

MISCELLANEOUS PUBLICATION
OCCASIONAL PAPER NO. 72

Records of the Zoological Survey of India

**A FIELD GUIDE TO THE LIZARDS OF
WESTERN GHATS**

by

T. S. N. MURTHY

**Issued by the Director
Zoological Survey of India, Calcutta**

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By

T. S. N. MURTHY
*Zoological Survey of India
Southern Regional Station
Madras-28*



सत्यमेव जयते

*Edited by the Director, Zoological Survey of India
1985*

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Published in March 1985

PRICE : *Inland* : Rs. 40·00
***Foreign* : £ 5·00 \$ 8·50**

**PRINTED IN INDIA AT IMPRINTA, 243/2B, A. P. C. ROAD, CALCUTTA-6 AND
PUBLISHED BY THE DIRECTOR, ZOOLOGICAL SURVEY OF INDIA, CALCUTTA**

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AUTHOR'S PREFACE

Reptiles are an overly conspicuous part of the biota throughout the faunistically rich Western Ghats. However, the published work on the reptiles of Western Ghats in general and the lizards in particular has seriously lagged behind those of the fishes, birds, and mammals. Since the publication of Smith's (1935) volume on lizards, few papers by Sharma (1970, 1976), Tiwari & Sharma (1970), Underwood (1948, 1948a), and the author (1981, 1983) were published on the saurian fauna of Western Ghats. During the past two decades (1960-1980) the remote regions including the hitherto unexplored tracts like the Silent Valley have become readily accessible and several important collections have been made. With the setting up of the Department of Environment, a number of ecosystem studies have been initiated in the various hill ranges of Western Ghats, and environmental impact statements are now being prepared in connection with the development projects. In the circumstances it is desirable that field guides for reptiles be prepared to facilitate these studies. My abiding interest in the herpetology of Western Ghats has also motivated me to present this work.

I have attempted to summarise here what little is known of the systematics and natural history of the lizards of Western Ghats based on published accounts and my own observations. Every effort has been made to keep the technical details to a minimum. Emphasis has been laid on the colouration and habits of some common species. Existing common names were given for some well-known forms. The text, which reports the latest classifications and more recent discoveries, provides descriptions that pinpoint the distinguishing characteristics, colour, size, and geographical range of each species. The photographs, key for identification, glossary, and the diagrammatic illustrations of some diagnostic characters will facilitate the easy identification of these animals in the field by the layman and specialist as well.

Since a majority of the lizards in the Western Ghats have become rare and some are threatened due to the large-scale degradation of the forests throughout the area, it is hoped that this field guide will enable easy recognition of such species and save them from near extinction. It is also my fond hope that it will encourage those in the field to collect specimens for museums and scientific organisations like the Zoological Survey of India.

*Zoological Survey of India,
Madras-600 028*

T.S.N. MURTHY

ACKNOWLEDGEMENTS

I am thankful to Dr. B. K. Tikader, Director, Zoological Survey of India, Calcutta and Dr. R. S. Pillai, Deputy Director, ZSI, Madras for their interest in my work. I am indebted to Mr. A. F. Stimson, Department of Herpetology, British Museum (N. H.) for the photographs of some lizards. Thanks are also due to Shri D. Sengupta, Artist, Southern Regional Station, ZSI, Madras for the neat execution of the text-figures under my supervision.

PHYSIOGRAPHY OF WESTERN GHATS

The Western Ghats (Fig. 1) are flat-topped range of hills rising abruptly from the Arabian sea and running more or less parallel with it, sloping more gradually on the side of the peninsula. They commence in Khandesh, Maharashtra, and run up to Kanyakumari, Tamil Nadu. The chief hill-ranges are the Nilgiris, Anaimalais, Palnis, and Cardamom Hills. They rise to considerable height. Their average elevation is 550 M and the highest peak is Anaimudi, which rises to about 2,700 M. Most of the area provides ample ground for magnificent rain forests, thick belts of bamboo and elevated pastures. The rain fall is heavy sometimes upto 500 cm in a year. The three major Peninsular rivers, namely the Godavary, the Krishna, and the Kaveri have their origin in the Western Ghats.

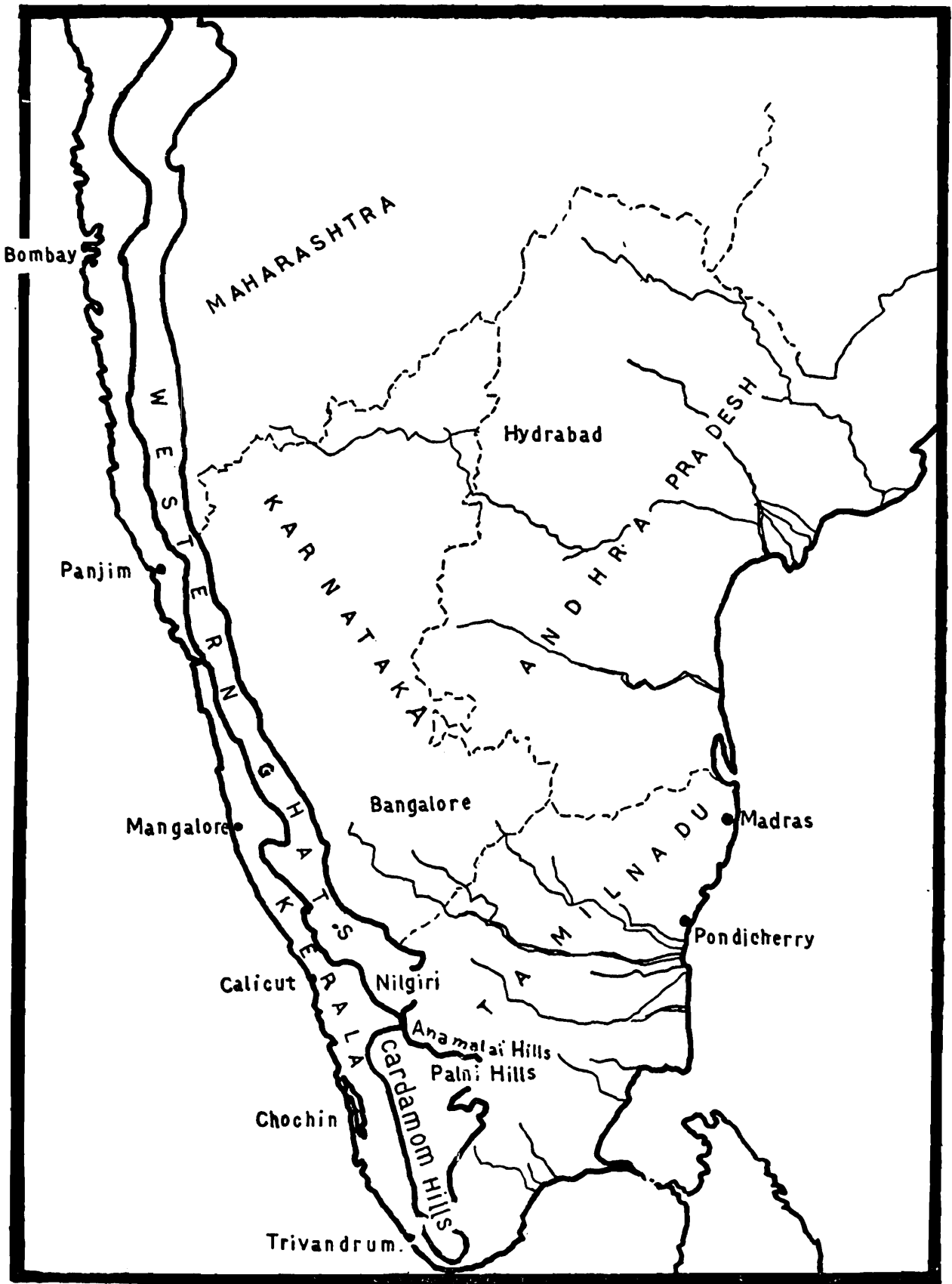


Fig. 1

Map of Western Ghats

SYSTEMATIC INDEX

The taxonomic arrangement adopted here follows broadly that of Smith (1935) as revised by Mittleman (1950, 1952), an Underwood (1954), and Wermuth (1965).

Class : REPTILIA
Order : SQUAMATA
Suborder : SAURIA

Family GEKKONIDAE

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	42.	Mabuya beddomii (Jerdon)	...	40
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GLOSSARY

Adhesive pad	:	A clinging structure possessed by geckos by expansion and modification of the plates on the undersurface of their toes.
Anal plate	:	The single or divided scale just in front of the vent.
Arboreal	:	Tree-dwelling.
Bifid	:	Forked.
Bipedal	:	Walking on two legs ; Holding back the forelimbs along the sides of the body when running.
Carinate	:	Keel shaped.
Casque	:	Cephalic (head) appendage.
Cycloid scales	:	Scales with evenly curved edges.
Ciliaries	:	A single row of tiny scales that particularly surround the eye.
Dorsals	:	Scales on the back.
Dorsum	:	Upper side of an animal.
Femoral pores	:	Pores perforating a scale or lying between two or three scales along the undersurfaces of the thigh in geckos, lacertids, and varanids.
Gular	:	Pertaining to throat of a lizard.
Imbricate	:	Overlapping, like shingles.
Inguinal	:	Pertaining to the thigh region.
Keel	:	A sharp edge.
Labials, upper	:	Scales bordering the upper lip.
Labials, lower	:	Scales bordering the lower lip.

Lamellae	:	The plates forming pads on the feet of geckos, skinks, and lacertids.
Mucronate	:	Ending in a sharp point.
Nocturnal	:	Active by night.
Ocelli (Ocellus, singular)	:	Simple eye-like spots.
Osteoderms	:	Small bony plates in the skin.
Pentadactyl	:	Having five digits.
Pentadactyl limb	:	The typical limb of higher vertebrates.
Pholidosis	:	The arrangement and shape of the scales.
Preanal pores	:	Pores in front of the anus.
Prehensile	:	Able to grasp.
Terrestrial	:	Living on the ground.
Tarsal	:	Pertaining to the ankle.
Tuberculate	:	Covered with small, rounded bumps.
Tympanum	:	A drum-like structure e.g. an ear drum.
Ventral	:	Towards the belly.
Venter	:	Undersides.
Vestigial	:	Rudimentary.
Wattles	:	Fleshy appendages on the chin of a flying gecko.

KEY TO THE LIZARDS OF WESTERN GHATS

- | | |
|---|--|
| 1. Tongue slender, forked | Varanidae (<i>Varanus bengalensis</i>) |
| Tongue neither slender nor forked | 2 |
| 2. Top of head with symmetrical shields | 3 |
| Top of head without symmetrical shields | 4 |
| 3. Body covered with osteodermal plates,
femoral pores absent | 41 (Scincidae) |
| Body covered with osteodermal plates,
femoral pores present | 60 (Lacertidae) |
| 4. Eyes usually without movable eyelids ;
digits clawed | 5 (Gekkonidae) |
| Eyes with movable eyelids ; digits free | 30 (Agamidae) |
| 5. Eyelids movable | <i>Eublepharis macularius</i> |
| Eyelids immovable | 6 |
| 6. Digits dilated ; forming adhesive pads | 7 |
| Digits not dilated ; not forming adhesive
pads | 9 |
| 7. Inner digit well developed | 8 |
| Inner digit vestigial (Fig. 2) | <i>Hemiphyllodactylus typus auranticus</i> |
| 8. Subdigital lamellae single (Fig. 3b) | <i>Dravidagecko anamallensis</i> |
| Subdigital lamellae divided (Fig. 4b) | 21 (<i>Hemidactylus</i>) |
| 9. Pupil vertical | 10 (<i>Cyrtodactylus</i>) |
| Pupil round | 12 (<i>Cnemaspis</i>) |
| 10. Dorsal scales not larger than ventrals | <i>collegalensis</i> |
| Dorsal scales larger than ventrals | 11 |
| 11. Subdigital lamellae broader | <i>albofasciatus</i> |
| Subdigital lamellae smaller | <i>dekkanensis</i> |
| 12. Sides of the body without spine-like
projecting tubercles | 13 |
| Sides of the body with spine-like projec-
ting tubercles | 18 |
| 13. Males with femoral pores (Fig. 5) | 14 |
| Males without femoral pores | 17 |
| 14. Males with preanal pores | <i>mysoriensis</i> |
| Males without preanal pores | 15 |
| 15. Back with small, uniform, keeled granules | <i>indica</i> |
| Back with large, rounded, pointed or
keeled tubercles | 16 |
| 16. 4-6 pores on each side | <i>wynadensis</i> |
| 7-8 pores on each side | <i>sisparensis</i> |
| 17. Back with small granules intermixed with
much larger tubercles ; ventral scale not
keeled | <i>ornata</i> |

- | | |
|---|---------------------|
| Back with small granules intermixed with not much larger tubercles ; ventral scale keeled | <i>beddomei</i> |
| 18. Digits strongly dilated at the base | <i>littoralis</i> |
| Digits scarcely or not dilated at the base | 19 |
| 19. Scales under the neck not keeled | <i>jerdoni</i> |
| Scales under the neck keeled | 20 |
| 20. Males with 2-4 preanal and 3-6 femoral pores | <i>kandianus</i> |
| Males with 2-3 preanal and 2-4 femoral pores | <i>goaensis</i> |
| 21. Back with strongly keeled and regularly arranged tubercles | 22 |
| Back with feebly keeled and regularly arranged tubercles | 27 |
| 22. Inner digit at least half as long as the dilated portion | 23 |
| Inner digit not half as long as the dilated portion | 26 |
| 23. Subdigital lamellae in straight series ; brown above with darker spots forming transverse undulating bars | <i>maculatus</i> |
| Subdigital lamellae in oblique series | 24 |
| 24. Dorsal tubercles large : digits free | 25 |
| Dorsal tubercles moderate ; digits distinctly webbed at the base | <i>prashadi</i> |
| 25. Dorsal tubercles very large ; 7-10 lamellae under the fourth toe ; back with dark cross-bars | <i>triedrus</i> |
| Dorsal tubercles large ; 8-10 lamellae under the fourth toe ; back with dark spots | <i>brooki</i> |
| 26. Dorsal granules mixed with oval tubercles ; back with dark quadrangular spots | <i>gracilis</i> |
| Dorsal granules mixed with erect conical tubercles ; back with dark reticulations | <i>reticulatus</i> |
| 27. Inner toe less than half of length of second toe ; male with a continuous series of preano-femoral pores (Fig. 4) | <i>frenatus</i> |
| Inner toe more than half of length of second toe ; male without a continuous series of preano-femoral pores | 28 |
| 28. Tail with enlarged tubercles | 29 |
| Tail with uniform scales above | <i>giganteus</i> |
| 29. 11-14 lamellae under the fourth toe : 5-7 pores on each side | <i>flaviviridis</i> |

- 9-11 lamellae under the fourth toe ; 10-17 pores on each side *leschenaulti*
30. Body with a wing-like expansion *Draco dussumieri*
Bony without a wing-like expansion 31
31. Body not depressed 32
Body depressed 35 (*Psammophilus*)
32. Four toes only (Fig. 8) *Sitana ponticeriana*
Five toes 33
33. Tympanum hidden *Otocryptis beddomii*
Tympanum exposed 34
34. Dorsal scale-rows 115-150 36 (*Salea*)
Dorsal scales equal 37 (*Calotes*)
35. Midbody scale-rows 115-150 *dorsalis*
Midbody scale-rows 80-100 *blanfordanus*
36. A strong fold in front of the shoulder *anamallayana*
No fold in front of the shoulder *horsefieldi*
37. Fold in front of the shoulder neither long nor extending across the throat 38
Fold in front of the shoulder long and extending across the throat 40
38. Dorsal scales not larger than the ventrals *calotes*
Dorsal scales larger than the ventrals 39
39. Midbody scale-rows 36-45 *nemicola*
Midbody scale-rows 27-35 *grandisquamis*
40. No spine behind the superciliacum ; no white spot below the eye *rouxi*
40. A spine behind the superciliacum ; a white spot below the eye *elliotti*
41. Palatine bones meeting on the mid-line of the palate 42
Palatine bones separated on the mid-line of the plate *Eumeces poonaensis*
42. Palatal notch extending anteriorly to the level of centres of the eyes 47 (*Mabuya*)
Palatal notch not extending anteriorly to the level of centres of the eyes 43
43. Limbs robust, long 44
Limbs feeble, short 50 (*Riopa*)
44. Lower eyelid scaly 45
Lower eyelid with a transparent disc 53 (*Scincella*)
45. Supranasals present *Dasia subcaerulea*
Supranasals absent 46
46. Claws retractile into a sheath 57 (*Ristella*)
Claws not retractile into a sheath *Sphenomorphus dussumieri*

47.	Back with dorso-lateral stripes only	48
	Back with well-defined vertebral and dorso-lateral stripes	49
48.	Back with small dark markings ; sides with white spots ; postnasal present or absent	<i>macularia</i>
	Back uniform bronze or green ; sides without distinct spots t no postnasal	<i>carinata</i>
49.	Back with 4 distinct dark stripes	<i>beddmii</i>
	Back with 3 longitudinal stripes	<i>trivittata</i>
50.	Five fingers and four toes	51
	Four fingers and four toes	<i>lineata</i>
51.	Scale-rows at midbody 30	<i>goaensis</i>
	Scale-rows at midbody not exceeding 28	52
52.	Scale-rows at midbody 24-28	<i>punctata</i>
	Scale-rows at midbody 24-26	<i>quentheri</i>
53.	Ear with projection lobules	<i>bilineatum</i>
	Ear without projecting lobules	54
54.	Fronto-parietal single or partly divided	55
	2 Fronto-parietals	56
55.	Scale-rows at midbody 22-26 ; fronto-parietal single or partly divided	<i>travancoricum</i>
	Scale-rows at midbody 28-30 ; fronto-parietal single	<i>palnicum</i>
56.	20-24 scale round the body	<i>beddomei</i>
	26-28 scale round the body	<i>laterimaculatum</i>
57.	Prefrontals distictly separate	58
	prefrontals united into a single shield	59
58.	Ear-opening much larger than the nostrill ; dorsal scales smooth or feebly keeled	<i>rurki</i>
	Ear-opening slightly larger than the nostril ; dorsal scales definitely kneeled	<i>travancorica</i>
59.	22-24 scales round the body	<i>quentheri</i>
	26-28 scales round the body	<i>beddomii</i>
60.	Lower eyelid distinct from the rudimentary upper eyelid	<i>Cabrita leschenaulti</i>
	Lower eyelid fused to the rudimentary upper eyelid	61
61.	Fronto-nasal single	<i>Ophisops jerdoni</i>
	More than one fronto-nasal	<i>Ophisops beddomei</i>

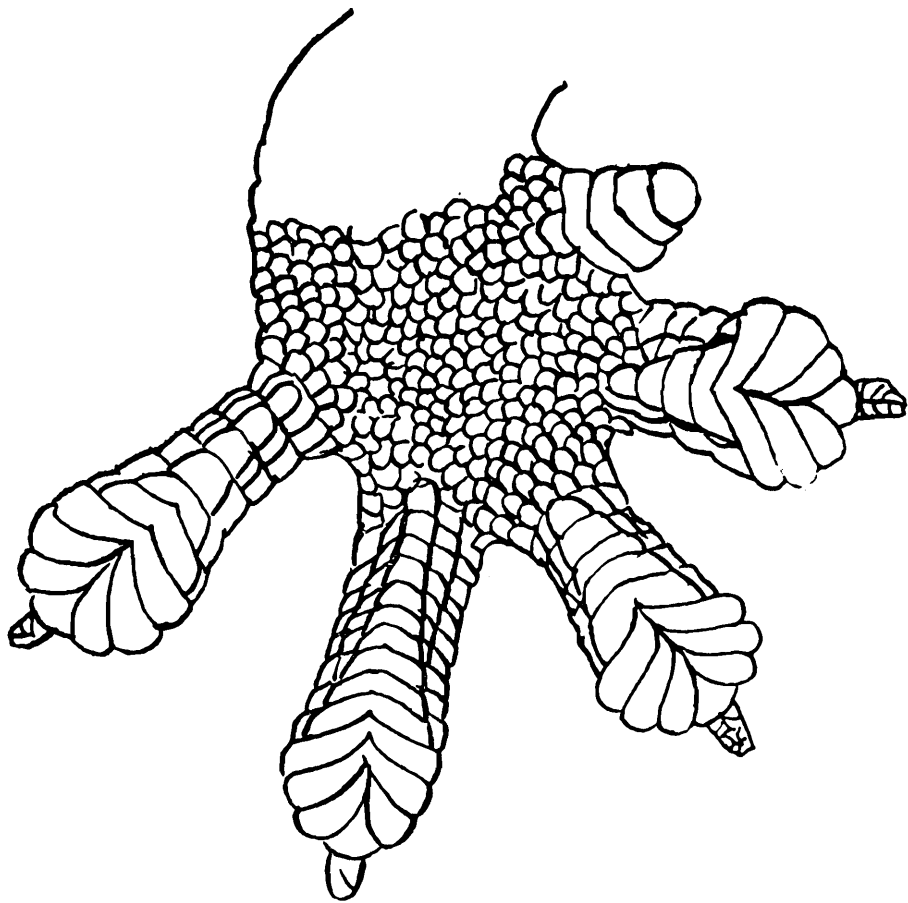


Fig.-2

Lower surface of foot of *Hemiphyllodactylus*

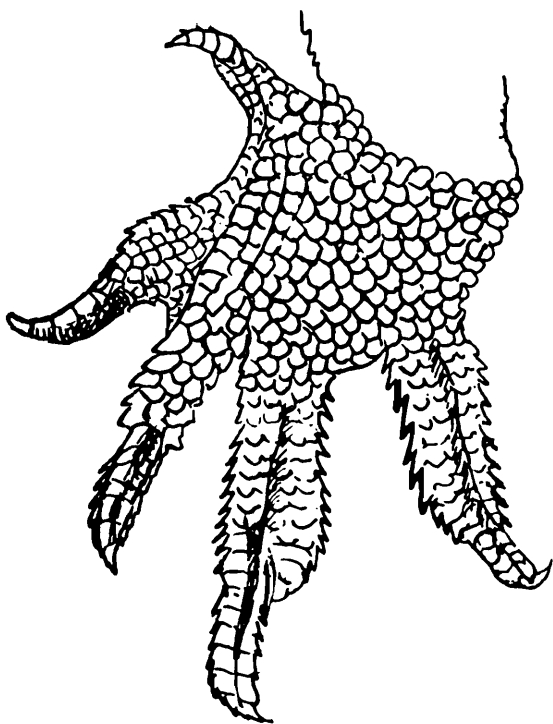


Fig-3A

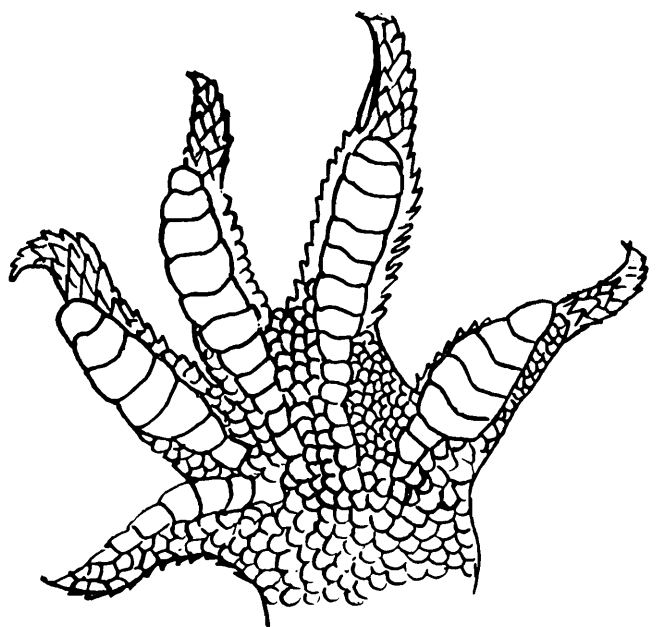


Fig.-3B

Foot of *Dravidogecko*
A. Upper, and B. Lower surface

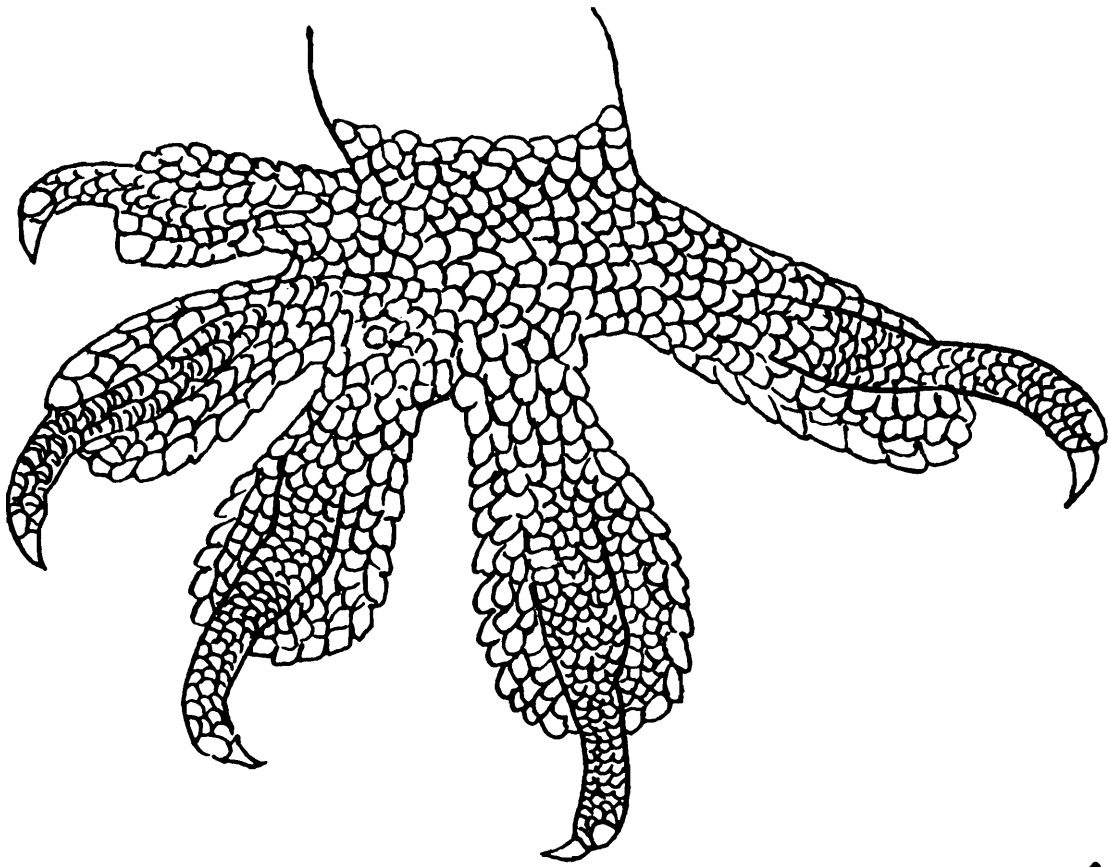


Fig.-4A

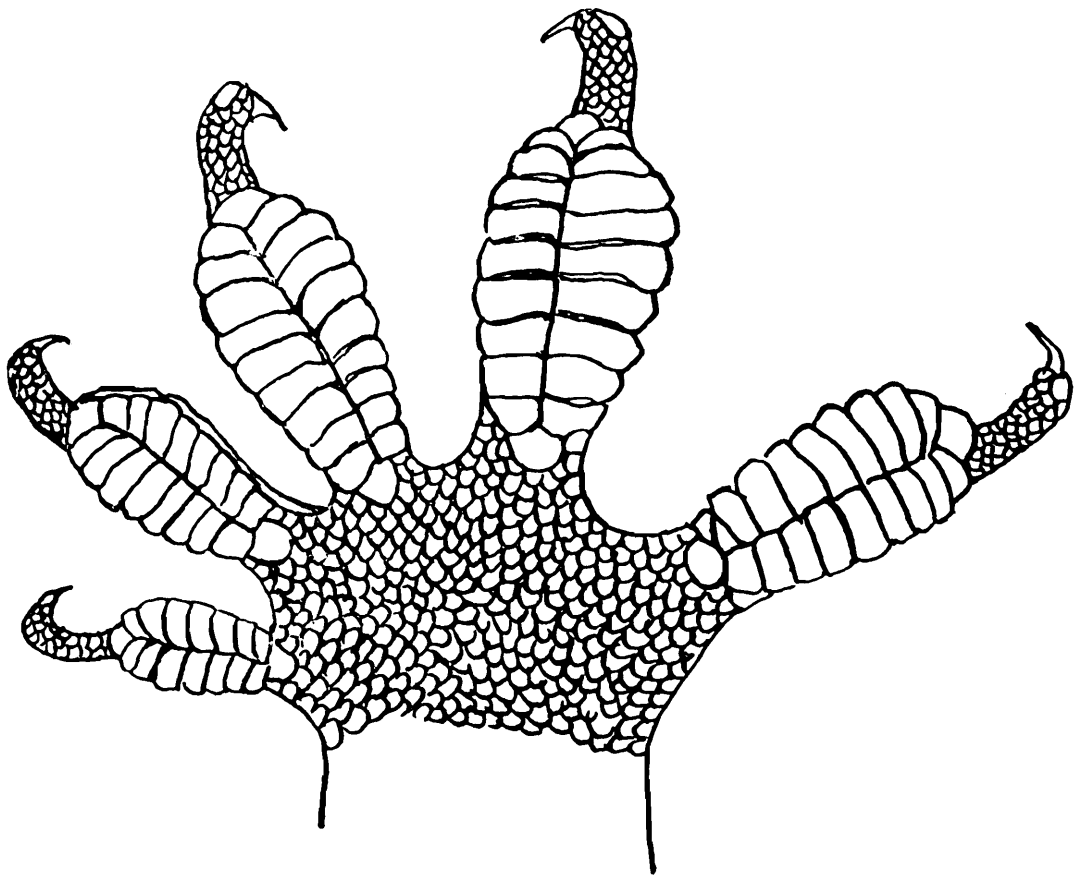


Fig.-4B

Foot of *Hemidactylus* A. Upper, and B. Lower surface

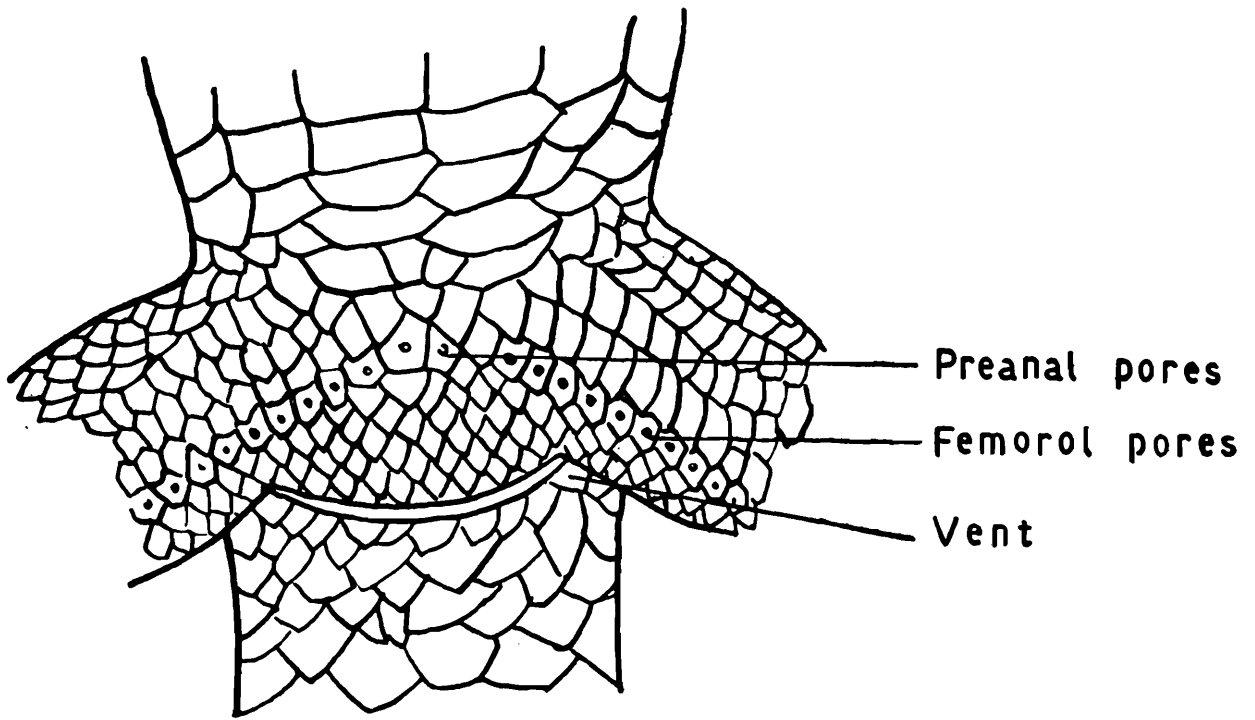


Fig:5

Inguinal region of a gecko showing femoral and preanal pores

ACCOUNTS OF SPECIES

Family GEKKONIDAE

Genus *Cyrtodactylus* Gray

ROCK-GECKOS

Generic Diagnosis: Geckos of the genus *cyrtodactylus* are characterised by strongly bent clawed toes, (Fig. 6) dorsoventrally compressed bodies and a vertical pupil. The scalation is composed of minute scales, shields, and trihedral tubercles. All are small species and handsomely and conspicuously coloured.

Three species represented by few specimens are recorded from Western Ghats.

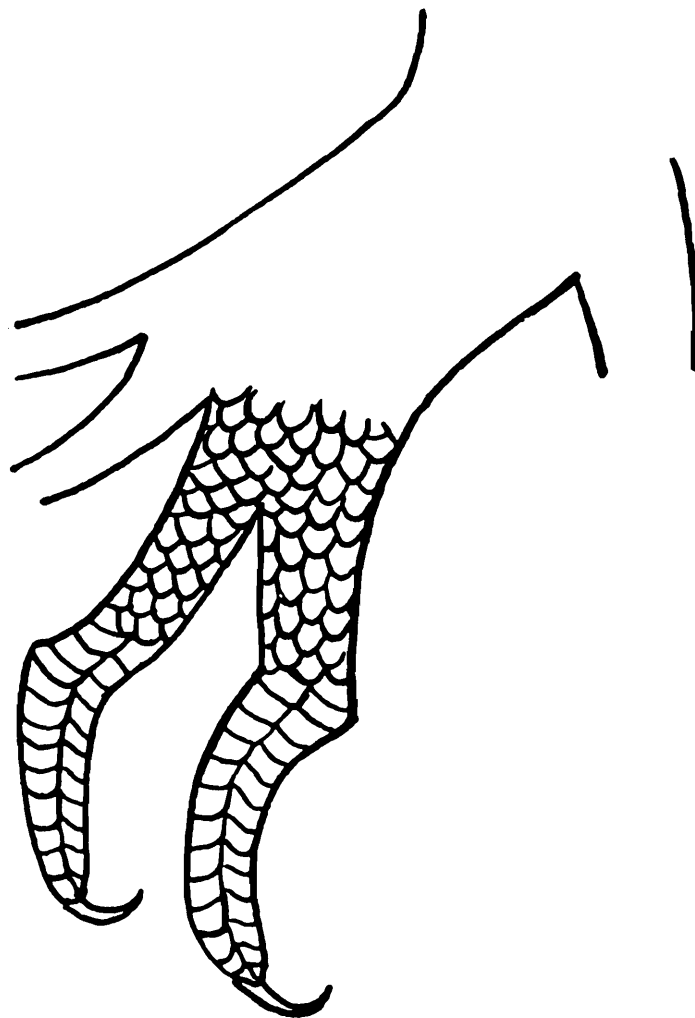


Fig-6

Foot of *Cyrtodactylus*

Cyrtodactylus collegalensis (Beddome)

Collegal Rock-Gecko

Description : A smallish and stoutly built gecko. Head moderate and tail shorter than the head and body. Dorsal pholidosis composed of small granular scales intermixed with larger keeled scales ; mid-body scales in 40 rows, Tail swollen at the base and tapering to a point. Male without pores or enlarged scales.

Colour : A conspicuously and handsomely coloured gecko. Two races Viz., *speciosus* and *collegalensis* are recognised on the basis of colour. Dorsum of the former has three dark brown cross bands while that of the latter is marked by large, oval, black paired spots. Head spotted with brown in both.

Size : From snout to vent 53 mm ; tail 41 mm.

Field Notes : Mainly a forest species where it is found under stones or bark of dead trees. Two examples were picked up by the author (1982) from loose soil in Upper Aliyar, Anaimalais.

Distribution : Hills of Southern India and Sri Lanka.

Cyrtodactylus dekkanensis Gunther

Deccan Rock-Gecko

Description : Head large ; 10-12 upper and 9-11 lower labials. Dorsal pholidosis is composed for the most part of shields or plates which are much larger than the ventral scales ; mid-body scale rows 33. Tail feebly swollen and tapering to a point.

Colour : Reddish-brown above and whitish below. Back and tail with narrow, whitish brown-edged transverse bars. From snout to vent 63 mm ; tail 53 mm.

Distribution : Matheran and Vihar Lake, Maharashtra.

Cyrtodactylus albofasciatus (Boulenger)

Description : Similar to *dekkanensis* from which it differs in possession of a less uniform scalation and slightly broader subdigital lamellae. Mid-body scale rows 33.

Colour : This rock-gecko agrees in colouration also with *dekkanensis* but the white cross-bars on the back of this gecko are brilliant yellow (in life).

Size : From snout to vent 62 mm ; tail 53 mm.

Distribution : North and South Kannada districts of Karnataka. Majority of the specimens known were taken from the Castle Rock, Karnataka.

Genus *Cnemaspis* Strauch

Generic Diagnosis : Geckos of the genus *Cnemaspis* inhabit the forests of Western Ghats and are recognised by toes (Fig. 7) that are slender and clawed, a granular or tuberculated body which is depressed and a round pupil. Males with preanal and femoral pores.

All the eleven species known from India are confined to the Western Ghats.

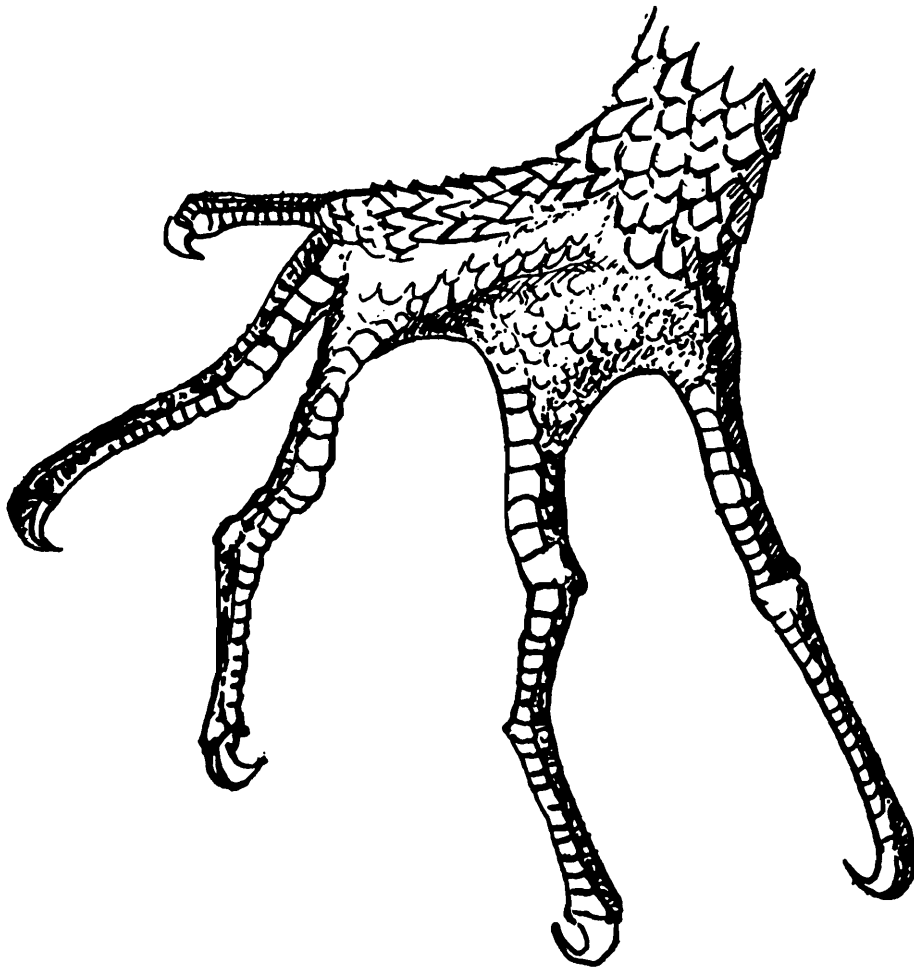


Fig.-7

Foot of *Cnemaspis*

Cnemaspis indica (Gray)

Description : Head covered with small, granular, keeled scales ; back with much larger, rounded, pointed or keeled tubercles ; ventral scales smooth. Digits elongate. Tail cylindrical. Males with 4-5 femoral pores on each side.

Colour : Brown above and brownish white below. Throat darker and suffused with white. Back marbled brown or greenish brown with a series of black-edged spots in the middle and on the flanks.

Size : From snout to vent 38 mm ; tail 41 mm.

Distribution : Nilgiris ; Coorg, Karnataka, The commonest forest gecko of Nilgiris. The author's collection contained as many as twelve localities in the Nilgiris.

Cnemaspis wynadensis (Beddome)

Description : Back with larger, rounded or pointed keeled tubercles ; ventrals as large as the dorsals. Digits elongate. Tail cylindrical. Male with 4-6 femoral pores on each side.

Colour : Brownish above and paler beneath. Throat darker and mottled with white. Tail with lighter darker markings.

Size : From snout to vent 40 mm ; tail 42 mm.

Distribution : Wynaad area, Kerala. Very common in the Silent Valley, Kerala (Murthy, 1981).

Cnemaspis sisparensis (Theobald)

Description : Scallation on the back as in *wynadensis* ; digits longer. Males with 7-8 femoral pores.

Colour : Brownish with a series of dark brown oblong spots arranged in three longitudinal lines. Tail with lighter and darker bars above.

Size : From snout to vent 62 mm ; tail 50 mm.

Distribution : Known hitherto from three types taken from the Sispara Ghat, Nilgiris, and Kavalai, Kerala. Two examples were picked up by the author (1981) from under stones in the Silent Valley and New Amarambalam Reserve Forest, Kerala.

Cnemaspis ornata (Beddome)

Description : 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.

Colour : Brown above and pale brownish on the undersides. Back with blackish ocelli down the vertebral line.

Size : From snout to vent 52 mm ; tail 65 mm.

Distribution : Tirunelveli, Tamil Nadu, Anaimalais, Malappuram and Hills of South Kerala, Western Ghats.

Cnemaspis beddomei (Theobald)

Description : Head short. Back with smaller but enlarged tubercles and belly with keeled scales. Tail swollen at the base.

Colour : Brown above with numerous darker markings and pale brownish below. Tail with light and dark bars.

Size : From snout to vent 50 mm ; tail 52 mm.

Distribution : Nilgiris and Hills of Tirunelvell and South Kerala.

Cnemaspis mysoriensis (Jerdon)

Description : Head covered with small, granular, keeled scales ; 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. Male with 2-3 preanal and 3-4 femoral pores on each side.

Colour : Brown above and brownish white below. Back with a midstripe and prominent dark brown spots. Throat suffused with brown. Digits with dark bars.

Size : From snout to vent 26 mm ; tail 38 mm.

Distribution : South Indian Hills upto 1000 M as far north as lat. 13°

Cnemaspis kandianus (Kelaart)

Description : Differs from other forest geckos in the presence of small, widely separated, spine-like tubercles on the sides of the body.

Scales under the neck are keeled and those on the belly smooth. Male with 2-4 preanal and 3-6 femoral pores on each side.

Colour : Back with a dorsal mid-stripe and is crossed by transverse variegations. Throat mottled with dark ; spinelike tubercles whitish.

Size : From snout to vent 400 mm ; tail 44 mm.

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

***Cnemaspis goaensis* Sharma**

Description : Head covered with small, granular, keeled scales, intermixed with a few larger rounded tubercles ; flanks with much separated spine-like tubercles. Scales under the neck feebly keeled and those of the belly are imbricate, few on sides. Tail cylindrical. Males with 2-3 preanal and 2-4 femoral pores on each side.

Colour : Brown above with eight W-shaped dark brown marks on the back. Head, limbs, and flanks variegated with lighter and darker markings ; portion below the nape and throat suffused with black.

Size : From snout to vent 30 mm ; tail 41 mm.

Distribution : Around Canacona, Goa.

***Cnemaspis jerdoni* (Theobald)**

Description : Head covered with small granular scales ; back with small uniform scales ; ventral scales rather large, imbricate, smooth. Flanks with spines. Male with 5-15 femoral pores on each side.

Colour : Dorsally greyish brown above with lighter and darker spots. Two or three jet black spots on the nape. Tail with conspicuous dark bands above.

Size : From snout to vent 40 mm ; tail 44 mm.

Distribution : Nilgiris, Anaimalais. Palanis, and Sivagiris, Western Ghats ; Sri Lanka.

***Cnemaspis littoralis* (Jerdon)**

Description : Habitus slender. Head covered with minute scales, body with small, uniform and granular scales while the ventrals are

smooth. Digits strongly dilated at the base and the subdigital lamellae are large. Flanks with spines. Male with 14-18 femoral pores on each side.

Colour : Greyish brown dorsally with a row of white black edged spots running down the back. A distinct black spot on the neck. Under-sides dirty whitish.

Size : From snout to vent 30 mm ; tail 35 mm.

Distribution : Nilambur, Kerala ; Nellakota, Nilgiris, Tamil Nadu.

Genus *Dravidogecko* Smith

Generic Diagnosis : Geckos of this genus are rare and recognised by a granulated body, clawed digits, undivided subdigital lamellae and eyes with vertical pupil. Males have both the preanal and femoral pores.

Represented by a single species confined to Western Ghats.

Dravidogecko anamallensis Gunther

Description : In addition to the generic characters listed above : Toes with a rudiment of web. Tail cylindrical and swollen at the base. Male with a continuous series of preano-femoral pores from 4 to 24.

Colour : Greyish-brown above and marbled with light dots ; brownish-white below.

Size : From snout to vent 45 mm ; tail 50 mm.

Distribution : Anamalais, Palnis, and Hills of Tirunelveli, Western Ghats.

Genus *Hemidactylus* Oken

Generic Diagnosis : The large and widely distributed genus of *Hemidactylus* is distinguished by a granulated or tuberculated body, ovoid and dilated digits, divided subdigital lamellae, clawed toes and a vertical pupil. The entire foot is modified as a powerful adhesive pad. Males have preanal and/or femoral pores.

Hemidactylus maculatus Dumeril & Bibron

Description : Size large. Back with small juxtaposed scales and large trihedral tubercles, arranged in about 20 fairly longitudinal rows.

Belly with smooth, rounded, imbricate scales ; 11-13 lamellae under the fourth toe. Male with 19-25 preano-femoral pores.

Colour : Dorsally brown with darker spots which unite sometimes to form undulating cross-bars and dirty whitish below. Head with two dark stripes on each side. Young with five distinct dorsal cross-bars. Tail of the young and adult banded alternately.

Size : From snout to vent 115 mm ; tail 130 mm. One of the largest of the Indian hemidactyles. (See *giganteus*).

Distribution : Bombay and Pune, Maharashtra ; Malappuram District, Kerala ; Tirunelveli and Salem, Tamil Nadu. Anderson's (1871) record of this gecko from Berar, Karnataka finds no mention in the works of Boulenger (1890) or Smith (1935).

Hemidactylus triedrus (Daudin)

Description : Large in size. Body heavily tuberculated, A large series of preanal and femoral pores varying from 24-30. Upper labials 8-9 and lower labials 7-9.

Colour : Colour pattern very distinctive. Yellowish above with four dark-brown cross-bars and whitish ventrally. Tail marked with regular black and light rings.

Size : From snout to vent 79 mm ; tail 89 mm.

Distribution : Sivagiris and Nilgiris, Western Ghats ; Bombay District and Pune, Maharashtra ; Ajmer, Rajasthan ; Indore, Madhya Pradesh ; Mysore, Karnataka ; Trivandrum, Kerala.

Hemidactylus brooki Gray Spotted Indian House Gecko

Description : Scales on the body granular with 14-19 rows of trihedral tuberues. Upper labials 8-11, lower labials 7-10. Lamellae on the fourth toe 6-10. Femoral and preanal pores vary from 15 to 27.

Colour : Dorsally dark-brown to light grey with a series of black spots regularly arranged. Snout with two dark lines. Undersides whitish.

Size : From snout to vent 57 mm ; tail 74 mm.

Field notes : Although it is characteristically a domestic gecko over much of its range, this house lizard is often found quite away from human

buildings. The author had seen several of them in the bark of trees, in and under logs and other debris of the forested areas in Western Ghats. It is nocturnal in its habits and is very inactive during the winter. While hunting its prey it comes down and moves quickly on the ground too.

The female house-gecko lays two eggs in secluded spots. The commonest house-gecko frequents the kitchen where its presence has proved effective in the control of undesirable insects.

Distribution : Recorded from Borneo and South China through most of tropical Asia and the northern half of Africa.

Hemidactylus prashadi Smith

Description : Body covered with small granular scales intermixed with much larger subtriangular tubercles. Upper labials 11-12 ; lower labials 9-11. Fourth toe with ten subdigital lamellae. Male with 17-20 preano-femoral pores separated by three scales.

Colour : Brownish grey above with three faint cross-bars on the back.

Size : From snout to vent 82 mm ; tail 97 mm.

Distribution : Jog, North Kannada District, Karnataka.

Hemidactylus gracilis Blanford

Description : Body slender ; back with small scales and series of oval, keeled tubercles ; upper labials 9, lower labials 7 ; lamellae on the fourth toe 9. Male with six preanal pores.

Colour : Grey above with dark-brown rectangular spots arranged in two longitudinal rows separated by a thin mid streak. Undersides whitish.

Size : From snout to vent 41 mm ; tail 33 mm.

Distribution : Smith (1935) gives the range of this gecko as "S.E. Berar and Raipur, Central provinces (=Madhya Pradesh) ; Bombay presidency (=Maharashtra)". Underwood (1948) recorded it from Pune, Maharashtra and more recently the author (1983) reported it from Kurnool District, Andhra.

Hemidactylus reticulatus Beddome

Reticulate Gecko

Description : Back with erect, keeled granules and enlarged, pointed and keeled tubercles ; lamellae on the fourth toe 10. Male with 11 preanal pores.

Colour : 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.

Size : From snout to vent 40 mm ; tail 40 mm.

Distribution : Madura and Shevaroyis, Tamil Nadu ; Palnis, Western Ghats ; Karnataka ; Palkonda Hills and Nallamalas, Andhra.

Hemidactylus frenatus Schlegel

South Asian Waif Gecko

Description : Body smooth. Upper labials 10-11, lower labials 8-10. First toe less than half of length of second ; lamellae under the fourth toe 9-11. Male with a continuous series of 23 or more preano-femoral pores.

Colour : Dark brownish dorsally and dirty whitish below. A dark stripe through the eye to the sides and groin. Flanks with dark spots. Tail scarlet red in young.

Size : From snout to vent 60 mm ; tail 65 mm.

Field notes : Although it is a common house-gecko in South India, the author found this species quiet often in the bark of coconut trees. Some individuals were found in the axils of palm fronds or beneath debris in outdoor locations. The call of this gecko is a series of loud, staccato notes. It competes successfully with the other common house-gecko, *brookii*.

Distribution : Bengal ; Southern India ; Sri Lanka ; Southern Indo-China.

Hemidactylus leschenaulti Dumeril & Birbon

Description : Body scales granular, minute, and intermixed with small tubercles irregularly scattered ; scales on the underside small and imbricate ; 10-11 lamellae under the fourth toe. Males with 10-17 femoral pores on each side.

Colour : 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.

Size : From snout to vent 84 mm ; tail 84 mm.

Field notes : Although this gecko is called Tamarind Tree Gecko, it is also found on other large trees such as Mango and Banyan, It usually lies concealed under bark of these trees situated several feet above the ground. It runs about on the tree trunks but never comes down. It frequents the human dwellings in Madras City.

Distribution : Anaimalais, palnis, Alagiri Hills, Malappuram District, and Nilgiris, Western Ghats ; Ramanathapuram and Madras Districts, Tamil Nadu ; Palkonda Hills and Godavary valley, Andhra ; Belgaum, Karnataka ; Bombay, Pune, and Nagpur, Maharastra ; Khandesh and Dangs, Surat, Gujrat ; South of Jaisalmer, Rajasthan ; Calcutta ; Sri Lanka.

Hemidactylus flaviviridis Ruppell

Yellow-Bellied House-Gecko

Description : Tubercles on the body absent or negligible in number. Upper labials 11-14, lower labials 9-12. Fourth toe with 12-15 lamellae. Male with 12 preano-femoral pores.

Colour : This gecko is reported to change its colour rapidly and that it appears in different hues during day and night.

Back olive brown by day, with wavy cross-bars and pale grey by night without any trace of the markings. Ventral surfaces remain lemon yellowish always.

Size : From snout to vent 90 mm ; tail 90 mm.

Field notes : This gecko is seldom seen far from human dwellings but is found occasionally on huge banayan trees. It is an excellent climber of high ceilings, never descending to the ground. It is primarily a nocturnal creature although it is active by day sometimes. Prolonged fights between adults are common. The Yellow-bellied House Gecko's call may be like the chirping of a bird and it can be heard clearly during calm nights.

Distribution : Northern India ; Bombay and Pune, Maharastra ; Gujarat ; West Bengal ; from the shores of the Red Sea and around the coasts of Arabia and Iran.

Hemidactylus giganteus Stoliczka

Description : Size large. Back with more or less uniform small granules ; no enlarged tubercles ; belly with smooth, rounded, imbricate

scales ; 13-15 lamellae under the fourth toe. Male with 40 preane-femoral pores.

Colour : Greyish dorsally and whitish on the undersides. Back with prominent and large W-shaped cross-bars.

Distribution : Godavary valley, Palkonda Hills, and Kurnool District, Andhra ; Lingasagar, Karnataka ; Malappuram District, Kerala.

Field notes : Some individuals peeping out of their crevices in the high ruined ceilings of the fortress at Gooty, Anantapur Dt., Andhra and in the arches of the temple at Ahobilam, Kurnool Dt., Andhra were sighted by the author (1983). Repeated attempts to capture some of these huge geckes met with no success.

Genus *Hemiphyllodactylus* Bleeker

Generic Diagnosis : Geckos of this genus are recognised by short, compressed, free, and clawed digits and an almost vestigial inner digit, a body with granular scales and a vertical pupil. Males with preanal and femoral pores.

Represented by one species in the Western Ghats.

Hemiphyllodactylus typus auranticus Beddome

Description : Body covered above with numerous, minute granular scales and belly with rows of small, rounded scales ; tail without spines. Upper labials 9, lower labials 9-10 ; chin devoid of shields. Pupil elliptic, erect. 5-7 femoral and 7-9 preanal pores.

Colour : Brown above with black streaks on the neck and anterior region of the body and flecked with black on the middle of the back and posteriorly ; whitish beneath, Tail orange in colour with black blotches.

Size : From snout to vent 36 mm ; tail 34 mm.

Distribution : Shevaroy, Tamil Nadu ; Anaimalais & Nilgiris, Western Ghats. A rare species known by a few specimens.

Genus *Eublepharis* Gray

Fat-Tailed Geckos

Generic Diagnosis : This small genus of Fat-tailed Geckos differs basically from other geckos in having movable eyelids and an elliptical

pupil. It is further characterised by a set of following features : short, straight clawed digits with a series of transverse lamellae on underside ; back with small minute granules intermixed with tubercles and belly with flat and imbricate scales ; a cylindrical, fleshy, carrot-like tail which is shorter than the head and body ; male with 9-14 preanal pores.

One species is reported from Western Ghats.

Eublepharis macularius (Blyth)

Fat-Tailed Lizard

Description : As for the genus.

Colouration : *variable Juvenile* : dark brown to black with 2-3 wide yellow bands across trunk ; tail with 4-6 transverse stripes ; belly whitish. *Adult* : straw yellow to pale grey with blue-black spots on the back ; pale whitish below.

Size : From snout to vent 123 mm ; tail 90 mm.

Field notes : This gecko is a strictly nocturnal species and avoids dry, cool or windy weather. It tends to live in colonies and is found in the desert and sparse grassland with clay soil. It is a voracious feeder and preys chiefly upon several kinds of insects, scorpions, spiders and sometimes even smaller geckos. It is slow and deliberate in its movements and when annoyed, it rises its body and tail which is swayed about. Then it makes an unusual noise like that of running down of a watch and opens its mouth as if readying itself to bite. The female lays about 4-7 eggs in a clutch.

Distribution : From southern Transcaspia and Iraq to N.W.F.P., Pakistan to south of Rajputana and Khandesh District, Maharashtra. The recent record by Underwood (1948) came from "the area bounded by the hills on either side of the road going to pasthan village, Pune, Maharashtra."

Family AGAMIDAE Genus **Draco** Linnaeus

Generic Diagnosis : This genus includes the so called Flying Lizards which are recognised by a large lateral wing-like membrane, a gular appendage, and a lateral flap or wattle on either side of the throat. Tympanum distinct or covered with scales. Tail long. No femoral or preanal pores.

Represented by one species in the Western Ghats.

Draco dussumieri Dumeril and Bibron

South Indian Flying Lizard

Description : Nostrils directed vertically upwards ; tympanum naked ; six patagial ribs ; a conical scale at the posterior part of the orbit ; scales on the back are unequal and unkeeled and those on the underparts are strongly keeled and large ; a series of tubercles on the flanks.

Colour : Greyish-brown dorsally with darker markings and a series of dark circles ; patagia purplish black with light, rounded yellowish spots ; colour pattern of the patagia which may be different in the two sexes is a valuable aid in identification ; undersides greyish with a series of large black marginal spots ; throat dark blue suffused with black spots.

Size : From snout to vent 95 mm ; tail 135 mm.

Field notes : The flying lizards are entirely arboreal animals never descending to the ground except for breeding purposes. The author had seen several of them in pairs in the tree trunks in the coconut and betel-nut plantations of Tamil Nadu and Kerala. The wing-like patagia are folded back when the lizard is at rest and they are expanded when the creature leaps from tree to tree. It appears then as if this lizard is flying when it actually glides supported by the lateral folds of skin. The gular pouch of the male is longer than that of the female.

Flying lizards feed on insects, grubs etc, for which they hunt in broad day light. The female lays 2.5 eggs which are buried in the ground.

Distribution : Tamil Nadu ; Kerala ; Coorg, Karnataka ; Karwar, Maharashtra ; Goa. The author had ample opportunities (1981) to observe several pairs of this arboreal lizard in the forests of new Amarambalam and Silent Valley, Kerala where it is apparently common.

Genus *Sitana* Cuvier

Generic Diagnosis : This genus contains one species, *Sitana ponticeriana* found throughout India except the desert zone.

Sitana ponticeriana Cuvier

Description : Resembles a small *calotes* superficially but this lizard has a longer tail and is without a dorsal crest. Body compressed and is covered with regular keeled scales smallest on the sides. Limbs long,

four instead of the normal five toes on the hind feet. Tympanum naked. No preanal or femoral pores. Males with a gular pouch, red in colour.

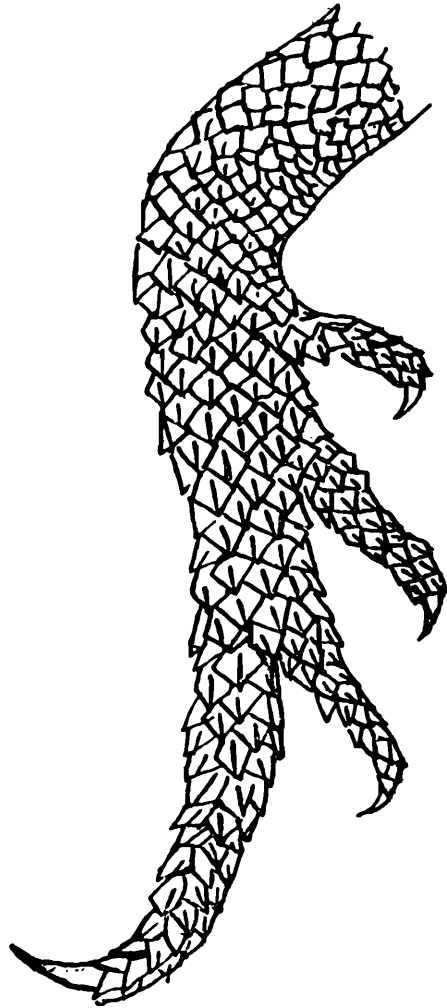


Fig.8

Foot of *Sitana*

Colour : Dorsum dark brown with a series of black-edged rhomboidal spots along the middle of the back ; a light line running along the sides to which is added another light vertebral line ; belly whitish.

From snout to vent 50 mm ; tall 135 mm — 150 mm.

Field notes : This lizard prefers bushy places in the open country and dry areas, It is a fast runner and escapes from danger easily by dashing away into some hole or crack in the ground or into a bush. While running speedily it adopts a bipedal method of locomotion. It folds and unfolds its gular pouch when excited. The male attracts the female by display of its (male's) gular pouch which assumes a brilliant colouration during courtship.

The female lays 6-8 eggs which are buried in the soil.



Fig.-9

Foot of *Otocryptis*

Distribution : As mentioned in the description of the genus and Sri Lanka.

Genus *Otocryptis* Wagler

Generic Diagnosis : This genus of rare agamids is characterised by a compressed body, a hidden tympanum and the absence of a dorsal scales unequal and keeled. Limbs long and slender ; fifth toe not longer than the first. (Fig. 10). Gular sac in the male indicated by a slight longitudinal fold. No gular appendage. No femoral or preanal pores. Of the two species known from India and Sri Lanka, one species occurs in the Western Ghats.

Otocryptis beddomii Boulenger

Description : As for the genus.

Colour : Dorsally light brownish with or without a series of brown transverse vertebral spots. Forehead and limbs mottle with dark.

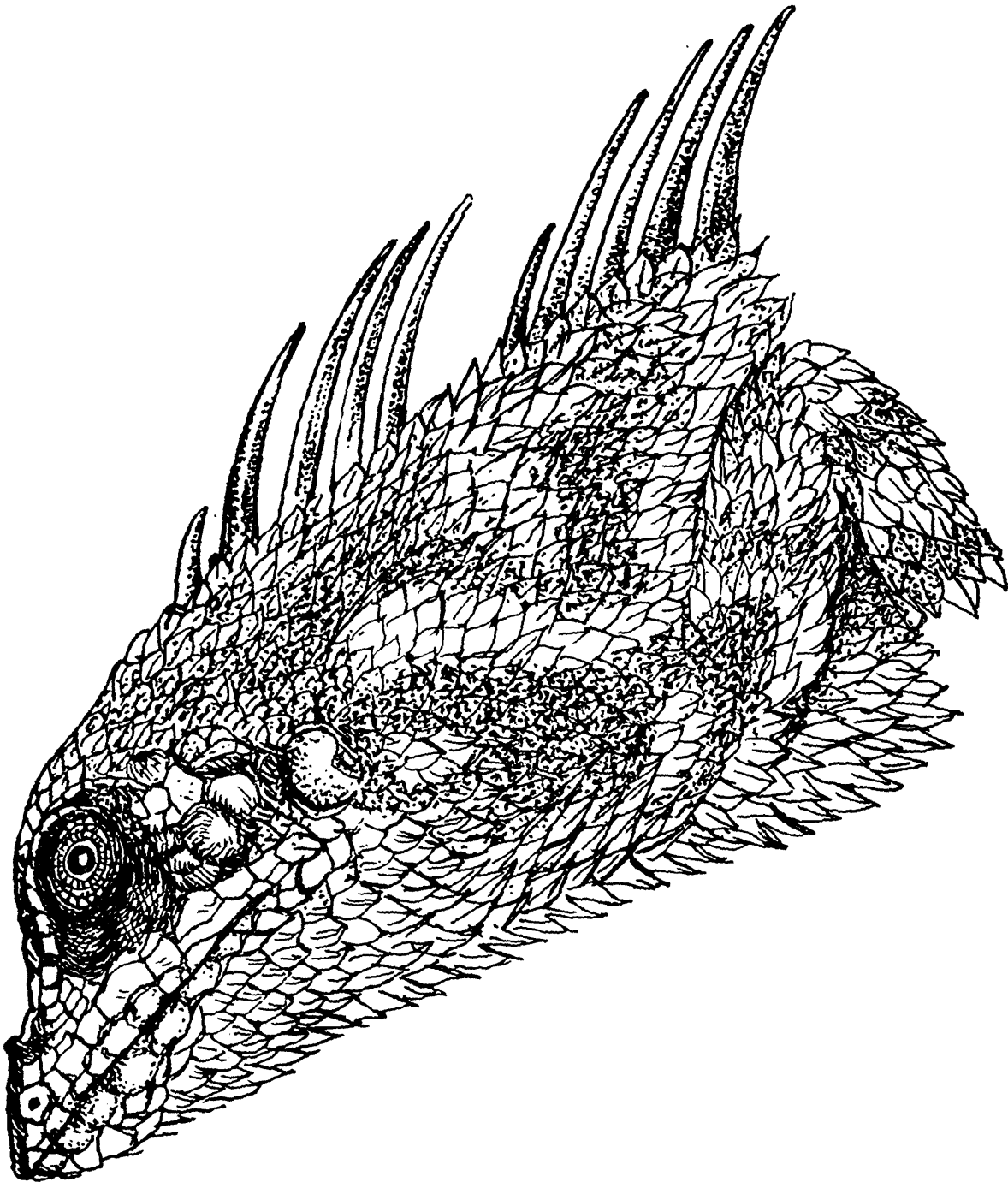


Fig.- 10

Head of *Salea horsfieldi*

Size : From snout to vent 45 mm ; tail 80 mm.

Distribution : Hitherto known from Cardamon Hills, Western Ghats. Recorded by the author from Kodaikanal, Palnis (1981).

Genus *Salea* Gray

Generic Diagnosis : A genus of hill lizards with a compressed body covered with large, unequal and strongly imbricate scales and an equally well compressed tail. Male with a nuchal and dorsai crest, a gular sac

and a tail crested above. Tympanum exposed. No femoral or preanal pores. Colouration conspicuous and brilliant.

Two species contained in the genus are recorded from the Western Ghats.

***Salea horsfieldi* Gray**

Description : Scales on the back strongly imbricate and keeled and uniform in size and those on the undersides are very strongly imbricate, keeled, and mucronate. From 7 to 9 upper and as many lower labials. No fold in front of the shoulder. Nuchal and dorsal crests in the male and the female with a nuchal crest only ; nuchal crest in the male with 5 or 6 lanceolate spines and that of the female with a double row of short, alternating, oblique spines.

Colour : Dorsally greenish with a series of reddish spots on the back which are often broken up by a dorsolateral stripe ; a blackish band running through the eye to the shoulder ; belly whitish sometimes mottled with brown.

Size : Females are larger than males. From snout to vent of a male 95 mm ; tail 250 mm and that of a female, 75 mm and 150 mm.

Field notes : When excited, the male turns verdant green in colour which merges with the yellowish hue of the head. The gular pouch changes into a brilliant yellow while the belly is pearly white.

Distribution : Found in the bushes, hedges and gardens even at higher elevations in the Nilgiris and Palnis of Western Ghats. The author had seen this lizard in good number both in the Nilgiris and Palnis. However, it appears to be more common in the Nilgiris.

***Saleas anamallayana* Beddome**

Description : Scales on the back very unequal on size and strongly imbricate ; 7 to 10 upper and as many lower labials. A strong curved fold in front of the shoulder.

Colour : Head light of dark brown with whitish spots ; upper lip with a whitish stripe which extends to the shoulder ; back with four prominent inverted V-shaped dark bars ; limbs and tail with dark cross bands or rings ; undersides whitish.

Size : From snout to vent of a male 119 mm, tail 200 mm ; of a female 85 mm, and 165 mm.

Distribution : Anaimalais, Palnis, and Hills of South Kerala, Western Ghats.

Genus *Calotes* Rafinesque

Generic Diagnosis : Lizards of this genus are typical animals of the forested regions and plains of India and they can be recognised by the following set of characters :

Body compressed ; dorsal scales regular, uniform ; dorsinuchal crest present ; gular sac usually present ; an oblique fold or pit in front of the shoulder present or absent. Tail long and slender, usually swollen and rounded at the base in the adult male. No femoral or preanal pores.

Six species are recorded from Western Ghats.

Calotes versicolor (Daudin)

Indian Garden Lizard

Description : Head and eye large. Tympanum about diameter of eye opening. Limbs well developed, with long, slender digits ending in powerful claws. Body scales keeled, imbricate, and arranged in 37 to 47 rows at midbody ; dorsinuchal crest composed of 41-49 lanceolate spines extending on to the tail.

Colour : Dorsally light sandy brown or olive depending on metachoric changes. Ventral surfaces white with dark streaks. Young and females with light transverse bars yellowish dorso-lateral stripes ; tail with light and dark annuli ; throat of fully grown males with a black bar.

During the breeding season the male assumes a brilliant crimson or scarlet colour which has given rise to the erroneous belief that this lizard sucks blood and hence called misappropriately as 'Bloodsucker'.

This breeding colouration may primarily be confined to the head and shoulders but sometimes extends over most of the body ; black patches may appear on the neck, cheeks or throat.

Size : From snout to vent 96-129 mm ; tail 300-350 mm.

Field notes : The common Garden Lizard is essentially arboreal in its habits but is also found in the open fields, hedges and gardens. Taking advantage of its prehensile toes and the long tail which supports its weight, this lizard hides behind stems and camouflages nicely. The adults

can climb up to and beyond 9 m or so in which position they take rest on tall trees. It is very common during the hot and rainy weather but is conspicuously absent in the winter, during which season it may be found in the sheltered places. This lizard's habit of repeatedly nodding its head indicates excitement of any nature, sexual or other. It can jump from branch to branch of a tree.

The Garden Lizard feeds upon spiders and various kinds of insects. The breeding season starts early in May and ends in September. The spindle-shaped eggs are usually laid in June, July, or August. The eggs numbering 4-12 are buried for more than a couple of inches in the soil.

Distribution : From Sumatra to South China and West through most of India and Sri Lanka.

Calotes nemicola Jerdon

Description : Dorsal scales unusually large, about three times as wide as ventrals ; midbody scale rows vary from 36 to 43. A cluster of 3 or 4 compressed spines above the tympanum.

Colour : Greenish above with darker markings ; a black streak from the eye to above the tympanum ; dirty whitish on the undersides ; throat with black streaks.

Size : From snout to vent 145 mm ; tail 330 mm.

Distribution : Nilgiris, Western Ghats.

Calotes grandisquamis Gunther

Description : Similar to **nemicola** but differing in the possession of longer head, the large sized dorsal and ventral scales and a well developed dorsinuchal crest.

Colour : Green above with broad black bars arranged transversely ; sometimes each black scale on the back with an orange spot ; belly pale greenish.

Size : From snout to vent 145 mm ; tail 330 mm.

Distribution : Anaimalais, Brahmagiri Hills, and Hills of South Kerala, Western Ghats.

Calotes calotes (Linn.)

Description : Oblique fold in front of the shoulder covered with small granular scales ; cheeks swollen ; gular sac not conspicuous ; a cluster of spines above tympanum ; dorsinuchal crest developed. Body scales smooth or carinate dorsally and strongly carinate ventrally ; 30-33 scales round midbody. Tail rounded.

Colour : Bright green above with four or five bluish white or green cross-bars ; head light yellowish to dark bluish green and throat red ; ventrally pale greenish. Young brown above with six dark cross bands between two whitish dorso-lateral stripes.

Size : From snout to vent 130 mm ; tail 500 mm.

Field notes : The female lays six to twelve eggs during September and presses the nest hole firmly with a layer of sand. The hatchlings emerge after a period of 2½-3 months.

Distribution : Shevaroy Hills, Eastern Ghats ; South Kerala, Western Ghats ; Nicobar Islands ; Sri Lanka.

Calotes rouxi Dumeril and Bibron**Forest Bloodsucker**

Description : Two small serrated spines on the back of the head ; from 50 to 60 scales round the midbody ; a long, oblique curved fold in front of the shoulder extending nearly across the throat.

Colour : Dorsally olive-brown with a dark band along the side of the head and ventral surfaces light brownish ; upper part of the head, nape, and gular pouch brick red (in life) which character has given rise to its common name.

Size : From snout to vent 77 mm ; tail 170 mm.

Distribution : Kalimpong, West Bengal ; Malegoon forest, Gujrat ; Molem, Valpoi, Ponda and Canacona, Goa ; Matheran, Pune, and Khandala ; Maharashtra ; Chickmagalur, Karwar, and Jog, Karnataka ; Tenmalais, Cardamon Hills, New Amarambalam Reserve Forest and Hills of South Kerala, Western Ghats.

Calotes elliotti Gunther

Description : Same as for *rouxi* ; 53 to 60 scales round the midbody.

Colour : Dorsum is olive-brown characterised by more or less distinct dark-brown angular cross-bars. A white spot below the eye is another essential characteristic of this species.

Size : From snout to vent 700 mm ; tail 170 mm.

Distribution : Anaimalais, Palnis, Sivagiri Hills, Tirunelveli Hills, New Amarambalam Reserve Forest, and Silent Valley, Western Ghats.

Genus *Psammophilus* Fitzinger

Rock-Lizards

Generic Diagnosis : A genus of strictly hill lizards characterised by a dorsoventrally depressed body without a dorsal crest, keeled scales on the body and a long and slender tail.

No gular sac ; no preanal or femoral pores.

This genus contains two species both of which are restricted to the hills of South India.

Psammophilus dorsalis (Gray)

South Indian Rock-Lizard

Description : Body feebly depressed and covered with small, feebly keeled scales ranging in count from 115 to 150. Head rather large, elongate, and depressed ; cheeks of adult male swollen. Tail feebly compressed.

Colour : Young and females olive-brown dorsally, spotted or marbled with dark brown and with a series of white elongate spots along each side of the back.

Adult males pale brownish above and yellowish below. A yellowish-brown stripe commencing near lips extending to and beyond the ear. A second stripe dark brownish or blackish in colour commencing from behind the eye and broadens as it covers the lower half of the flank.

Size : From snout to vent 135 mm ; tail 200 mm. Females are smaller than males.

Field notes : The common Rock-Lizard is found not only on bare rocks in the hilly areas but also inside the ruined structures situated at considerable elevations. Although the rock-lizard is a stout creature, it is very agile and escapes into a crack or crevice of the rock on which it rests at the slightest alarm or on approach. The author found them

emerging out of their hiding places generally at about 11:00 hrs in the morning and stationing themselves on every available rock for sunning themselves till evening. Occasionally they were found feeding on some insects and other insects. The young and females with their black hues and conspicuous white spots on the body make an impressive sight on the bare rocks heated by the midday sun.

Distribution : Southern India south of above lat. 16° Met with in the hills generally but at considerable altitudes.

***Psammophilus blanfordanus* (Stoliczka)**

Description : Size small. Dorsal scales slightly larger, Keeled and imbricate, arranged in 80-100 rows round the midbody ; flank with a few scattered and a little larger series of scales.

Colour : Young and females olive-brown marbled or with flecks of brown ; a series of large, lozenge-shaped dark brown spots on the back and tail. No traces of the lozenge-shaped markings on the body of male which is otherwise coloured as *dorsalis*.

Size : From snout to vent 100 mm ; tail 200 mm. Females are smaller than males.

Field notes : Found on rocks primarily but is reported as "entering the human dwellings occasionally" The male assumes a brilliant breeding colouration generally during April-May when its head and shoulder turn scarlet red in colour. The male courts the female which remains concealed in a nearby bush by displaying its breeding dress and by nodding its head repeatedly.

Distribution : Bihar and Orissa ; Madhya Pradesh ; Eastern Ghats ; South Kerala up to Trivandrum. Murthy and Venkateswarlu (1981) recorded this species from Araku valley, Eastern Ghats, Visakhapatnam District, Andhra.

Family SCINCIDAE

Genus *Mabuya* Fitzinger

Generic Diagnosis : The large cosmopolitan genus of *Mabuya* is recognised by the following characters ; dorsal and ventral scale similar in size and shape, imbricate, polished, smooth or keeled ; body, limbs, and tail are protected by osteoderms ; eyelids movable ; limbs well developed ; pentadactyle ; nostril in nasal shield ; supranasals separate. Tongue

moderately long, covered with imbricate scale-like papillae, feebly nicked anteriorly.

Four species are known from Western Ghats.

Mabuya macularia (Blyth)

Bronze Grass Skink

Description : From 28-30 scales round the body, the dorsals and laterals with 5 or 7 strong keels. Digits moderately long, with obtusely keeled lamellae, 12-17 beneath the fourth toe. Tail not twice the length of the head and body.

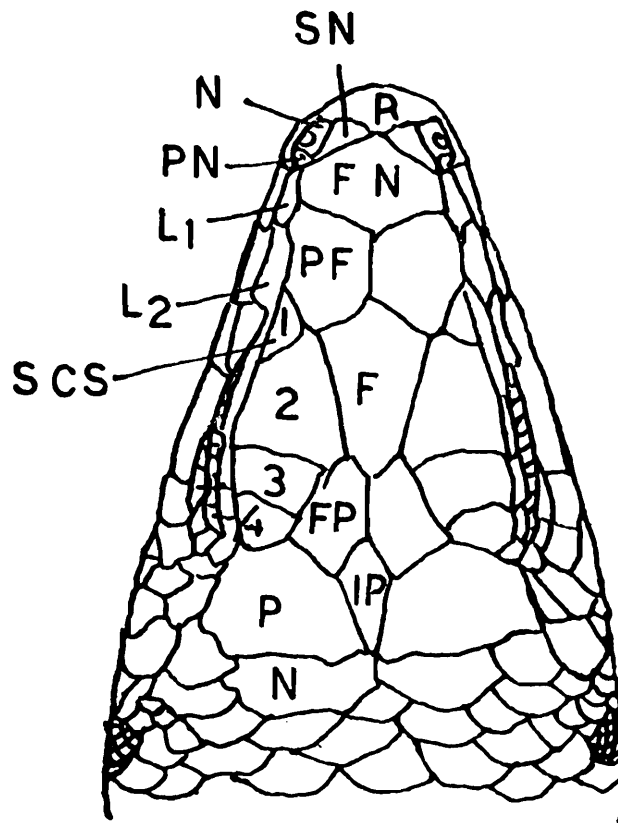


Fig. 11

Head shields of a skink

- F. Frontal ; FN. Fronto-nasal ;
 FP. Fronto-parietal ; IP. Interparietal ;
 L. Loreals ; LA. Upper labials ;
 M. Mental ; N. Nasal ; N. Nuchal ;
 P. Parietal ; PF. Prefrontal ;
 PN. Postnasal ; R. Rostral ;
 SC. Supraciliaries ; SN. Supranasal ;
 SO. SCS. Supraoculars

Colour : Dark bronze above, with or without small black spots longitudinally arranged. A light dorso-lateral stripe more or less distinct. Sides of neck and flank dark brown, usually with white spots. A light line starting from the upper lip extends backward or to the anterior part of the flank.

Some of the specimens taken by the author (1981) in the new Amarambalam Reserve Forest, Kerala had their lips coloured bright red indicating that they were breeding males. Smith (1935) distinguishes as many as five forms based on the colouration of this skink.

Size : From snout to vent 58-61 mm ; tail 65-75 mm.

Distribution : South India from lat. 12° N to 16° N and Sri Lanka.

Mabuya carinata (Schneider)

Common Skink

Description : Dorsal and lateral scales subequal, with 3 or 5 distinct keels, the three median keels are always strongly marked, the outer two are often absent in the young ; from 30-34 scales round the middle of the body. Digits moderately long, with smooth or obtusely keeled lamellae, from 14-18 under the fourth toe.

Colour : Dorsum olive or bronzy, sides darker. Body characterised by two prominent dorso-lateral stripes-one starting from above the eye and extending to the tail and a second starting from the upper lip and extending to the groin. Undersides white or yellow. The male exhibits a brilliant scarlet colouration on the flanks during the breeding season.

Size : From snout to vent 125 mm ; tail 165 mm.

Habits : Found in the plains and low hills. It is seen as it glides fast through low shrubs and fallen leaves. It frequents the grassland, the edges of rice-fields, and is commonly met within the parks, nurseries and gardens. It is seen throughout the year although it is nocturnal during the cold season. The female lays from 11-23 eggs in the loose soil under decaying grass.

Distribution : The whole of India except the extreme North-West. Sharma (1982) recorded it from Gujarat.

Mabuya beddomii (Jerdoh)

Description : From 30-32 scales round the body. Digits moderately long ; from 12-15 strongly keeled lamellae beneath the fourth toe.

Colour : Young brown above with 4 dark brown longitudinal stripes and whitish below. Adults have the same ground colouration but lack the prominent longitudinal stripes which if present are indicated as traces upon the neck and anterior region of the adult.

Size : From snout to vent 55 mm ; tail 116 mm,

Distribution : Tirunelveli and Salem, Tamil Nadu ; Berar and Mysore, Karnataka ; Malappuram, Sivagiri Hills, Silent valley and New Amaram-balam Reserve Forest, Western Ghats ; Sri Lanka.

Mabuya trivittata Hardwicke & Gray

Description : From 34 scales round the middle of the body. Dorsal and lateral scales subequal, with 5, sometimes in the adult 7, strong keels. Digits moderately long, with smooth lamellae, 13-14 beneath the fourth toe. Palms of hands and soles of feet with enlarged subconical tubercles intermixed with much smaller ones.

Colour : Greyish-brown, with 3 broad, black-edged, white (yellow in life) longitudinal stripes extending the whole length of the body and on the base of the tail. Lower parts white.

Size : From snout to vent 80 mm ; tail 80 mm.

Distribution : Pune and Nasik, Maharashtra ; Belgaum, Karnataka ; Madras, Tamil Nadu ; Rajmahal, Bihar.

Genus Dasia Gray

Generic Diagnosis : Skinks of this genus are rare and are recognised by well developed eyelids with the lower scaly, small ear-opening and well developed pentadactyle limbs.

One species is recorded from Western Ghats.

Dasia subcaerulea Boulenger

Description : In addition to the generic characters listed above : nostril in the nasal ; supranasals present ; tympanum deeply sunk. Subdigital lamellae are enlarged basally suggesting the arboreal habits of this skink.

Colour : Light greenish-yellow above with black and white spots and bluish below.

Size : From snout to vent 57 mm ; tail 60 mm.

Distribution : Bodinaicknur, Madurai District and High Wavy Mountains, 10 miles SE of Bodinaicknur, Tamil Nadu.

Known from two specimens only.

Genus *Sphenomorphus* Fitzinger

Generic Diagnosis : This genus is characterised by a scaly lower eyelid, absence of supranasals, a distinct earopening and the pentadactyle limbs.

One species is recorded from Western Ghats.

Sphenomorphus dussumieri (Dum. & Bibr.)

Description : In addition to the generic characters : rostral flat or concave ; from 38 to 42 scales round body.

Colouration : Young bronzy green above with a dorso-lateral streak edged on with a dark brown stripe on its inner side. Adults with a less distinct dorsal pattern. Throat and belly white and the tail yellowish-brown both in young and the adult.

As pointed out by Annandale (1909) the tails of two males and one female taken by the author (1981) from the New Amarambalam, Kerala were coloured red and brown respectively.

Size : From snout to vent 60 mm ; tail 64 mm.

Distribution : Hills of southwestern India and Sri Lanka.

Genus *Scincella* Mittleman

Generic Diagnosis : Skinks of this genus are small sized hill species recognised by the following characters ; no supranasal ; a transparent disc in the lower eyelid, 4 supraoculars ; six or seven supralabials ; one or two pairs of enlarged preanais. Limbs pentadactyle and of moderate length.

Four species and one subspecies are recorded from Western Ghats.

Scincella travancoricum (Beddome)

Travancore Ground Skink

Description : Frontoparietal single or partially divided ; ear-opening as large as or a little larger than the palpebral disc ; no projecting labules.

Body scales smooth ; 22 to 26 scales round the middle of the body. Limbs rather short ; digits long ; 18-24 lamellae beneath the fourth toe.

Colour : Dorsum bronzy-brown or greyish brown with a well defined black or brown stripe running alongside the head, neck, and anterior part of the flanks. Lower parts of neck and sides of the body flecked with dark brown ; belly dark grey.

Size : From snout to vent 53 mm ; tail 80 mm.

Distribution : Anaimalais, Palnis, and Hills of South Kerala, Western Ghats.

***Scincella palnicum* Boettger**

Palnis Ground Shink

Description : Fronts-parietal always entire. From 25-30 scales round the body.

Colour : Similar to that of *travancoricum* but the light dorso-lateral stripe is more evident and is greyish-white below.

Size : From snout to vent 55 mm ; tail 63 mm.

Distribution : Restricted to Palnis, Western Ghats.

***Scincella beddomei* Boulenger**

Description : Fronto-parietals completely divided. From 20-24 scales round the body. 17-18 lamellae under the fourth toe.

Colouration and size same as for *travancoricum*.

Distribution : Nilgiris and Hills of South Kerala, Western Ghats.

***Scincella laterimaculatum* (Boulenger)**

Description : Ear-opening without projecting lobules. Midbody scale rows 26-28. Digits long ; 20-25 smooth lamellae under the fourth toe.

Colour : Brown or bronze above and greyish below. A light edged blackish stripe followed by two fine black lines down the back. Tail of young blue in colour.

Size : From snout to vent 36 mm ; tail 55 mm.

Distribution : Tirunelveli District, Tamil Nadu ; Nilgiris ; South Kerala.

Scincella bilineatum (Gray)

Nilgiri Ground Skink

Description : Body longer. Ear-opening with projecting lebules. Midbody scale rows 22-26 ; 16-20 lamellae under the fourth toe.

Colour : Same as for **laterimaculatum** except that the flanks are without black spots. Tail of young and subadults violet in colour.

Size : From snout to vent 65 mm ; tail 95 mm.

Distribution : Nilgiris, Western Ghats.

Genus Riopa Gray

Generic Diagnosis : Lower eyelid scaly ; nostril in nasal ; supranasals present ; ear-opening distinct, tympanum sunk. Limbs short or vestigial. Three species are recorded from Western Ghats.

Riopa punctata (Gmelin)

Dotted Garden Skink

Description : Larger and robust in habitus ; ear-opening round ; round ; 72 scales along midline from nape to above vent ; tail round, thick at base.

Colour : Mid region of the body brassy white with four rows of black dots ; three rows of small black dots from axilla to groin and on to tail ; belly whitish.

Size : From snout to vent 68 mm ; tail 74 mm.

Distribution : India and Sri Lanka.

Riopa guentheri (Peters)

Description : Ear-opening a little longer than in **punctata** ; body more elongate ; 87-100 scales down the middle of the back.

Colour : Dorsum with a dark spot for each scale which in the young converge into longitudinal lines. Young with a light dorso-lateral streak.

Size : From snout to vent 110 mm ; tail 72 mm.

Distribution : Maharashtra and Karnataka. Daniel (1962) recorded this skink from the Dangs, Surat, Gujarat.

Riopa lineata Gray

Description : Body more elongate and small ; from 104-110 scales down the middle of the back. Limbs weaker, each one with four digits only.

Colour : Golden brown above with a series of black spots which usually coverage into longitudinal lines ; lighter beneath.

Size : From snout to vent 53 mm ; tail 48 mm.

Distribution : Between Pune, Maharashtra and North Kanada, Karnataka.

Riopa goaensis Sharma

Description : Frontal much longer than the fronto parietals and interparietal ; fifth supralabial longest ; 30 rows of scales round the mid body. Digits longer ; fourth toe longer than the third ; 13 lamellae under the fourth toe. Tail thick at the base ; shorter than the body.

Colour : Dorsum dark-brown to blackish ; a black dorsolateral streak from snout to tail ; lower surfaces light bronze ; back and sides profusely spotted with black.

Size : From snout to vent 53 mm ; tail 49 mm.

Distribution : Molem, Goa.

Genus Ristella Gray

Generic Diagnosis : Lower eyelid scaly. Nostril pierced in the centre of a large nasal ; no supranasals. Ear opening distinct. Limbs small but well developed, the hand with 4, the foot with 5 digits ; claws completely retractile into a large compressed sheath.

All the four species known are recorded from the Western Ghats.

Ristella rurki Gray

Description : In addition to the generic characters listed above, 26-28 scales round the middle of the body ; dorsal scales more or less distinctly hexagonal in shape. Limbs short.

Colour : General ground colour is reddish-brown above and whitish below.

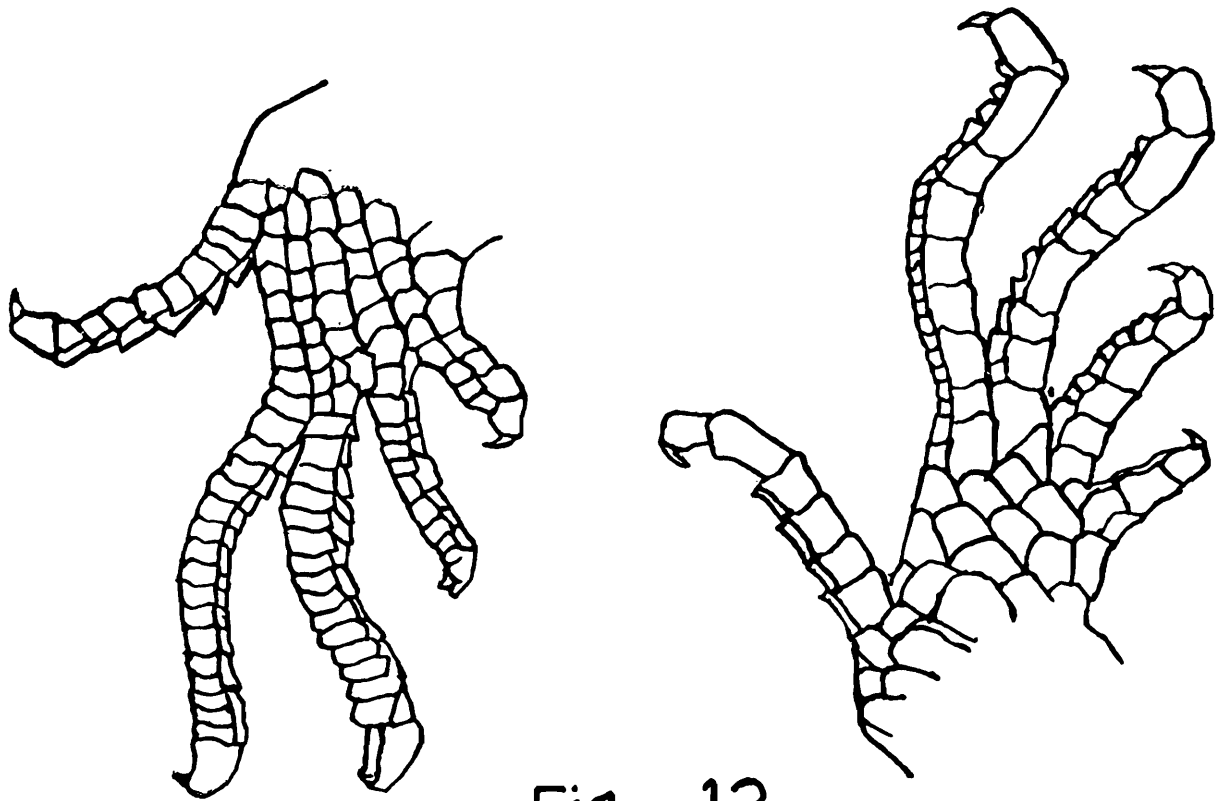


Fig. - 12

Foot of *Ristella*

A. Upper, and B. Lower surface

A colour spot or streak on each dorsal scale which coalesce to form six longitudinal lines. Throat and tail mottled with brown.

Size : From snout to vent 47 mm ; tail 80 mm.

Distribution : Anaimalais, Palnis and Hills of South Kerla, Western Ghats.

***Ristella travancorica* (Beddome)**

Description : Ear-opening not or but slightly larger than the nostril ; dorsal scales sharply keeled ; 24 scales round the middle of the body.

Colour : Reddish-brown above and whitish below. Flanks with a dark stripe.

Size : From snout to vent 40 ; tail 60 mm.

Distribution : Throughout the Western Ghats.

***Ristella guentheri* Boulenger**

Description : Ear-opening distinctly longer than the nostril. Mid-body scale rows 22-24 ; dorsals bicarinate. Limbs widely separated.

Colour : Reddish-brown above and whitish on the lower surfaces. Scales with spots which sometimes form longitudinal lines. Flanks with dark lines and small yellow spots. Young with three light dark-edged stripes down the back and two more on the sides.

Size : From snout to vent 40 ; tail 60 mm.

Distribution : Madurai District, Tamil Nadu ; Anaimalais, Tenmalais, and Hills of South Kerala, Western Ghats.

***Ristella beddomii* Boulenger**

Description : Ear-opening larger. Mid-body scales in 26-28 rows.

Colour : As in *guentheri* but the dark lines are more conspicuous than the yellow spots on the body.

Size : Snout to vent 35 mm.

Distribution : Sharvathi River, Karnataka ; Tenmalais, Parambikulam, (Anaimalais), New Amarambalam Reserve Forest, Western Ghats.

Genus *Eumeces* Weigmann

Generic Diagnosis : This genus closely resembles the genus *Mabuia* but differs from it mainly in skeletal features. Skinks of this genus are characterised by the following characters : Nasal divided ; supranasals well developed. Ear-opening rather large and oval in shape. Scales on the body quite smooth ; a pair of preanal plates. Tail with transverse plate-like scales below.

One species is reported from Western Ghats.

***Eumeces poonaensis* Sharma**

Description : In addition to the generic characters listed above, third toe larger than fourth ; dorsal scales in longitudinal series over 80 ; tail scales rough ; tail shorter than body.

Colour : Dorsum and limbs dark brown to deep bronze, with a lateral series of round white spots arranged regularly and extending from head to half of the tail ; flanks with deep brown stripes ; venter yellowish white with numerous brown spots on the underside of tail.

Size : From snout to vent 118 mm ; tail 85 mm.

Distribution : Katrajghat, near Pune, Maharashtra.

Known from a single female specimen.

Family LACERTIDAE

Genus **Cabrita** Gray

Generic Diagnosis : Lizards of this genus are characterised by symmetrical shields on head, separated eyelids, well developed limbs and a sub-cylindrical, elongate, and fragile tail. Femoral pores present.

One species, **C. leschenaulti** is recorded from Western Ghats.

Cabrita leschenaulti (Milne-Edwards)

Description : Body scales keeled and imbricate above and keeled and smooth below. Scales round the mid body 42-59. Toes with keeled lamellae ventrally. From 12 to 16 femoral pores on each side.

Colour : Brownish or golden above and greenish white below. Back with two blackish stripes running from the supraciliary edge to the tail. Tail and hind feet reddish (in life).

Size : From snout to vent 50 mm ; tail 10 mm.

Genus **Ophisops** Menetries

Generic Diagnosis : Lacertids of this genus are recognised by normal head shields, united eyelids, and pointed, limbricate, and strongly keeled body scales. Tail cylindrical. Femoral pores present.

One species is recorded from Western Ghats.

Ophisops beddomei (Jerdon)

Description : In addition to the generic characters listed above : mid-body scales rows 26-32. Femoral pores 8-13 on each side.

Colour : Olive-brown above and yellowish white below. A lateral streak running down the back to the tail and the space in between spotted with black.

Size : From snout to vent 34 mm ; tail 60 mm.

Distribution : South Kannada Plains, Karnataka ; Satara District, Maharashtra ; Goa ; Brahmagiri Hills, Kerala.

Ophisops jerdoni Blyth

Description : Scale-rows at mid body 28-35 ; a large preanal plate. Femoral pores 7-12 on each side.

Colour : Brown above with two whitish dorso-lateral stripes on each side of the back, the interspace marked black spots. Neck lemon yellow and greenish yellow on the flanks. Undersides yellowish-white.

Field notes : Found under stones or in rock crevices. It is a secretive lacertid and is diurnal in habits. It is an extremely agile creature and it is not easy to catch one.

Distribution : From N. W. F. P. in Pakistan through most of Northern and Central India to Southern India. Underwood (1948) recorded it around Pune, Maharashtra and a recent record came from Gujarat (Sharma, 1982).

Family VARANIDAE

Genus *Varanus* Merrem

Monitors

Generic Diagnosis : Monitors are large sized lizards usually exceeding 1 m in length and differ from other lizards by a combination of the following characters : head covered with small scales ; body scales granular ; limbs strong ; tongue smooth, very long and slender, bifid ; ear-opening conspicuous ; tail long, not fragile ; preanal pores present.

One species is reported from Western Ghats.

Varanus bengalensis (Daudin)

Indian Monitor

Description : In addition to the generic characters listed above : head long and narrow, with snout pointed ; neck long and mobile ; tail laterally compressed ; midbody scale rows 132-176 ; no femoral pores. Digits elongate.

Colour : Young and adult differ in colouration. Young dark olive above with numerous light spots or ocelli alternating with dark bars and whitish on the undersides with narrow dark transverse bars sometimes broken up into spots. Adult brownish or olive above with blackish dots on the back ; lower parts yellowish mottled with black.

Size : From snout to vent 775 mm ; tail 1,110 mm.

Field notes : Found both in the remote forests as well as on the outskirts of the villages. They lie motionless upon the ground or in the hollow of a tree with which their colouration harmonises well and thus escape easy observation and capture. When concerned they can bite hard. They run at great pace and evade the captor by dashing into the hollow of a tree or by climbing up the trunk of a tree with apparent ease. They take to water readily and can swim well. The author had seen these lizards in the burrows or in the tree-hollows of the forests and found that dislodging them from their hiding places is quite difficult.

Distribution : Throughout India, Burma, Nepal, Pakistan, Eastern Iran and Southeastern Uzbekistan, U. S. S. R.

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PLATES



1



1A



2

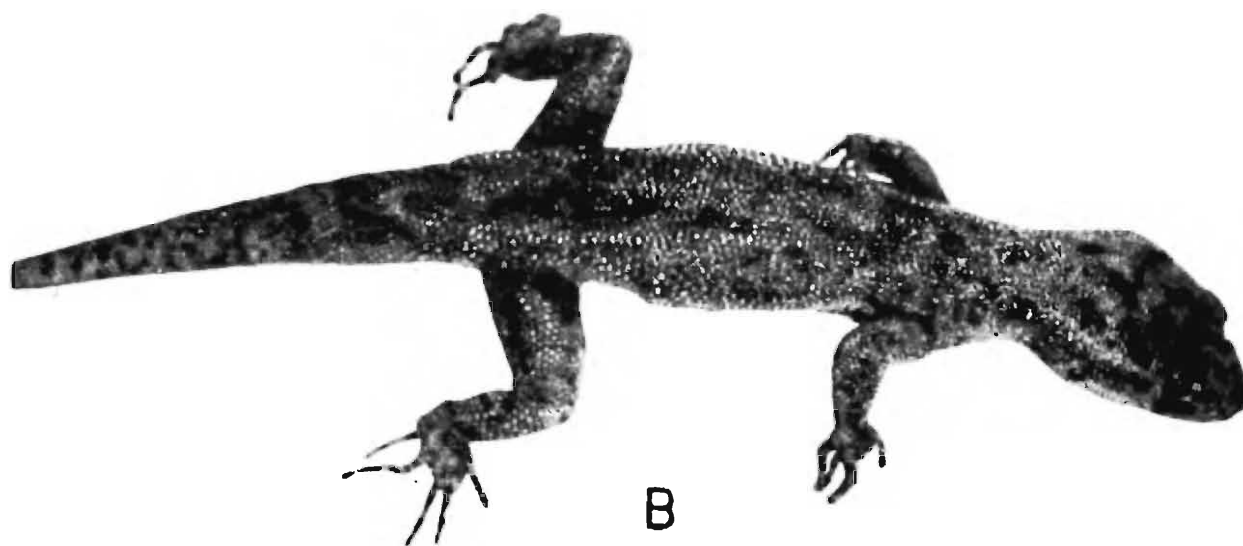


3

Fig. 1. *Cyrtodactylus collegalensis*
A. Dorsal, and B. Ventral view
Fig. 2. *Cnemaspis indica*
Fig. 3. *C. kandianus*



A



B

Fig. 1. *Cnemaspis sisparensis*

Fig. 2. *C. wynadensis*



Dravidogecko anamallensis (Photo courtesy : British Museum (N.H.))



Hemiphyllodactylus typus auranticus (Photo courtesy : British Museum (N.H.))



A



B

Fig. 1. *Hemidactylus maculatus*

Fig. 2. *H. leschenaulti*



Sitona ponticeriana



Otocryptis beddomii (Photo courtesy : British Museum (N.H.))

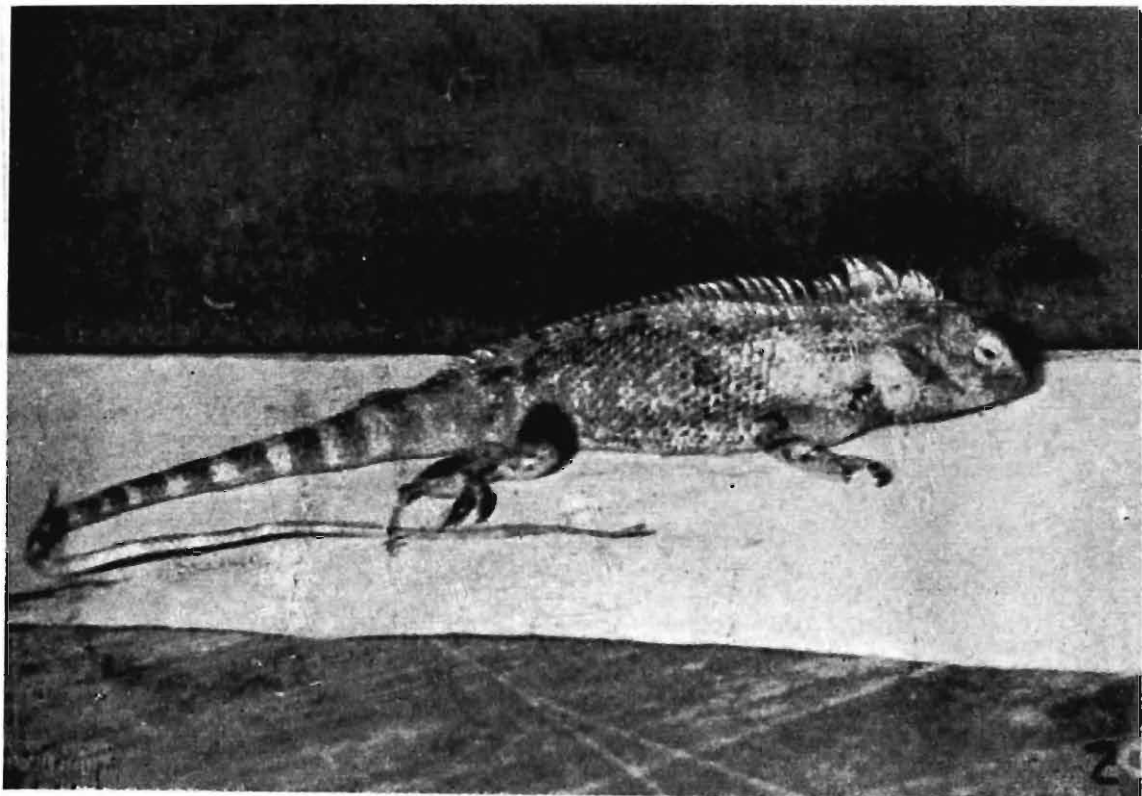
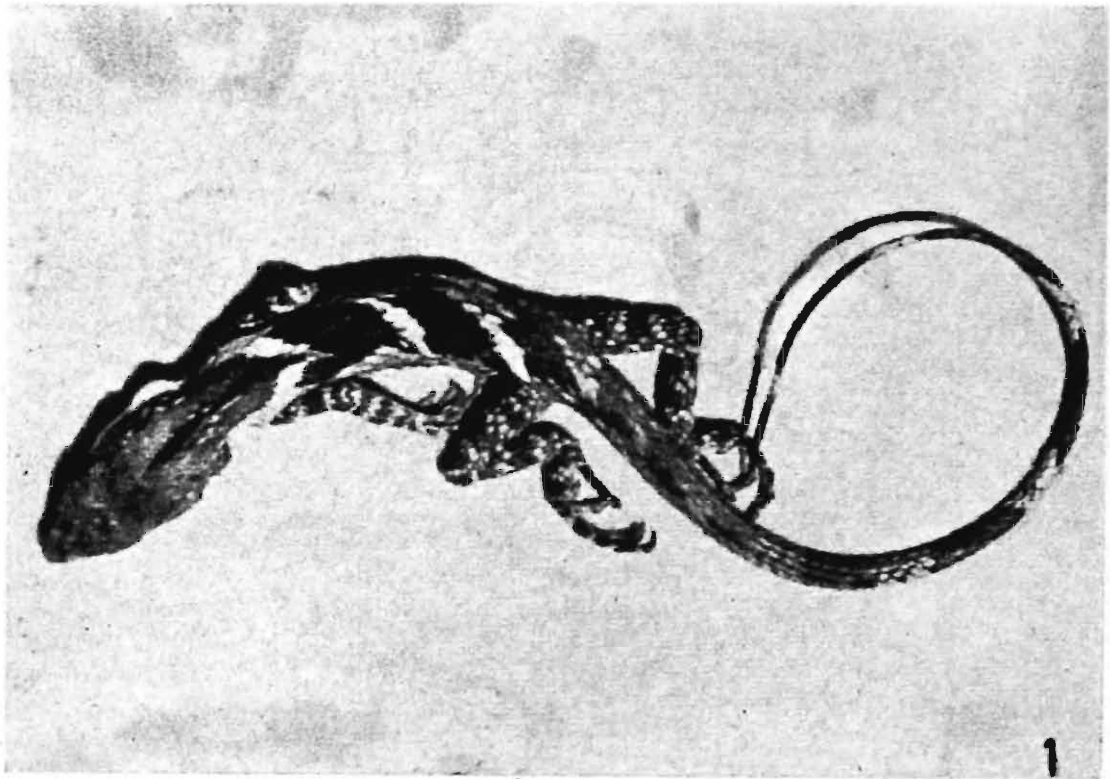
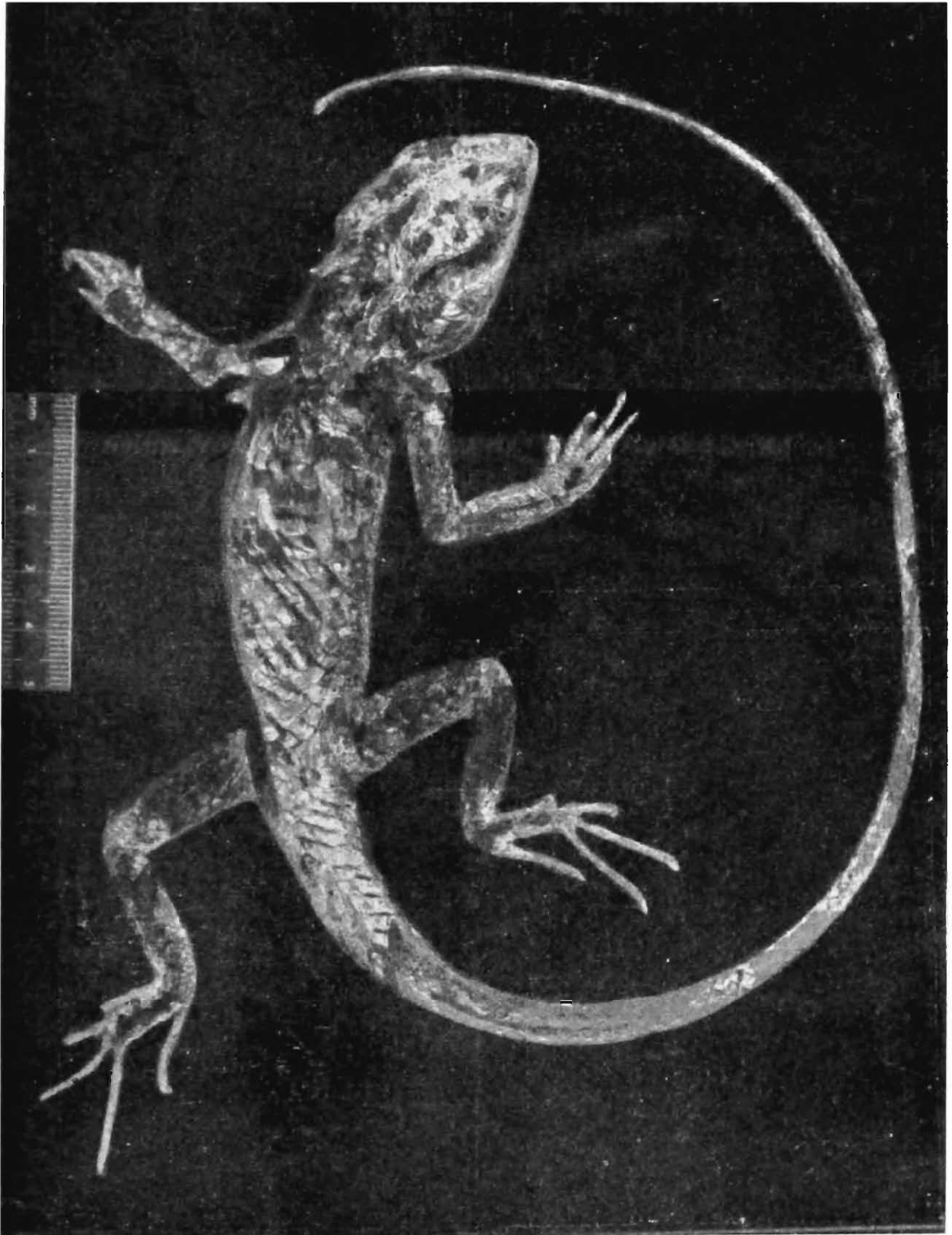


Fig. 1. *Salea anamallayana*

Fig. 2. *Calotes nimericola* (Photo courtesy : Dr. B.S.N. Reddy)



Calotes grandisquamis (Photo courtesy : British Museum (N.H.))

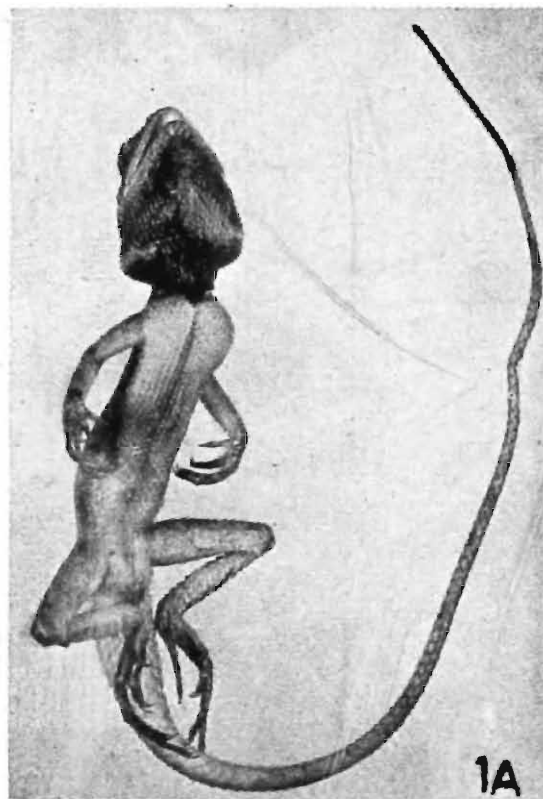
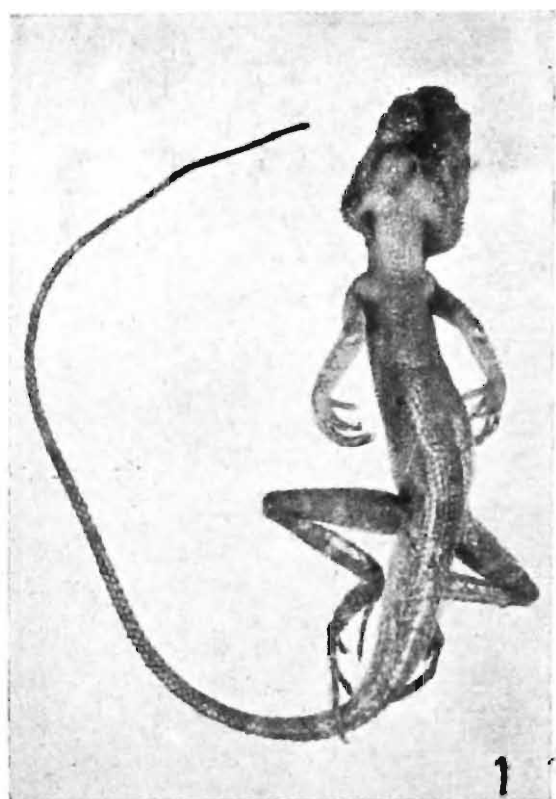
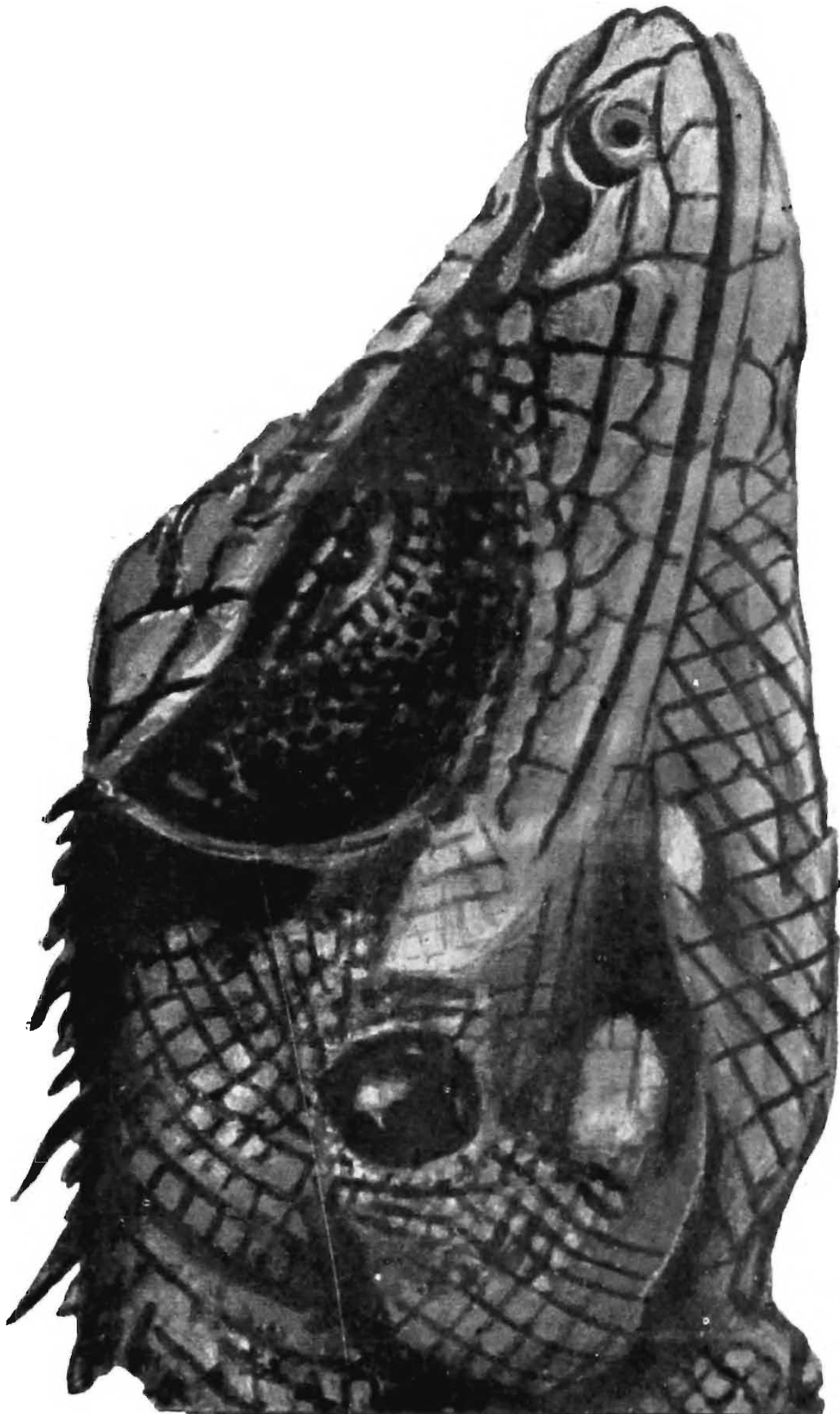


Fig. 1 *Calotes rouxi* Dorsal view

Fig. 1A. *C. rouxi* Ventral view

Fig. 2. *Calotes elliotti*

Fig. 3. *C. versicolor*



Close-up of head of *Calotes ellioti*

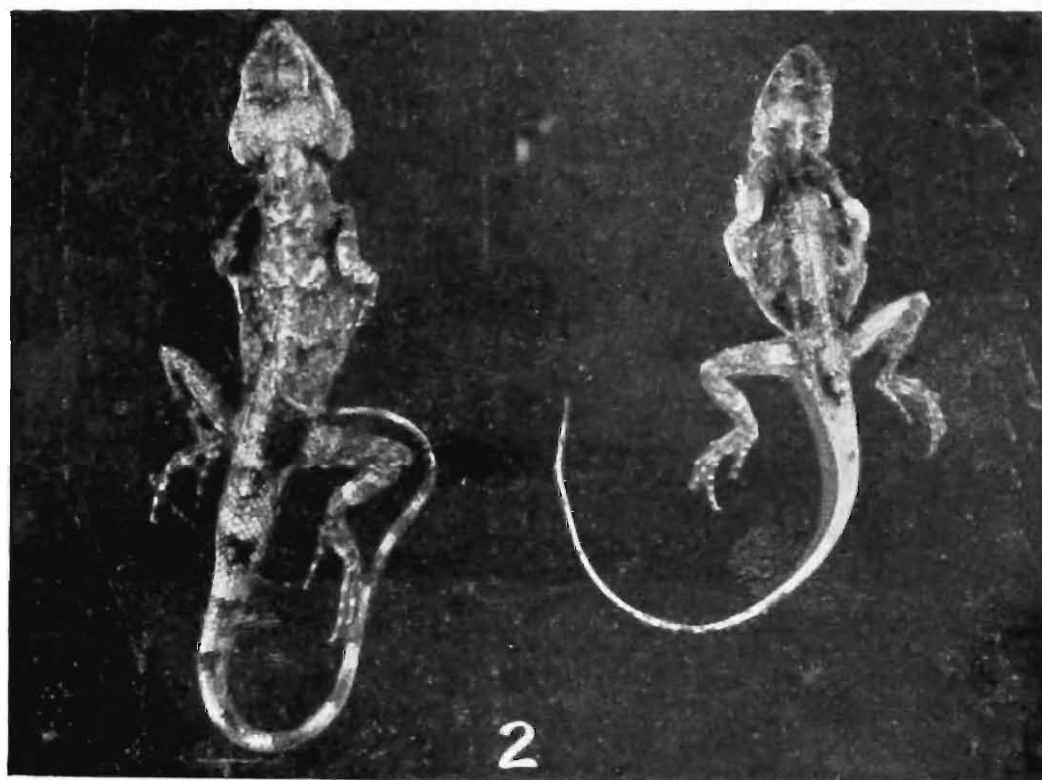


Fig. 1. *Psammophilus dorsalis*

Fig. 2. *P. blanfordanus*

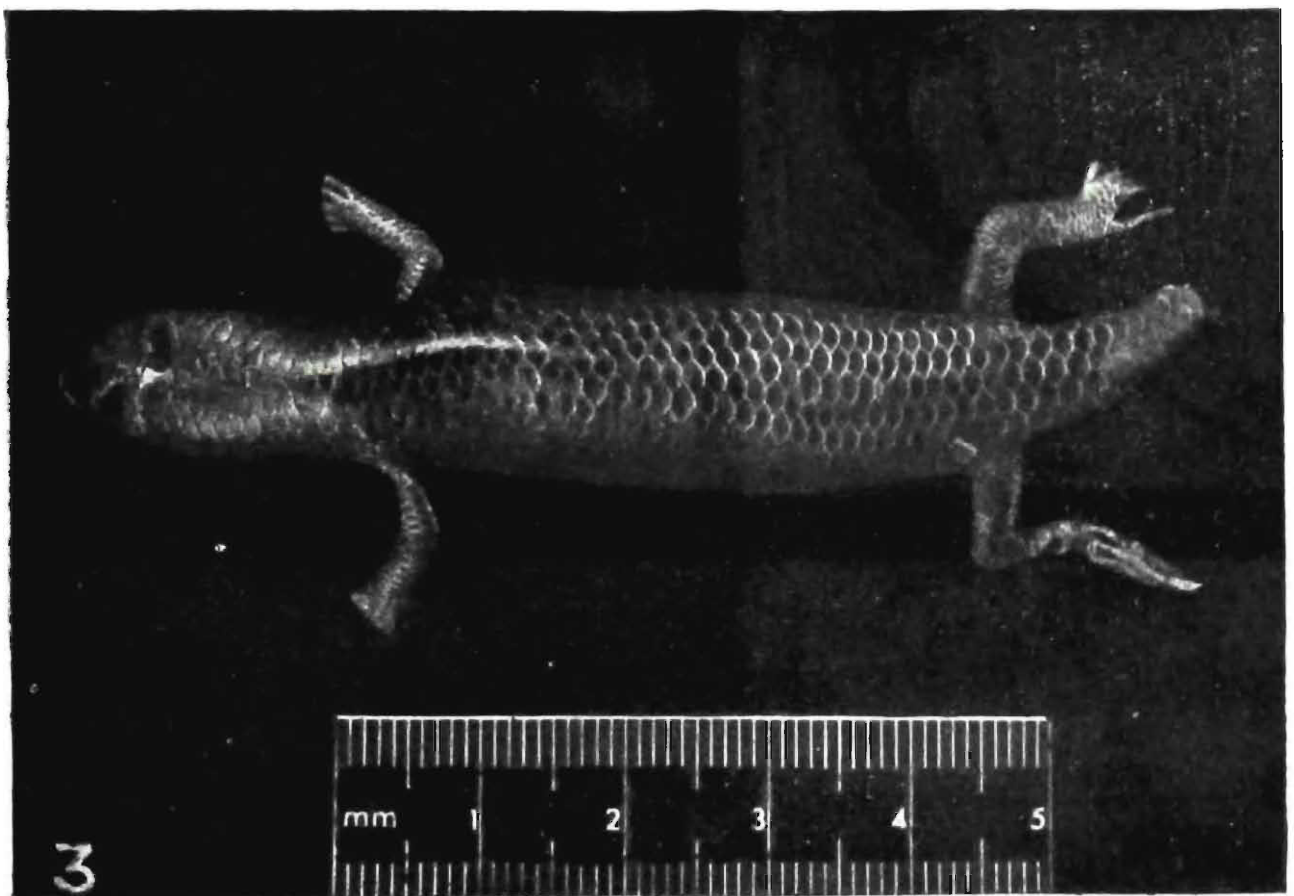
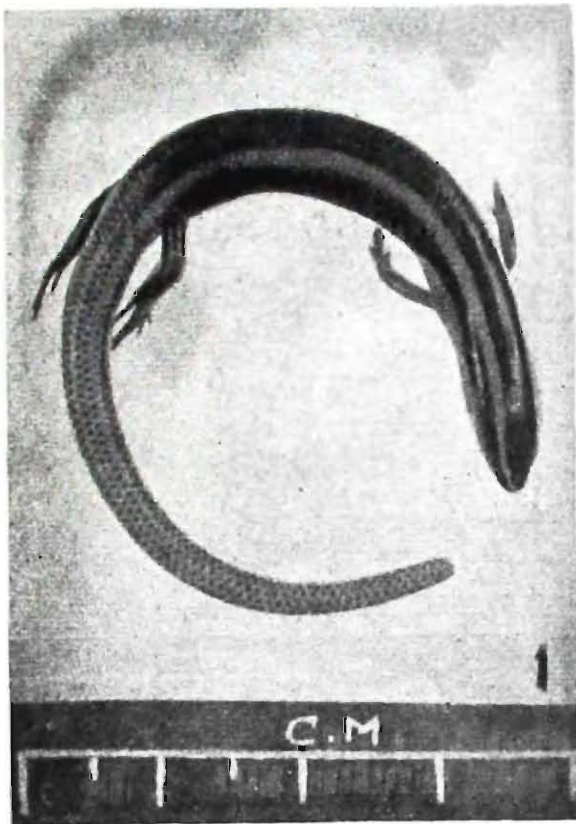


Fig. 1. *Riopa punctata*

Fig. 2. *Sphenomorphus dussumieri*

Fig. 3. *Dasia subcaerulea* (Photo courtesy : British Museum (N.H.))



1



2

Fig. 1. *Cibrila leschenaulti*

Fig. 2. *Ophisops jerdoni*