. Murthy, Coll.; 1 ex., (SVL. 30 mm; TL. 32 mm), Upper Bhavani, 7.H.93. Dr. G Thirumalai, Coll.; lex., (SVL. 30 mm; TL. 32 mm), Thammanayakanahalli, 10.xii.05. S. Prabakaran Coll.

   Diagnosis : Head covered with small, granular, keeled scales; back with much larger, rounded, pointed or keeled tubercles; ventral scales smooth. Body is greenish brown with a row of orange yellowish spots traversed from the head to tail and also similar spots traversing in the lateral side of the body. A light vertebral line is present.

   Distribution : INDIA : Tamil Nadu and Karnataka.

3. *Cnemaspis beddomei* (Theobald)

   **Beddomei's Dwarf Gecko** (PLATE I c)


   Material examined : 2 exs., (SVL. 17-36 mm; Tail damaged), Chokanparai, Alagarkovil, 27107, R. Aengals, Coll.; 2 exs. (SVL. 22-30 mm; Tail damaged), Koliyamuthi, Topslip, 5.ii.07. R. Aengals, Coll.

   Diagnosis : Head short; back with smaller but enlarged tubercles and belly with keeled scales;
brown above, spotted with pale and darker markings and pale brownish below; dark bars on the lower lip and the throat. The tail is barred with light and dark and swollen at the base.

**Distribution**: INDIA: Tamil Nadu and Kerala.

4. *Cnemaspis jerdoni* (Theobald)  
Jerdon's Dwarf Gecko (PLATE I d)  

*Material examined*: 1 ex., (SVL. 30 mm; TL. 32 mm), Mdukulimadu, Top Slip, 23.xii.07. R. Aengals Coll.

*Diagnosis*: Head covered with small granular scales; back with small uniform scales; ventral scales rather large, imbricate, smooth; flanks with spines; dorsally greyish brown above with lighter and darker spots. Two or three jet black spots on the nape. Tail with conspicuous dark bands above.


5. *Cnemaspis sisparensis* (Theobald)  
Sispara Dwarf Gecko (PLATE I e)  

*Material examined*: 2 exs. (SVL. 25-32 mm; TL. 22-27 mm), Kuliratti, Kalakkad l.iii.85. RS. Pillai, Coll.; 3 exs., (SVL. 25-32 mm; Tail damaged), Chokanparai, Alagarkovil. 27.L07. R. Aengals Coll.

*Diagnosis*: Head covered with small, granular, conical scales; back with much larger, conical or strongly keeled tubercles; ventrals smooth. Digits longer; tail cylindrical; male with 6-9 preanal pores. Brown above and pale brownish on the undersides. Dorsal pattern consists of a row of white blackedged ocelli down the centre of the back and a light blackedged band on the shoulders.

**Distribution**: INDIA: Tamil Nadu and Kerala.

6. *Cnemaspis ornata* (Beddome)  
Ornate Dwarf Gecko (PLATE II a)  

*Materials examined*: 2 exs. (SVL. 25-32 mm; TL. 22-33 mm), Kavaladurga tank, 19.xii.07. R. Aengals Coll.

*Diagnosis*: Head covered with small granular, keeled scales; on the back similar but intermixed with a few large ones which may turn conical in shape on the sides; ventral scales smooth, imbricate, larger than the dorsals. Brown above and brownish white below; back with a midstripe and prominent
dark brown spots; throat suffused with brown. Digits with dark bars and tail much longer than the head and body.

**Distribution**: INDIA: Karnataka, Kerala and Tamil Nadu.

8. *Cnemaspis kandianus* (Kelaart)

**Kandy Dwarf Gecko** (PLATE II c)


**Material examined**: 1 ex, (SVL. 24 mm; TL. 30 mm), Panumpuzha, New Amarambalam, 27.i.79, T.S.N. Murthy, Coll.; 1 ex., (SVL. 22 mm; Tail damaged), Sethumadai, Anaimalais, 18.i.92. G. Thirumalai, Coll.; 7 exs, (SVL. 15-30 mm; TL. 12-32 mm), Chinnakulli bridge, Kargudi range, 23.xii.07. R. Aengals Coll.

**Diagnosis**: Back with transversely arranged variegations and a faint vertebral stripe or spots. Throat dark brown; ventral light brown. Spine like tubercles on the flanks white. Tail slightly longer than the head and body.

**Distribution**: India: Hills of Southern India and Andaman Islands. **Elsewhere**: Sri Lanka and Islands west of Sumatra

9. *Cnemaspis gracilis* (Beddome)

**Indian Forest Gecko** (PLATE II d)


1935. *Cnemaspis gracilis*, Smith, **Fauna of British India, 2**: p. 74.

**Material examined**: 1 ex, (SVL. 28 mm; TL. 32 mm), Meenumutty New Amrambalam, Coll. T.S.N. Murthy, Coll.; 1 ex. (SVL. 28 mm; TL. 32 mm), Medicare, 25.xii.05, S. Prabakran, Coll.; 3 exs., (20-26 mm; Tail damaged), Pojakal nullah, Hagarhole, 9.xii.07. R. Aengals Coll.; 2 exs., (SVL. 28-30 mm; TL. 30-35 mm), Mudan Kero, Medikare, 11.xi.07, R. Aengals, Coll.; 6 exs., (SVL. 28-30 mm; TL. 30-34 mm), Mashihole, 16.xii.07. R. Aengals, Coll. 5 exs., (SVL. 15-30 mm; TL.25-33 mm), Minehole, Nalur, Thirthahalli, 20.xii.07. R. Aengals Coll.

**Diagnosis**: Head covered with minute keeled scales which are largest on the snout; upper labials 7-8, as many lower labials; mental is large, becomes like a spine posteriorly, sub triangular, broader than the rostral; post-mentals are small, in 2 or 3 pairs, the first paid is generally in contact with one another just behind the mental shield. Grey brown above with lighter and darker spots. Nape often with two or three jet black vertebral spots and usually a series of light vertebral spots down the back. Tail with dark bands and slightly longer than the head and body.

**Distribution**: INDIA: Hills of southwestern India. **Elsewhere**: Sri Lanka.

10. *Dravidogecko anamallensis* (Gunther)

**Anamallai Dravid Gecko** (PLATE II e)


**Material examined**: 1 ex., (SVL. 38 mm; TL. 34 mm), Kodaikanal, 3.H.72. T.S.N. Murthy. Coll.; 1 ex., (SVL. 40 mm; Tail damaged), Kuliratti. (Kalakad) 26.1.84, R.S. Pillai, Coll.

**Diagnosis**: Greyish-brown above and marbled with light dots; brownish-white below, granulated body, clawed digits, undivided sub digital lamellae and eyes with vertical pupil. Males have both the preanal and femoral pores; toes with rudiments of web. Tail cylindrical and swollen at the base.

**Distribution**: Anamalais hills of Western Ghats.

11. *Hemidactylus maculates* (Dum. & Bibr.)

**Giant spotted gecko** (PLATE III a)


**Material examined**: 1 ex. (SVL. 48 mm; TL. 65 mm), Courtallam 30.X.75. R.S. Pillai, Coll.

**Diagnosis**: Dorsally brown with large darker spots which unite sometimes to from undulating cross-bars on the back and dirty whitish below; five distinct dorsal cross-bars on the back are more pronounced in the young. Head with two dark stripes on each side; Tail of the young and adult banded with light and dark brown.
**AENGALS : Studies on the Family Gekkonidae (Reptilia) from Karnataka and Tamil Nadu**

**Distribution**: INDIA: Maharashtra, Kerala and Tamil Nadu.

12. *Hemidactylus triedrus* (Daudin)

**Termite Hill Gecko** (PLATE III b)

**Material examined**: 1 ex., (SVL 30 mm; TL 20 mm), Boeligutta Mudumalai, 26.ix.88, G. Thirumalai, Coll.; 1 ex., (SVL 25 mm; Tail damaged), Valugai Odai, Mundanthurai, 24.i.07, R. Aengals, Coll.; 1 ex., (SVL 65 mm; Tail damaged) Watrap, Pudupatty, 26.ii.07, R. Aengals, Coll.; 2 exs., (SVL 32-42 mm; Tail damaged), Hansapuram, 28.i.07, R. Aengals, Coll.; 3 exs., (SVL 42-48 mm; TL 50-56 mm) Puduputty village, 31.i.07, R. Aengals, Coll.; 1 ex., (SVL 70 mm; TL 75 mm), Lakshmana theertham, 10.xi.07 R. Aengals. Coll.; 2 exs., (SVL 48-50 mm; TL 50-52 mm), Sudar tank, Siringere range, 18.xii.07, R. Aengals Coll. 1 ex., (SVL 35 mm; TL 45 mm), Thirthahalli, 20.xii.07. R. Aengals, Coll.

**Diagnosis**: Back with conical tubercles arranged in regular rows; 5-6 lamellae under first toe and seven to ten under fourth toe. Light grey above, with dark brown spots more or less regularly arranged somewhat like broken transverse bands on the back; a dark streak along the side of the head and dirty whithish below.

**Distribution**: INDIA: Tamil Nadu, Andhra Pradesh, Karnataka, Kerala and Maharashtra. Elsewhere: Sri Lanka and West Pakistan.

13. *Hemidactylus brooki* (Gray)

**Spotted Indian House Gecko** (PLATE III c)

**Material examined**: 1 ex., (SVL 34 mm; TL 40 mm), Ooty Nilgiris, 4.iii.78, T.S.N. Murthy, Coll.; 3 exs., (SVL 37-42 mm; TL 25-35 mm), Vaigadim, 17.iii.87, K.V. Lakshminarayana Coll. Diagnos**: Head rather large and the anout obtusely pointed; the body heavily tuberculated and it can be easily recognized by three white edged olive green cross bars and pinkish white below; greenish above eye. The tail is marked withy regular black and light rings.

**Distribution**: INDIA: Tamil Nadu, Andhra Pradesh, Karnataka, Kerala and Maharashtra. Elsewhere: Sri Lanka and West Pakistan.

14. *Hemidactylus reticulatus* Beddome

**Reticulate Gecko** (PLATE III d)

**Material examined**: 1 ex., (SVL 32 mm; TL 37 mm), Kodaikanal, 7.iv.80. T.S.N. Murthy, Coll.; 3 exs., (SVL 37-42 mm; TL 25-35 mm), Vaigaidam, 17.iii.87. K.V. Lakshminarayana Coll. Diagnos**: Back with erect, keeled granules and enlarged, pointed and keeled tubercles; lamellae on the fourth toe 10; brown above with a characteristic pattern of darker lines arranged in a network on the back; belly whitish and throat mottled with brown. Most of the dorsal tubercles whitish.

**Distribution**: INDIA: Tamil Nadu, Karnataka and Andhra Pradesh.

15. *Hemidactylus frenatus* Schlegel (in Dum. & Bibr.)

**Southern House Gecko** (PLATE III e)

**Material examined**: 1 ex., (SVL 67 mm; TL 72 mm), Meenunmutty, NARF Kerala, 14.iii.79. T.S.N. Murthy, Coll.; 1 ex., (SVL 53 mm; TL 53 mm), Sayivala New Amambalam, 15.ii.79, K.R. Rao, Coll.; 1 ex., (SVL 35 mm; TL 40 mm), Anaikatti, Coimbatore, 8(iv.92. T.S.N. Murthy, Coll.; 2 exs., (SVL 40-45 mm; TL 35-38 mm), Keelkodaiyar, 20-i.07, R. Aengals, Coll.; 1 ex., (SVL 34 mm; TL 36 mm), Karaiyar, 24.i.07. R. Aengals. Coll.; 1 ex,
Hemidactylus leschenaulti & Dum. & Bib
Bark Gecko (PLATE III f)


Material examined: 1 ex., (SVL. 38 mm; TL. 46 mm), Ooty, Nilgiris, 18.iii.80, T.S.N. Murthy, Coll.;
1 ex., (SVL. 55 mm; TL. 60 mm), Valparai, Anaimalais, 26.iii.80, T.S.N. Murthy, Coll.;
1 ex., (SVL. 42 mm; TL. 40 mm), Sengaltheri, 8.ii.86. M. Vasanth, Coll; 1 ex., (SVL. 90 mm; TL. 75 mm),
Karaiyar, Mundarthurai, 24107. R. Aengals coll. 1 ex., (SVL. 55 mm; TL. 60 mm), Periyar Dam, 26107,
R. Aengals, Coll., 2 exs., (SVL. 45-75 mm; TL. 45-54 mm), Chenbagathoppu, 27107. R. Aengals, Coll.

Diagnosis: Body scales granular, minute and intermixed with small tubercles irregularly scattered; scales on the ventral small and imbricate; 10-11 lamellae under fourth toe; males with 10-17 femoral pores on each side. Grey above and whitish below; back with conspicuous wavy cross-bars; A dark streak from the eye extending on to the sides of the body.

Distribution: INDIA; Throughout India. Elsewhere: Sri Lanka.

SUMMARY

In India, occurrence of 89 species of geckonids is well documented (Sharma 2002). Out of these 19 species have been recorded from Karnataka and Tamil Nadu earlier (Murthy, 1985 & 1990). Western Ghats region comprising of Tamil Nadu, Karnataka, Kerala, Maharashtra and Goa shows the presence of 27 species. During the faunistic survey of Western Ghats part of Karnataka and Tamil Nadu 107 examples belonging to 4 genera of the family Gekkonidae were studied in detail. The present article reports in brief an account of sixteen geckonid species reported from Karnataka and Tamil Nadu states.

ACKNOWLEDGEMENTS

The author is grateful to Dr. K. Venkataraman, Director, Zoological Survey of India, Kolkata and the Officer-in-Charge, of the Southern Regional Centre, Chennai for encouragement and facilities. Special thanks are due to Shri T.S.N. Murthy, former Scientist SE of SRS/ZSI for his helpful suggestions and confirming the species identification.

REFERENCES


Manuscript Received : 28 November 2009; Accepted : 26 October 2012
PLATE - I. GECKOS OF SOUTHERN INDIA

a. Cyrtodactylus collegalensis (Beddome)  
b. Cnemaspis indica (Gray)  
c. Cnemaspis beddomei (Theobald)  
d. Cnemaspis jerdoni (Theobald)  
e. Cnemaspis sisparensis (Theobald)
PLATE - II. GECKOS OF SOUTHERN INDIA

a. *Cnemaspis ornata* (Beddome)

b. *Cnemaspis mysoriensis* (Jerdon)

c. *Cnemaspis kandianus* (Kelaart)

d. *Cnemaspis gracilis* (Beddome)

e. *Dravidogecko anamallensis* (Gunther)
PLATE - III. GECKOS OF SOUTHERN INDIA

a. *Hemidactylus maculatus* (Dum. & Bibr.)
b. *Hemidactylus triedrus* (Daudin)
c. *Hemidactylus brooki* (Gray)
d. *Hemidactylus reticulatus* (Beddome)
e. *Hemidactylus frenatus* (Schlegel)
f. *Hemidactylus leschenaulti* (Dum. & Bibr.)