

**OCCASIONAL PAPER NO. 115**

# **Records of the Zoological Survey of India**

**A field book of the lizards of India**

**T. S. N. MURTHY**

**Zoological Survey of India**

**RECORDS  
OF THE  
ZOOLOGICAL SURVEY OF INDIA**

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**A FIELD BOOK OF  
THE LIZARDS OF INDIA**

*By*

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OF THE  
**Zoological Survey of India**

OCCASIONAL PAPER

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**TO MY PARENTS**

**Pen and camera are weapons against oblivion,  
they can create an awareness for that  
which may be soon lost for ever.**

**— George B. Sehall**

## PREFACE

During recent years there has been a dramatic increase of interest in Indian reptiles with the result that the snakes, crocodiles, and turtles have been described in sufficient detail. But not much attention has been paid to the lizards despite their abundance and diversity. Probably the reason why Indians have shown little interest thus far in this fascinating group of reptiles is that they could not find a good book on the subject to guide them. This field book is offered to fill the obvious gap as it provides a ready source of information regarding the identification and natural history of these animals in simple but scientifically accurate language that reads effortlessly. It is hoped that by using the summaries of diagnostic features of the family, the genus, the illustrations, and the descriptive notes concerning the general build, colour, size, and range of various species, the layman as well as the professional will be able to recognise the majority of our native lizards without getting into the drudgery of scientific terminology.

A special feature of this book is that it covers all the 155 species found in India and the large number of illustrations, including one of the two venomous lizards of North America. The glossary, the general remarks, the vernacular and common names might benefit the general reader while the sections on the classification and bibliography will be helpful for those who wish to extend their detailed knowledge of the lizards of India. The measurements given for each species refer to the largest specimen and the total length includes the head-and-body or snout to vent length and tail length unless otherwise stated. The localities cited indicate the range of species in the Republic of India alone although a majority of the species dealt with may also occur in neighbouring countries. The terms 'Whole of India,'

**'Throughout India' do not necessarily mean that the particular lizard is abundant but only that it is fairly widespread.**

**If this slender volume contributes in a small way to further the interest of Indians in lizards which are becoming rare due to unprecedented deforestation, it will have fulfilled its mission.**

**As with all ventures of this magnitude errors and omission are likely to be present. I crave the indulgence of the reader and hope these minor lapses will not detract the utility of the work. I welcome comments from users of this work.**

**T. S. N. MURTHY**

## **ACKNOWLEDGEMENTS**

It is largely my work and association with the Zoological Survey of India (ZSI) for over two decades that has prompted me to write this book. I will, therefore, ever remain grateful to this renowned research organisation and the Director, ZSI, for encouragement.

In preparation of this book I have, of course, become indebted to the following individuals and institutions for their gracious permission to reproduce photographs of Indian lizards as detailed below.

**Courtesy Madras Snake Park Trust :**

**Pls. 1-B, 1-D, 2-3, 5-8, 10-13A & 15-16.**

**Courtesy Dr. Roger Conant, Adjunct Professor, Department of Biology, University of New Mexico, USA : Pls. 4-B and 17-18.**

**( Photo Credit : Mrs. Isabelle H. Conant ).**

**Courtesy Dr. S. A. Minton, Indiana School of Medicine, Indiana, USA : Pls. 1-A, 1-C, 13-B and 14,**

## INTRODUCTION

The following remarks on structure and natural history concern lizards in general, with particular reference to Indian species.

Lizards, classified as suborder Sauria (Lacertilia) of the large order Squamata, are a fascinating group in the class Reptilia that dominated the earth nearly 200 million years ago. Herpetologists recognise more than 3,300 species belonging to eighteen families, eight of which, namely Gekkonidae, Agamidae, Chamaeleonidae, Scincidae, Lacertidae, Dibamidae, Anguidae, and Varanidae containing 155 species, occur in India. Of these, geckos, agamids and skinks are numerous in number and widely distributed while the lacertids are represented by 8 species, the monitors by four and chameleons, worm lizards and glass lizards are known by one species each.

Lizards are a highly successful group of reptiles occurring in diverse habitats and they are often the most commonest vertebrates in an area. The reason for their widespread occurrence in all parts of the world except the polar regions is probably due to the fact that they are effective predators on arthropods which are an easily and abundantly available food reserve. In size, Indian lizards vary from a 25 mm long skink to the 2.5 metre long water monitor, which is the second largest lizard in the world.

A majority of the lizards are characterised by an elongated body with two pairs of 5-toed limbs, a very long tail, a short, flat tongue, and an external ear opening. Certain limbless lizards and those with rudiments of limbs superficially resemble snakes. They can be, however, distinguished by their movable eyelids and ear openings of which snakes have none. Also the scales on the underside of a lizard are arranged in several rows in contrast to a snake, which has a single row.

Some lizards have coarse, overlapping scales, while some are coated with smooth scales. In some of the degenerate forms like the worm lizards the scales are replaced by rings of skin encircling the body. The chameleons and most geckos have tuberculated or granulated bodies. In the vast majority of lizards the skin is periodically shed and comes off in flakes, while those species which have acquired an elongated body shed their skin in one piece as in snakes.

The tongue of a lizard is extremely variable in structure and shape. It is mainly employed as a sensory organ and also as a device for lapping up prey. The paired vomeronasal organs of Jacobson are highly developed in lizards and they serve to "smell" odorous particles picked up from the air or on the surface.

When seized by the tail many lizards can shed it leaving the tail still wriggling, while they themselves escape. A new tail soon grows at the point of fracture although it seldom attains the shape and length of the original. So when attempting to catch a lizard, it is best to grasp it by the body.

Like fishes, amphibians, and other reptiles, the lizards are 'cold blooded' or poikilothermic which means that they lack an effective internal mechanism for regulating their body temperature in response to the changes of their surroundings. Lizards love to bask in the sun, retiring to holes in rocks during rainy or cloudy weather. On a warm day they become very active, foraging, basking, chasing rivals or courting. They seem to show a preference for green—the common colour in nature. They are very agile and their movements are too quick to follow and it is more difficult to catch one.

Most lizards are insectivorous and a good number of them are vegetarians at least as adults. Monitors are carnivorous. Generally speaking, it may be said that lizards are opportunistic feeders, attempting to catch the potential prey accessible to them. They locate their prey by its movement and grasp it with lightning-like speed.

Lizards are among nature's great artists of colour changes which are mostly influenced by light, temperature, and mood of the animal. The young are more brilliantly coloured than the adults but the

brilliant colours and ornamentation assumed by the breeding males are more spectacular. The male uses its vivid pattern to display against other male while courting a female or holding its territory. Generally speaking the female is more robust, the male being more graceful, with a tail tapering to a fine tip. Some lizards like skinks, geckos, lacertids, and varanids are characterised by the presence of rows of small, brownish or reddish spots called 'femoral organs' on their thighs. Their secretion, a sort of cellular debris, increases in males particularly during copulation. The femoral pores may be restricted to the males, as in the geckos, or both sexes may have them, as in the lacertids.

A majority of the lizards deposit oval, soft shelled eggs which hatch in eight or ten weeks, while some skinks, lacertids, and anguids bring forth their young alive. Although the entire clan of lizards are despised by some under the mistaken impression that they all are poisonous, only two desert living lizards of North America—the Gila Monster and the Beaded Lizard are really venomous. On the other hand, lizards play a beneficial role in nature because of their efficiency in destroying harmful insect pests. The presence of geckos in the human dwellings is to our advantage as these little lizards are as effective as birds in destroying harmful insects. Monitor lizards, in particular, serve not only as useful scavengers but also as destroyers of coconut pests like crabs, beetles, and snails. Further, the diet of these lizards includes destructive rodents as squirrels and rats. The eggs of monitors are a great delicacy and the animals themselves provide a full meal. The Spiny-tailed lizard is captured in large numbers by the desert people for its flesh. The head and feet are not eaten, but the spiny tail is considered a great delicacy, and the meat is said to be excellent and sweet, like chicken. Preparations made from the fat of this and other desert dwelling lizards are said to be effective as aphrodisiacs. Oil extracted from the visceral fat of monitors is used for treatment of failing eyesight in the aged. The leather of monitors has been much sought after because of its reputedly highly wearing quality, infinite variety of pattern and texture. Moreover, they can be finished off in any colour.

A majority of Indian lizards have become rare and some monitors, especially the water monitor and the yellow monitor, are vanishing

slowly in much of their former range because of the increasing demand for their skin as well as the flesh. The Government of India has taken a serious note of the alarming rate of depletion of populations of our lizards and afforded strict protection to the most exploited kinds like the monitors and the spiny-tailed lizards.

Lizards, despite their abundance and diversity, evoke little popular response. It is time we realised that lizards play a beneficial role in nature and are worthy of study and conservation as are other reptiles, birds, and mammals.

## GECKOS, Family Gekkonidae

Geckos are stoutly built, short-tailed little lizards and are easily the most familiar of Indian lizards because of strong predilection of some, e.g. House Geckos, for habitation with man and his surroundings. The body is covered with small tubercles above and imbricating scales below. The skin is very thin and some forms appear almost translucent in strong light. The head is broad and flat and is devoid of any enlarged scales. The limbs are well developed and are pentadactyle with dilated digits ending in sharp claws. Excepting the Cat-eyed Geckos, the eye is immovable and covered with a watchglass-like transparent skin through which the geckos see. The pupil of the eye is vertical in the day-active species and is round in the nocturnal forms. The tongue is moderately long, thick, fleshy and protrusible. The tail is a diminutive, stumpy appendage presenting the greatest diversity of form. It is usually cylindrical, tapering to a point, but in the desert species, it is swollen and probably serves as a food reservoir.

Unlike other lizards, geckos have a true voice which is usually a soft clucking sound. Repetition of this sound, which resembles the word "gecko", has probably been the source of their common name. The Tokay, which is the largest of the geckos of the world, attaining a length of 350 mm has a stentorian voice and keeping in with its size is aggressive in nature. All geckos are principally insectivorous, but the larger forms take anything that they can overpower. Nearly all of our geckos lay normally two round, white hard-shelled eggs and glue them to walls or in the crevices. A vast majority of geckos are nocturnal but all are not house-dwellers, as some of them frequent rocks and trees far away from human settlements. The usual ground colour is brown, grey or yellow and at best a few species are capable of changing the colour although the colour changes are restricted to the adoption of darker or lighter hues. Geckos are pugnacious and the larger ones among them pursue smaller geckos of their own or other species. Male geckos are usually larger, heavier and more quarrelsome than females and tend to hold their territories very pos-

sessively. They are further distinguished by the presence of femora organs—a row of small, brownish or reddish pores present on either side of the thigh and near the vent.

Smaller individuals make a faint squeaking noise when handled. Barring the Tokay mentioned already, all of our geckos are absolutely harmless. No gecko is poisonous.

No other family of Indian lizards, except the Scincidae ranges so widely as the Gekkonidae, for more than 50 species occur in India.

### **Stenodactylus orientalis**

#### **Sind Sand Gecko**

This is a small, sand-living gecko and is virtually endemic to Sind, Pakistan. The toes are straight, clawed and furnished with a lateral fringe of pointed scales by which the lizard is enabled to run quickly over fine sand. It is brownish or grey above, with indistinct darker transverse bars and whitish below. A dark line runs from the eye to the sides of the body. These geckos inhabit the sand dunes and are expert diggers in the loose sand. They seem to be nocturnal in their habits and their chief food is termites and soft-bodied insects. Adults are about 49mm in head and body length and the tail is as long. This gecko is met with in the desert adjoining Western Rajasthan.

### **Genus Cyrtodactylus**

#### **Rock Geckos**

The geckos of this genus are recognised by the angularly bent and clawed toes, dorso-ventrally compressed bodies and a vertical pupil. The scalation is composed of minute scales, shields, and trihedral tubercles. Males with or without preanal or femoral pores. All are small species and some are handsomely and conspicuously coloured.

### **Cyrtodactylus scaber**

#### **Keeled Rock Gecko**

This gecko is sandy coloured above, with irregularly arranged brown spots and whitish below. A curved mark is present on the

nape and the tail is banded with dark. The head and body length is 50mm and the tail is 67mm long. This is a common desert gecko, recorded from Salt Range, Punjab.

**Cyrtodactylus montium-salsorum**  
Salt Range Rock Gecko

This is a rare species known from a few specimens and collected only from the Salt Range, Punjab. It is similar to the preceding species but differs from it in the presence of an uninterrupted row of preanal and femoral pores in the male. It measures 47mm in head and body and the tail is longer, about 60mm long.

**Cyrtodactylus kachensis**  
Kutch Rock Gecko

This species is common throughout the Kutch region of Gujarat. It is closely allied to *scaber* except for the dark spots on the back which are irregularly arranged. The head and body is 40mm in length and the tail is just that long. This gecko is said to prefer crevices or rocks to houses.

**Cyrtodactylus fasciolatus**  
Banded Rock Gecko

This gecko is greyish above, with 6 or 7 dark brown crossbands, the hinder margins of which are somewhat W-shaped and whitish below. A dark curved mark across the nape extends on to the eyes. The tail is banded above alternately with light and dark. The head and body is 82mm in length and the tail is 110mm long.

**Cyrtodactylus khasiensis**  
Khasi Rock Gecko

This bent-toed gecko is light brown or grey-brown above and whitish below. There is a faintly curved mark across the nape which extends to the eyes. The back is spotted with dark and the tail is banded with brown. The head and body length is 85mm and the tail is 100mm long. It is chiefly reported from the Khasi Hills, Meghalaya and is also recorded from Darjeeling, West Bengal.

**Cyrtodactylus rubidus**

## Andaman Rock Gecko

The most striking character of this species is the presence of a preanal groove which is markedly distinct in males but less so in females. This groove, usually containing 6 pores, is not found in any other Indian gecko. It is dorsally brownish, with a distinct reddish tinge in life. The dark markings on the back tend to unite to form irregular bands. The head and body length is 75mm and the tail is 90mm long. This gecko is both terrestrial and arboreal in habits. It is said to hold the tail up stiffly while running. It is very common in the wooded tracts of the Andaman Islands.

**Cyrtodactylus nebulosus**

## Clouded Rock Gecko

This is a rare hill species found at elevations from 700-1100m in the Golconda and Gorge Hills of Andhra Pradesh. It is dull brown above, clouded with paired black-edged blotches which extend on the tail. The top of the head, lips and the area surrounding the throat are marbled with brown. The head and body length is 52mm and the tail is 42mm long.

**Cyrtodactylus collegalensis**

## Collegal Rock Gecko

This gecko is another hill species and is closely allied to the preceding form from which it differs in the absence of dorsal tubercles and colouration. It is a small lizard with a stout body and a short but stocky tail. The head and body length is 53mm and the tail is 41mm long. It is mainly a forest species, occurring under stones or dead wood at low elevations in the Western Ghats, South India. The colouration is conspicuous and pretty on the basis of which two colour forms namely, *speciosus* and *collegalensis* are recognised. The dorsum of *speciosus* has three dark brown crossbands and that of the *collegalensis* is marked by large, oval, black-edged paired spots. The head in both the races is mottled with brown.

**Cyrtodactylus toliczkai**

## Kashmir Rock Gecko

This species is grey above, with a series of eight irregular, broken

transverse black bars and pale yellow on the lower parts. The lips are bordered with black and white and the dorsal flanks and the dorsal surfaces of the head and tail and limbs are dotted with black. The head and body is 55mm in length and the tail is shorter, about 50mm long. This species is found in Kashmir and is common in the Ladakh region.

**Cyrtodactylus madarensis**  
Luminous Rock Gecko

This is a rare and interesting gecko, newly described from the Madar foot-hills near Ajmer, Rajasthan. It closely resembles the Kashmir Rack Gecko, differing from it in colouration. It is brownish-black above, with narrow, white transverse bands on the back and the tail and whitish below. The nape bears a whitish curved mark. As the common name suggests, this gecko has been found shedding bright light at night through the bands and spots of the body. One possible reason for the unique phenomenon is that the gecko which is usually found in the rocky terrain might be frequently feeding upon the luminescent insects like fireflies that makes the lizard to 'glow' under the cover of darkness. This gecko is rather a slow creature which raises its body from the ground while moving. There are no femoral or preanal pores. The head and body is 50mm in length and the tail is nearly 36mm long.

**Cyrtodactylus lawderanus**  
Himalayan Rock Gecko

This gecko is found throughout the Western Himalayas. It is closely allied to *stoliczkai* in size and external characters but differs in having reduced number of dorsal tubercles, a rather cylindrical tail and in the presence of 4 to 5 preanal pores in the male. Although the colouration also is the same as that of *stoliczkai*, the wavy crossbars on the dorsum are not distinct and more broken up in *lawderanus*. The Himalayan Rock gecko is mainly reported from Simla District and Kulu Valley, Himachal Pradesh, Almora and Garhwal, Uttar Pradesh, and Ambala, Punjab,

**Cyrtodactylus dekkanensis**  
Deccan Rock Gecko

This is a conspicuously coloured gecko normally found among

rocks or under stones in the forest. It is reddish-brown above, with white, brown-edged cross-bars on the back and tail and whitish below. The males are without femoral or preanal pores but they have a group of enlarged preanal and femoral scales. The overall length is 115mm of which the tail is about 55mm. This species is mostly confined to the northern range of Western Ghats and is so far reported from Mathern, Koyana Valley, Vihar Lake near Bombay, and Panchegani, all situated in Maharashtra.

**Cyrtodactylus albofasciatus**  
White Barred Rock Gecko

This gecko is closely allied to *dekkanensis* from which it mainly differs in the composition and shape of scales on the back and belly. The white crossbars on the dorsum are described as brilliant yellow in life. The male has no femoral or preanal pores. This species seems to be rare as it is restricted to the North and South Kannada Districts of Karnataka. Majority of the specimens known have been taken from Castle Rock in North Kannada.

**Cyrtodactylus jeyporensis**  
Jeypore Rock Gecko

This gecko is light-greyish above and brownish-white below. The dorsal pattern consists of large, paired, reddish-brown black-edged spots down the middle of the back and other smaller spots on the flanks and upon the tail. The head above is dotted with brown and there is a curved mark on the nape. The head and body length is 53 mm and the tail is nearly 40 mm long. This rare gecko is known from one specimen collected from Patinghe Hill in Jaypore District, Orissa,

**Genus Cnemaspis**  
Dwarf Geckos

These are small-sized ground geckos found in the forests of South India. They are characterised by a more or less depressed body covered with granules or tubercles, a short and cylindrical tail and a round pupil. They generally hide by day under stones, logs, or forest litter and emerge at dusk in search of food. Males may or may not possess preanal or femoral pores. Ten species are known.

**Cnemaspis indicus**  
Nilgiri Dwarf Gecko

This dwarf gecko is greenish-brown with a row of orange-yellowish spots down the back and a line of similarly coloured spots on the sides. A light vertebral line is sometimes present. The throat is dark brown and the remainder of the lower parts are brownish-white. Male with 4-5 femoral pores on each side. The head and body length is about 40 mm and the tail is slightly longer being 42 mm long. This is the commonest forest gecko of Nilgiris, South India, but is also found in Coorg, Karnataka.

**Cnemaspis wynadensis**  
Wynad Dwarf Gecko

This gecko seems to prefer moist jungle where it may be found under stones. It is brown above, marbled with lighter and darker spots and pale brownish below. In the young there is a broad, vertical stripe on the back. The throat is darker and flecked with white. The tail is variegated with lighter and darker markings. The male has 4-6 femoral pores on each side of the thigh. The head and body is 40 mm in length and the tail is 44 mm long. It is usually found in Wynad, Kerala and is very common in the Silent Valley.

**Cnemaspis sisparensis**  
Sispar Dwarf Gecko

This forest gecko is closely allied to the preceding species from which it differs mainly in the digits which are slightly longer, in the increased number of femoral pores of the male, in colouration, and in size. It is brown above, with a series of dark brown oblong spots which tend to unite and form three longitudinal lines down the back. The throat is marbled with brown and white and the tail is banded light and dark. There are 7-8 femoral pores on each side of the thigh in the male. This species is the largest of the forest geckos, reaching a length of 110 mm of which the tail makes up for nearly 50 mm. It is rare and is restricted to the Sispara Ghat, Nilgiris.

**Cnemaspis ornata**  
Ornate Dwarf Gecko

This gecko is brown above and pale brownish below. The dorsal

pattern consists of a row of white black-edged ocelli down the centre of the back and a light blackedged band on the shoulders. Male with 6-9 femoral pores. The head and body length is 50 mm and the tail is 65 mm long. It is usually found under rocks in the hills of Tirunelveli, Anaimalais, Malabar, and South Kerala.

**Cnemaspis beddomei**  
Beddome's Dwarf Gecko

This species is brown above, spotted with pale and darker markings and pale brownish below. There are dark bars on the lower lip and the throat. The tail is barred with light and dark. The head and body length is 50 mm and the tail is 52 mm long. It is found in the hills of Tirunelveli, Wynad, and South Kerala at elevations between 1600 m-1700 m.

**Cnemaspis mysoriensis**  
Mysore Dwarf Gecko

This gecko is brown above, with a midstripe and prominent dark-brown spots. The throat is mottled with brown and the remainder of the underside is brownish-white. The digits have conspicuous dark bars. Males with 2-3 preanal and 3-4 femoral pores on each side. Despite the specific name, this gecko is found in the hills of South India upto 1000 m as far north as lat. 13°.

**Cnemaspis kandianus**  
Kandy Dwarf Gecko

This forest gecko and the species following it differ from other species of the genus in having small, widely separated, spine-like whitish tubercles on the flanks. Kandy Forest Gecko gets its common name from Kandy, Sri Lanka where it is common, frequenting houses as well as the forest. It is brown above, with a mid-stripe and transversely arranged lighter and darker variegations. The throat is mottled with dark and the rest of the underside is brownish. Male with 2-4 preanal and 3-6 femoral pores on each side. The head and body length is 40 mm and the tail is 44 mm long. This species occurs in the hills of Southern India as far north as lat. 12° and also the Andaman Islands where it was probably introduced by man's agency.

**Cnemaspis goaensis**  
Goa Dwarf Gecko

This gecko is brown above, with eight W-shaped dark brown marks on the back. The head, the limbs, and the flanks are variegated with lighter and darker markings and the area behind the nape and the throat are suffused with black. Male with 2-3 preanal and 2-4 femoral pores on each side. The head and body length is 30 mm and the tail is 40 mm long. This species is recently described from the material obtained near Canacona, Goa.

**Cnemaspis jerdoni**  
Jerdon's Dwarf Gecko

This species is dorsally greyish-brown, spotted with dark and dirty white on the underside. There are two or three jet black spots on the nape and the tail above has conspicuous dark bars. The head and body length is 40 mm long. This is a rare gecko and is found in the Nilgiris Anaimalais, Palnis, and Sivagiri Hills of Western Ghats.

**Cnemaspis littoralis**  
Arboreal Dwarf Gecko

The digits of this species are strongly dilated which are indicative of the arboreal habits of this curious gecko. It is greyish in colour with a distinct black spot and usually a series of white, dark-edged spots down the back. The belly is dirty white, Male with 14-18 femoral pores on each side. The head and body is 30 mm in length and the tail is 35 mm long. This diurnal gecko occurs in the dry forests of Nilambur, Kerala and Nellakota, Nilgiris.

**Calodactylodes aureus**  
Golden Gecko

This gecko is a rare hill species, endemic to India. The few known specimens were found among the rocks in the dark ravines of Tirupat- tur Hills in North Arcot District, Tamil Nadu and Tirumala Hills in Andhra. The fingers and toes are dilated and devoid of any cutaneous appendage. The dorsal scales are uniformly granular and those of the belly are squarish, small, and juxtaposed. The eye is large, with a vertical pupil. Males without

preanal or femoral pores. As its common name suggests, this gecko is brilliant golden above (in life), mottled with brown and whitish below. The head and body is 85 mm in length and the tail is 100 mm long. As might be expected with all such rare species very little is known of the life history of this gecko.

*Dravidogecko anamallensis* is another hill gecko endemic to South India. The head and body are covered with minute granular scales, largest upon the snout and the belly with large, smooth, and imbricate scales. The toes are long, with traces of web at the base. A distinguishing feature of the male is the presence of about 40-44 preanofemoral pores in a continuous series. This gecko is greyish-brown above, with scattered light dots or dark spots and is brownish-white below. The head and body length is 45 mm and the tail is 50 mm long. This species is widely distributed in the forests of Western Ghats, South India.

#### Hemidactyles, Genus *Hemidactylus*

This is a wide-spread genus which holds as many as 15 species. The hemidactyles can be easily distinguished from other gecko by the flat, granulated or tuberculated bodies and the expanded digits with transverse rows of plate-like scales called lamellae on their undersides which enable the little reptiles to crawl with speed and dexterity on smooth surfaces. The pupil of the eye is vertical. Males have preanal and (or) femoral pores. The tail breaks off when seized and a new tail grows quickly although it may not resemble the original in shape and symmetry. Despite the common name, majority of house geckos are out-door animals, frequently found under rocks and on trees. House geckos are remarkably vocal. Most of them are nocturnal, but some are active even during the day. They can be easily tamed and trained to take food from the hand. They feed chiefly upon insects and all house geckos are oviparous and take no care of the eggs, usually, one or two in a clutch, which are, however, laid in sheltered spots. The largest individual grows to 270 mm.

#### *Hemidactylus maculatus* Giant Spotted Gecko

This gecko is generally found among rocks and sometimes on trees situated far away from human settlements. It is brown above

with large, dark spots which sometimes unite to form undulating crossbars on the back and dirty whitish below. The crossbars on the back are more pronounced in the young. The tail in both the young and adult is alternately banded with light and dark brown. This gecko is probably the largest of the Indian hemidactyles with a record length of 270 mm of which the tail makes up for 140 mm. This species has been recorded from Bombay and Pune, Maharashtra, Malappuram District, Kerala, and Tirunelveli and Salem, Tamil Nadu.

### **Hemidactylus triedrus**

#### **Blotched Gecko**

This is a large-sized gecko with a heavily tuberculated body. It can be easily recognised by the colour pattern which is not only distinctive but also pretty. It is buff above with three white-edged olive-green crossbars and pinkish white below. The young are light brown with white-edged dark brown crossbars. The tail is marked with regular black and light rings. This gecko is generally a surface-living species often found in association with the termite hills, the source of its other common name, 'Termite Hill Gecko'. As one would expect the gecko seems to benefit from the association as the termites seem to be its favourite food. This species is reported to be fairly common in Maharashtra and it has been recorded from the Sivagiris and Nilgiris, Western Ghats, Ajmer, Rajasthan, Indore, Madhya Pradesh, Mysore, Karnataka, Madurai and Madras, Tamil Nadu, and Trivandrum Kerala.

*Hemidactylus subtriedrus* is closely allied to the preceding species but is found only among the rocks, seldom entering houses. This species is restricted to the Nellore and West Godavary Districts of Andhra Pradesh.

### **Hemidactylus brooki**

#### **Spotted Indian House Gecko**

This is the commonest house gecko of India. The body is covered with granular scales and conical tubercles arranged in definite rows. It is usually light grey to dark brown above with a series of black spots more or less regularly arranged somewhat like broken transverse bands on the back. There is a dark streak on either side of the head.

The head and body is 70 mm in length and the tail is nearly 75 mm long. Although it is characteristically a domestic gecko over much of its range, this gecko is often found far away from man-made structures and is met with in a variety of habitats as on trees and under stones in both the plains and hills. 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. Its call which is a loud "tik, tik, tik" commences soon after the darkness sets in and is continued till dawn. Probably there is some justification in considering this species as the noisiest of all the house geckos. The common house gecko frequents the kitchens where its presence has proved beneficial in the control of undesirable insects. This is one of the geckos which has been introduced into every nook and corner of the globe through human agency.

### **Hemidactylus prashadi**

#### Prashad's hemidactyle

It is marked dorsally with narrow, whitish dark-edged cross-bars or series of spots and greyish-white below. The white bars which are distinct in the young disappear in the adult, which then is of a uniform greyish-brown above. The male has 17--20 preano-femoral pores, separated by three scales. The largest specimen attains a total length of 180 mm of which the tail makes up for 1950 mm. This gecko has been collected in the neighbourhood of Jog, North Kannada, Karnataka several decades ago.

### **Hemidactylus porbandarensis**

#### Porbander Saline Gecko

As its common name suggests, this gecko seems to prefer the marshy coastal zone for its habitat. This species has been recently described from a specimen found under the boulders in the salty area of the port city, Porbander, Gujarat. It is light grey above, with dark brown irregularly arranged spots on the back, the limbs, and the tail. The lower parts are yellowish-white. The head bears a dark stripe on each side. Male with 6 preanal pores. The head and body is 40 mm in length and the tail is about 30 mm long.

Koyna hemidactyle, *Hemidactylus albofasciatus* is a recently described species from Koyna Valley, Maharashtra. It is found under stones and is closely allied to *prashadi*.

Slender hemidactyle, *Hemidactylus gtacilis* is a small-sized, slender gecko and is usually found on the rocky ground, far away from human dwellings. It is grey above with dark brown rectangular spots arranged in two longitudinal rows separated by a thin mid streak and whitish below. Male with six preanal pores. This gecko has so far been recorded from Gujarat, Madhya Pradesh, Maharashtra, and Andhra Pradesh.

Reticulate hemidactyle, *Hemidactylus reticulatus* is another small-sized gecko that is found far away from houses. It is brown above, with a distinct pattern of dark lines arranged in a network on the back. The throat is mottled with brown and the belly is whitish. Male with 11 preanal pores. The head and body and the tail are 40 mm each in length. This gecko seems to be a hill species and is reported from Madurai and Shevaroy, Tamil Nadu, Palnis, Western Ghats, Palkonda Hills and Nallamalas, Andhra, and Karnataka.

### **Hemidactylus frenatus** Southern House Gecko

This is the commonest house-gecko of South India. It is dark brownish dorsally with distinct darker markings often arranged as longitudinal stripes on the back and whitish below. The head is marked with dark and light lines. The flanks are spotted with dark. The tail is sometimes coral red during life. The pattern is distinct in the young and fades in the adults. Male with a continuous row of 23 or more preano-femoral pores. This gecko is often found in the bark of coconut trees. Some individuals were noticed in the axils of palm fronds or beneath debris, in the outskirts. The call of this gecko is very loud. The head and body is 60 mm in length and the tail is 65 mm long. Besides South India, this species occurs in Bengal, Maharashtra and the Andaman and Nicobar Islands. its wide-spread occurrence elsewhere is due to the human agency.

### **Hemidactylus leschenaulti** Bark Gecko

This is a larger species than the house-geckos *brooki* and *franatus* and has taken to a life on the trees, preferring particularly the Banyan and tamarind trees with the greyish-brown bark of which the colour of the lizard harmonises so well that it is rendered invisible. It is

grey above, with conspicuous dark brown, wavy crossbars or rhomboidal spots on the back and is whitish below. A dark streak commencing from behind the eye extends to the flanks. Male with 10-17 femoral pores on each side. The head and body length is 84 mm and the tail is as long. This gecko spends most of the day lying concealed under the bark of huge trees situated several meters above the ground. At night it runs about on tree trunks but seldom comes down. Although it is mainly arboreal in its habits, the bark gecko enters the houses in Cities like Calcutta, Bhubaneshwar, and Madras. This species is common in most of India and is particularly abundant both in the plains and hills of southern peninsula. It is also recorded from the Western India but seems to be scarce in the Eastern India (except Calcutta) and Gangetic plains.

### **Hemidactylus flaviviridis**

#### **Northern Yellow-bellied House Gecko**

This is the commonest house-gecko of northern India. It is usually greyish above, with indistinct transverse bands, and yellowish below. The colouration is, however, variable as the lizard is brown to olive, with conspicuous dark leschenaulti on the back by day and pale grey without the bands at night. Like its congener, *crossbands*, to which it is closely allied, this house gecko is often found on trees where its colouration harmonises well with the bark. The species reaches a total length of 180 mm, half of which is the tail. Male with 5-7 femoral pores on each side. The species occurs from northern India to West Bengal and south to Bombay and its neighbourhood, where it is fairly common. Barring a few occasional records, it is rare south of lat. 20°

### **Hemidactylus giganteus**

#### **Giant Tree Gecko**

This is one of the larger species of the Indian hemidactyles. Adults are about the same as *maculatus* in head and body length, but with slightly shorter tails. Unlike *maculatus*, this gecko is found on the trees and is a rare species. It is greyish above, with large W-shaped marks or undulating crossbars and whitish below. Male with 18-22 femoral pores. It occurs in a few pockets in the Godavary valley and Palkonda hills, Andhra, Lingasagar, Karnataka, and Wynad, Kerala.

*Hemidactylus bowringi* is light brown above and whitish below. The back is marked with dark spots which sometimes unite to form longitudinal streaks. The head bears a dark streak on each side. The tail has dark chevron—shaded spots. The head and body length is 50 mm and the tail is 55 mm long. This gecko, which is a common house—gecko in Rangoon and Pegu, is found in India in the Godavary Valley and the Eastern Himalayas.

*Hemidactylus garnoti*, which occurs in the Eastern Himalayas and eastern India, is unique among the Indian geckos because it is unisexual and capable of reproduction without fertilisation by the male. It is greyish-brown above, speckled indistinctly with dark and whitish below. The head bears a dark streak on the sides. The head and body length is 65 mm and the tail is 70 mm long.

### **Cosymbotus platyurus**

#### **Frilled Gecko**

This gecko is easily recognised by the membranous expansions on the sides of the body, the strongly dilated and webbed digits. The tail is very strongly depressed and fringed with a sharply denticulated margin. It is grey or greyish-brown above and yellow or dirty white below. The pattern consists of a mid-dorsal series of large, dark paired spots which continue on to the tail to form dark crossbars. A dark streak commences from the eye and runs along the flanks. The head and body is 60 mm in length and the tail is 65 mm long. This species occurs in northeast India.

### **Gehyra mutilata**

#### **Stump-toed Gecko**

This gecko, which is primarily found in Southeast Asia and the Oceanic Islands, is occasionally recorded in India from the Andaman Islands and the Port cities like Cochin, Kerala. The digits are dilated at the base and the terminal joint of each of the outer digits is narrow, clawed and bent at an angle within the expanded portion. The inner digit on each foot is well developed, but it lacks the narrow, claw-like terminal joint which is either concealed or absent. The dorsal scales are small and granular. The pupil is vertical. Male with an uninterrupted row of 25-41 femoral and preanal pores which meet in the

mid-line. This gecko is usually pale grayish above with dark spots and dirty white below. There is sometimes a dark streak behind the eye. This gecko is credited with the remarkable power of changing its colour from light to dark to match the background it is resting on. The head and body is 60 mm in length and the tail is about the same.

The genus *Hemiphyllodactylus* contains a single species and its race is found in the hilly and forested regions of Nicobar Islands and South India. These are small, short-legged geckos which are distinguished by a vestigial inner digit. The terminal joints of the outer four digits on each foot are sharp and clawed. Males have preanal and femoral pores.

*Hemiphyllodactylus typus typus* is brown above, spotted or marbled with dark brown and whitish below, heavily flecked with dark brown. There is usually a series of small, reddish dorsolateral spots. The tail has lighter and darker markings above and a large, whitish, black-edged spot at the base. Male with 10-12 preanal and 8-10 femoral pores. The head-and-body is 60 mm in length, and the tail is nearly as long as the body. This species has been reported from the Great Nicobar Islands.

*Hemiphyllodactylus typus auranticus* is a race of the preceding species confined to the Nilgiris and Anaimalais, Western Ghats and Shevaroyis, Eastern Ghats. It differs from *typus* mainly in having a shorter and less depressed head and fewer preanal and femoral pores in the male. The head and body length is 36 mm and the tail is 34 mm long.

### **Genus Gekko** **Giant House Geckos**

These lizards are the giants among the geckos of the world by virtue of their length which ranges from 300 mm to 340 mm. They are recognised by their large heads, granulated and tuberculated bodies, and strongly dilated digits which end in sharp claws. They are also credited with a remarkable throat sound. They are mainly insectivorous but devour any animal that they can master. Males have preanal and femoral pores. These geckos are aggressive in nature and attack readily if molested. Two species occur in India.

**Gekko gekko**

**Southeast Asian Giant House Gecko or Tuctoo**

This lizard is the largest living gecko with a record length of nearly 350mm. The popular names "Tuctoo and Tokay" are based on the lizard's remarkable call "touk-tay" repeated several times and which can be heard at a distance of 33 mm in undisturbed surroundings. It is grey or yellowish above, with red or orange spots and whitish below, with pinkish spots. This gecko is mainly insectivorous but occasionally gulps down larger prey such as mice, rats, snakes, and other lizards. When annoyed, it inflates its body and hisses loudly, holding its jaws wide open to lunge at its offender. If the provocation continues, the lizard rushes forward and seizes some part of the anatomy of its annoyer in its extremely powerful jaws which are not easily disengaged. Sometimes the tokay gets involved in long combats with larger snakes. Practically nothing is known of its breeding habits except that the female cements its eggs to trees, rocks or secluded spots in the house. The distribution of this species is restricted to Bihar, Bengal, and Assam and Andaman Islands.

**Gekko smithi**

**Smith's Giant House Gecko**

This gecko lives in the jungle, among large trees and seldom enters the houses. It resembles the preceding species in size but differs from it in having a slightly longer body and a shorter tail. It is brown above, with marblings of a darker colour often with whitish spots which may or may not fade with age. It is whitish below, flecked with grey. Its call is a loud "tuk, tuk, tuk" repeated five or six times. This species is met with in the Andaman Islands.

**Ptychozoon kuhli**

**Flying Gecko**

This species, which represents the genus in India, is found in the Nicobar Islands. As the generic name suggests, the skin of the sides of the head, the trunk, and the tail of this gecko is produced into lobes and flaps which in effect are a survival tool that these curious lizards are endowed with. These geckos, which live on large trees in the jungle, take long leaps in which act they are supported by the dermal expansions and webbed toes which combinedly act as a kind of par-

chute. To call these lizards "flying geckos" seems to be a bit far stretched but it is true that they are capable of gliding considerable distances whilst leaping from higher branches on to lower ones. The colouration which is almost similar to the lichen-covered bark upon which the gecko alights consists of wavy dark-brown crossbars with darker shades of brownish grey and is sufficient to conceal its presence while resting. The webbed toes, the frilled tail, and the lateral skin flaps also serve to screen even the shadow of the animal at rest. The female lays 2-3 hard shelled eggs and glues them to the bark of trees. This is a small lizard, with a head and body length of about 95 mm and a tail of about the same length.

***Phelsuma andamanense***  
Andaman Day Gecko or Green Gecko

This species is the only representative of the genus occurring in India and is easily recognised by its clawless toes, round pupil of the eye and conspicuous colour. The eyes are suited to this day-active gecko and help it to merge easily with the leafy background of the evergreen forests. The ground colour is a beautiful leaf-green, marked with red or orange spots. There are reddish streaks on the head and upon the neck. The tongue is bright red. It is usually found under the bark of trees but also descends to the ground on its feet like a cat, if chased by birds and snakes from its perch. The head and body length is about 65 mm and the tail is 75 mm long. This gecko is reported to be common in the Andamans, especially in the vicinity of Port Blair where it is found often in houses.

***Teratolepis fasciata***  
Banded Gecko

This gecko is the only representative of the genus and can be easily recognised by the large scales on the body and the tail, the prominent bands on the dorsum, and the short, swollen tail. The head is rather large. The pupil of the eye is vertical. The scales on the body are large and leaf-like. Male with 6 preanal pores. This gecko is greyish-brown above and dirty white below. The dorsal pattern consists of two curved, light marks on the head and five longitudinal dark brown bars on the back. The head and body length is 40 mm and the tail is less than 30 mm. This gecko is very rare and has so

far been recorded in India from Jalna, Maharashtra and Khasi Hills, Meghalaya.

*Lophopholis scabriceps* is a rare, scaled gecko reported only from the Ramanathapuram and Madras Districts of Tamil Nadu. The top of the head is covered with minute granules, those on the snout being largest and keeled, and the dorsal scales are uniform and imbricate. The digits are moderately dilated and clawed, with divided lamellae. The pupil is vertical. This gecko is greyish-brown above, with dark-brown markings that may form transverse bars on the dorsum. The belly is dirty whitish. The head and body length is 45 mm and the tail is nearly 50 mm long. Practically nothing is known of the life history of this species.

### **Genus Eublepharis**

#### **Cat-eyed Geckos**

The geckos of this genus are easily distinguished from all other members of the family by their true eyelids that can be opened and closed. They live in rocky or sandy deserts. The body is soft and covered with tiny juxtaposed scales and larger tubercles. The tail is shorter than head and body, fat and swollen at the base in the adult for which reason the lizards are more commonly called 'Fat-tailed Geckos'. The digits are short, cylindrical, and clawed but lack the expanded pads. The pupil is vertical and the lizards are nocturnal, hiding for most of the day under stones or burrows in the sand, and coming out at night to feed on small insects. The colouration and pattern, which is conspicuous in the young, does not persist in the adult; usually the young are banded, while the adults are spotted. Males have preanal pores. Females lay sausage-shaped leathery eggs as do other lizards and snakes. Two species occur in India.

### **Eublepharis hardwickii**

#### **Hardwicke's Cat-eyed Gecko**

This gecko is dark brown above, with 6 broad cream-coloured transverse bands—one each across the nape and centre of the body, and the remainder on the tail. The belly is white. The pattern is pronounced in the young and fades with age. Male with an angular series of 13-18 preanal pores. The head and body length is 110 mm and the tail is 85 mm long. Nothing is known of its habits. It is so far recorded from Chota Nagpur, Bihar, Orissa and the adjacent terri-

tory with West Bengal, Uttar Pradesh, Madhya Pradesh, and certain yet to be confirmed localities in South India.

**Eublepharis macularius**  
**Spotted Cat-eyed Gecko**

The fleshy carrot-like tail and the distinctive colouration of the young as well as the adult of this species are so unmistakable that one has absolutely no difficulty in recognising this lizard. The juvenile is dark brown to black with 2-3 wide yellowish bands across the trunk and from 4-6 transverse stripes of the same hue on the tail. The adult is straw yellow to pale grey with blue-black spots on the back and whitish below. Usually it is 123 mm in head and body, with a 90 mm long tail, although occasional individuals reach a total length of nearly 300 mm. Male with 9-14 preanal pores. This gecko avoids dry, cool or windy weather. It tends to live in colonies and is found in the desert and sparse grassland with clay soil. Its movements are slow and it walks often with the body well off the ground. When annoyed, it raises 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 and bites readily. But for this typical reptilian act of defence, this gecko is harmless although it is dreaded by the desert people who regard its bite and the foul-smelling liquid excreted by it when handled as highly poisonous. On the contrary this lizard is tamed quickly and does well in captivity. The female lays about 4-7 eggs in a clutch. This species occurs in the arid tracts of northwestern India, particularly Punjab, Rajasthan and Gujarat and the range extends up to Pune and its vicinity in Maharashtra.

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## **AGAMIDS, Family Agamidae**

With as many as 43 species, this is one of the larger families of Indian lizards. Agamids are typical lizards and familiar to most of us. As one might expect with such a large group, there is a great deal of variation among the several kinds that it is difficult to define the family by listing a few characters. Instead, it is easier to say what is not an agamid.

Majority of the agamids are robust-looking lizards with two pairs of well developed limbs. The body is more or less depressed in the terrestrial species and is laterally compressed in the arboreal forms. The degree of variation has reached its maximum in the species living in the sand or soft soil where the body can be closely pressed to the ground. The eye has movable lids and a round pupil. The skin is usually covered with scales which overlap and are not of equal size. There are no large symmetrical plates on the head which is covered with small scales. The belly scales are not quadrangular and are not arranged in transverse series. There are no osteoderms but there are numerous spines particularly on the head and the tail. The tail is usually long and not fragile. There are no femoral or preanal pores. Many are good climbers and live on trees and bushes. The males often differ from females in sexual characters. Majority are insectivorous, while a few are herbivorous. Barring a few Toad-head Agamas which are viviparous, they reproduce by laying eggs.

### **Genus Draco**

#### **Flying Lizards**

These are small, forest-dwelling lizards well distinguished by the compressed bodies, wing-like parachutes on each side of the body, wattles on the throat and a long tail. The tail is very long and slender but not brittle.

The wing-like skinny expansions called patagia are supported by five or six of the much elongated posterior ribs, and can be folded up like a fan. These diminutive lizards which rarely exceed 20 cm in

length have earned the dubious distinction as the 'Flying dragons' because of their much exaggerated powers of flight. Actually they are capable of taking only long flying leaps from bough to bough. When they glide, the skinny expansions are spread out and look like short rounded wings though they cannot be flapped. Sometimes these lizards resting on the giant trees greatly resemble butterflies since they have the habit of unfolding or folding their pretty wings.

As one would expect of them, the flying lizards are entirely arboreal in their habits rarely descending to the ground. They feed upon insects and grubs but seem to relish tree ants. The female lays 2-5 eggs which are buried in the soil.

**Draco maculatus**  
Black-spotted Flying Lizard

This flying lizard which represents the Indo-Chinese element in our fauna is restricted to the hills of Assam. The overall colouration is grey or bronze above with darker markings. The patagia are yellowish or greenish above and pale yellow below. There are numerous scattered black spots on the patagia which vary in size, number, and arrangement. The gular pouch is pale yellowish or brownish, with a blue spot at the base and sometimes at the tip. The inside of wattles are coloured reddish-brown or yellow. The flying lizard grows to 205 mm.

**Draco norvilli**  
Alcock's Flying Lizard

This species is grey or bronzy above with metallic tints and darker spots and immaculate below. There is a distinct light transverse band across the centre of the back. The throat is mottled with grey and the gular appendage is pale lemon. This lizard attains a length of nearly 300 mm. It is found only in the Naga Hills, Assam and is extremely rare.

**Draco dussumieri**  
South Indian Flying Lizard

This species occurs in the hills of South India where it is chiefly found in the coconut and betel-nut plantations. It is greyish-brown above with darker markings or a series of dark circles on the back. The

throat is dark and mottled with black. The patagia are purplish-black above with light, rounded spots and grey below with a series of large black marginal spots. It reaches a length of 230 mm.

### **Sitana**

#### **Fan-throated Lizards, Genus**

These lizards resemble the Common Garden Lizard but are devoid of a dorsal crest. The tail is very long and slender. They differ from other agamids in having only four toes on hind-foot, the outer being absent. Males possess large gular pouches which extend on to the neck and rest of the body and hence the common names : Bearded or Fan-throated Lizards. There is only one species.

### **Sitana ponticeriana**

#### **Pondicherry Fan-throated Lizard**

This lizard is olive-brown above and whitish below. The dorsal pattern consists of a series of dark-brown, black-edged diamond shaped spots. The body is compressed and the tail is long, slender, and rounded at the tip. The tympanum is not covered by scales. There are no femoral or preanal pores. The gular pouch of the male turns brilliant red, black, and blue during the breeding season. It is primarily unfolded or folded several times in a flash when the animal is excited and puts on a gorgeous display to entice a female during courtship. Sita's lizard is a very agile creature that can escape from danger at the slightest alarm by rushing into a nearby hole or crack in the ground or in the bush. It can run with great speed and while so doing adopts a bi-pedal fashion. The female lays six to eight eggs and buries them in the ground. The Bearded Lizard is under 80 mm in head and body length and the tail is 120 mm-160 mm long. It is common both in the plains and forests throughout India.

### **Otocryptis beddomii**

#### **Beddome's Earless Lizard**

This is a rare hill agamid restricted to the Cardamom and Palni Hills of South India. It is characterised by a compressed body, a hidden tympanum, and the absence of a dorsal crest. The limbs are long and slender. The gular pouch is indicated by a longitudinal fold in the male. This rare lizard is light brown above with or without a series of transverse vertebral spots. It is 125 mm in total length.

**Ptyctolaemus gularis**  
Blue-throated Lizard

This is a fan-throated lizard found in the neighbourhood of Shillong, Meghalaya even at considerable altitudes. It is recognised by the three dark blue folds on the throat which tend to unite at the base to form a U-shaped figure. It is olive-brown above, with darker transverse bars or spots and is yellowish white below. It attains a length of 250 mm.

*Oriocalotes paulus* is a dwarfed Calotes restricted to the Khasi Hills, Meghalaya. It is pale brownish-olive above, with dark brown spots or marblings which sometimes form irregular crossbars on the back. The underside is light-brown. The throat is streaked with transverse bars. Adults are nearly 200 mm in length.

**Japalura**  
Japalura Lizards, Genus

These are a group of mountain lizards which are recognised by the unequal dorsal scales and the absence of postorbital spine. The tail is long and slender and is sometimes swollen and rounded at the base in the males.

Some five species are found in the Eastern and Western Himlayas.

**Japalura kumaoensis**  
Kumaon Mountain Agama

This is greyish-brown, with dark brown triangular U-shaped markings above, and is dirty whitish below, with or without dark spots or streaks. The head has dark crossbars and there are reticulations on the flanks. There is a dark streak between the eye and ear. It is found in the neighbourhood of Simla, Himachal Pradesh and Garhwal District, Uttar Pradesh. It attains a length of 185 mm.

**Goniocephalus**  
Angle-headed Lizards, Genus

These are forest-living lizards with angle-like heads. The body is usually strongly compressed and covered with unequal, heterogenous scales. The dorsal crest, gular pouch, and a strong fold in front of the shoulder usually extending across the throat are present. The tym-

panum is naked. There are no preanal and femoral pores. There is one species.

**Goniocephalus subcristatus**  
Andaman Angle-headed Lizard

This agamid prefers dense jungle and lives in the Andaman and Nicobar Islands. The colouration is highly variable ; it is ordinarily brownish or olive above, uniform or spotted or reticulated with black on the sides and light brown below. There is a light dark-edged stripe on either side of the neck. It is a true arboreal lizard for it seldom descends to the ground. It is a very agile creature and it is not easy to obtain a specimen without shooting it. It is so quick in its movements that it would ascend 6 or 10 m up a tree in a moment. The tail of this lizard appears to break easily. The food consists of insects, grubs, and worms. An adult male is 370 mm in length but the females are considerably smaller.

**Mictopholis**  
Mixed-scaled Lizards, Genus

These are rare agamids found only in Assam. The body is compressed and the scales on the body are very unequal and irregular. There is a strong fold in front of the shoulder and the gular sac is present. The tympanum is exposed. There are no preanal or femoral pores. The only known species i.e. *Mictopholis austeniana* is a female. It is olive-green above and pale green on the underside. Very little is on record about its habits.

**Salea**  
Salea Lizards, Genus

These are members of a genus of hill lizards found mainly among bushes, hedges and gardens in the Western Ghats, sometimes even at higher altitudes up to 1800 m. The body is compressed and covered with large, unequal scales which strongly overlap. The male has both the nuchal and dorsal crests besides a gular sac. The tympanum is distinct. The tail is strongly compressed and crested above in the male. There are no femoral or preanal pores. Two species occur.

**Salea horsfieldi**  
Nilgiri Salea

This lizard is bright green above and whitish below. The dorsal pattern consists of a series of dorsal spots or irregular dark crossbars

on the back and sides of the body. There is a blackish band from the eye to the shoulder and a short dark-edged bar along the hinder part of the thigh and adjacent part of the tail. The tail is banded with light and dark. Adults attain a length of 350 mm. The males are longer. When excited or chased, the male turns verdant green in colour which merges with the yellowish hue of the head and the gular sac which extends to the chest becomes brilliant yellow. Then the lizard is an extremely beautiful object to see. The female lays about 3 to 4 eggs. This species is common in the Nilgiris and Palnis.

**Salea anamallayana**  
Anaimalais Salea

This hill lizard is restricted to the Anaimalais, Palnis, and Hills of South Kerala. It is brown above and is easily recognised by the four triangular V-shaped dark-brown marks on the back and the presence of a strong fold in front of the shoulder. The head is light or dark-brown with whitish spots. The upper lip is bordered by a whitish stripe which extends on to the shoulder. The limbs and the tail are banded. The undersides are whitish. Females are usually larger and an adult individual measures 365 mm in length.

**Calotes**  
Garden Lizards, Genus

These lizards are typical animals of the plains and forested regions of India. Majority of them are good climbers. They are recognised by the laterally compressed body, the crest of spines on the neck and body and an extremely long tail. The ear-opening is conspicuous. There are no femoral or preanal pores. Most of the males have a gular sac and change colours during the breeding season. Fifteen species occur in India.

**Calotes cristatellus**  
Malayan Green Calotes

This species of Malayan origin is a long-headed, slenderlimbed, long-tailed arboreal lizard found in the jungles of Nicobars. There is a horizontal projecting fold of skin extending from behind the lower jaw to above the shoulder. The scales on the flanks point backwards and downwards. A grown-up individual may attain a length of 450mm

of which the extremely long tail makes up for 140 mm. This lizard is green above with reddish or chocolate markings of which there is one along the side of the body and another on the snout. It is known to turn black if chased.

**Calotes danieli**  
Daniel's Calotes

This lizard is a recently described species and is similar to the preceding form from which it differs in certain morphological details. It is found only in the Nicobar Islands. It is blackish-chocolate dorsally and reddish-chocolate on the lower parts. There are three blotches a black patch surrounding the eye and tympanum, a vertical spot between eye and tympanum, and another white spot behind eye. The head and body is 74mm in length and the tail is nearly 270mm long.

*Calotes jubatus* is green above with large pale spots chiefly on the anterior part of the body and pale greenish below. The throat and lip are sometimes coloured chocolate and there are large chocolate blotches on the flanks. It grows to 600mm and is restricted to the Nicobar Islands.

*Calotes microlepis* is light golden-brown above with black specks. The male's throat-fan is chocolate coloured. It attains a length of 270 mm. It occurs in Manipur.

**Calotes versicolor**  
Indian Garden Lizard

This lizard is the commonest and most familiar of Indian animals. It is found in the scrub/jungle, open woods, hedges and city gardens. It is mainly an arboreal lizard occurring wherever trees and shrubs are found. The head is large and high and the snout is short and pointed. The entire body and tail are covered with strongly keeled scales. The dorso-nuchal crest is prominent. The tail is rounded and extremely long. The toes are clawed. A large individual may attain a length of 490 mm of which the tail accounts for nearly 350 mm.

The normal colour is brown with a row of light transverse bars and light dorso-lateral stripes, more marked in juveniles and females. The belly is whitish with dark streaks. The tail is marked with light and dark bands. During the breeding season the male assumes a brilliant crimson or scarlet colour which is the source of the misapprehension

name, 'Blood sucker' given to this harmless lizard. The breeding dress of the male may primarily be confined to the head and shoulders, but sometimes covers most of the body. Males are pugnacious in nature and long drawn combats among them are common when they are courting females.

The garden lizard is a good climber and the adults may climb up to 9m by making use of the long tail and clawed toes. Despite its arboreal existence, the garden lizard is at ease on the ground. It camouflages nicely among stems and bushes where its colour harmonises. It is very common during the hot and rainy weather but is encountered infrequently in the winter when it spends most of the time in decaying vegetation, hollow logs, and beneath stones. On warm days, however, the young, and adults emerge about midday to bask for a couple of hours. This lizard's habit of repeatedly nodding its head indicates excitement of any nature, sexual or other. It can inflict a painful bite if picked up. It is an active creature with a voracious appetite. It feeds chiefly upon spiders and various kinds of large diurnal insects like crickets, cockroaches, grasshoppers, and ants and is known to devour young birds and to eat even distasteful butterflies avoided by birds. The garden lizard is preyed upon by snakes, birds, cats, and monitor lizards. It courts the female by the gorgeous display of its breeding dress, vanquishing other males by a threatening posture that consists of inflating the throat and dewlap and bobbing the head up and down. The female lays a clutch of 10-20 eggs and buries them in the soil with the hatchlings emerge after a month or so.

*Calotes maria* is green above with red streaks and spots and greenish white below. The dorsal pattern consists of several oblique stripes upon the flanks, and elongated or rounded spots upon the limbs and upper aspect of the tail. The heads of the male becomes bright red in colour in the breeding season. Adults attain a length of 490 mm. The lizard is found in the Khasi Hills, Meghalaya.

*Calotes jerdoni* is reported from Khasi Hills, Meghalaya. It is generally found among the foliage or in low bushes in and around Shillong, Meghalaya. It is similar to *maria* but differs from it in having an incomplete nuchal crest. It is green above with or without dark-edged, dorso-lateral stripe and vertical bars. There are light spots on the limbs and the tail is dark spotted above. Adults are about 385 mm in length.

*Calotes emma* is a hill species found in Goalpara and Garo hills of northeast India. It is often met with at considerable altitudes in the open wooded areas. It is light olive-brownish above, with dark brown dorsal bars or spots. The entire throat and the adjacent area in the breeding season become black while the upper lip and rest of the head turn pale pink. Adults are about 400 mm in total length.

**Calotes mystaceus**  
Yellow-lipped calotes

This lizard is about the size of the common garden lizard but with a short tail. It is restricted to the Andaman Islands. The mane of spines is well developed in the male. The overall colouration is olive with broad yellowish stripes that extend to the shoulder. Adults may reach 425 mm in length ; the females are smaller. The male, during the breeding season, becomes a strikingly handsome animal.

*Calotes nemericola* has unusually large dorsal scales which are sometimes three times as wide as the ventrals. It is greenish above with darker markings and dirty whitish on the undersides. Adults attain a length of 470 mm. This lizard is found in the Nilgiri Hills of South India.

*Calotes grandisquamis* is also a hill species with a large head. The dorsal and ventral scales are large and the dorsinuchal crest is well developed. It is green above with broad black bars arranged transversely and pale greenish below. Adults reach a maximum length of 475 mm. This lizard is found in the Anaimalis, Brahmagiris and Hills of South Kerala, Western Ghats.

**Calotes calotes**  
Long-tailed Green Calotes

This species is longer than the common garden lizard reaching a length of 630 mm of which the tail accounts for nearly 500 mm. It is entirely a forest lizard and is found in the Eastern and Western Ghats and the Nicobar Islands. It is distinguished by the swollen cheeks, a cluster of spines above the tympanum and its characteristic colour. As the common name indicates, it is bright green in colour, usually with whitish cross bands on the back and the tail. The juveniles have a whitish dorso-lateral stripe on either side of the body. The head is yellowish and the throat is red.

*Calotes andamanesis* is a rare lizard found only in the Andaman Islands. The only known specimen is a male. It is green above with whitish spots on the body and greenish-white below. The top of the head is yellowish and the tail is marked with dark annuli. It reaches 250 mm in length.

### **Calotes rouxi**

#### **Forest Blood Sucker**

This species and the one immediately following are the representatives of the dwarfed *Calotes* complex found in the forests of south and western India. They are mainly arboreal lizards distinguished by the distinct dark folds across the neck in front of the shoulder and two slender spines on each side of the back of the head. The gular pouch of the male as also the upper part of the head, nape are brick red in colour which is the source of the common name. It is olive-green above with darker vermiculations on the neck and pale green below. There is a dark band on either side of the head which extends on to the neck. Adults are about 250 mm in total length.

### **Calotes elliotti**

#### **Elliot's Dwarf Calotes**

This lizard differs from the preceding species in having a conspicuous white spot below the eye. It is olive above with somewhat angular dark-brown cross-bars on the back and a bar of the same hue on each side of the neck. Adults are nearly 255 mm long. This species occurs in the hills of South India at elevations up to 3000 m.

### **Psammophilus**

#### **Rock-lizards, Genus**

These lizards are most conspicuous among the agamids found in the hills of South India. They are well distinguished by the dorso-ventrally depressed body, the presence of a fold in the skin of the throat, and a long, slender tail. The body is covered with uniform keeled scales and there is no dorsal crest. As the common name suggests, these red and black or black and yellow lizards are usually found basking on bare rocks during midday, lending colour and grace to the drab surroundings in a rocky country. There are two species.

**Psammophilus dorsalis**  
South Indian Rock-Lizards

This lizard is the most conspicuous animal in the hills of South India. The colouration is highly variable : the young and females are olive-brown dorsally, spotted or marked with dark brown and with a series of white elongated spots on either side of the back. The adult male has bulging cheeks and a swollen tail and is certainly a handsome creature. It is pale brownish above and yellowish below, with yellowish lips. The male during the breeding season is an object of beauty with a vermillion-red forebody and pinkish lips. Adults are about 440 mm in length. Females are smaller.

The common rock-lizard is found not only on the bare rocks in the hills but also inside ruined structures situated at considerable elevations. Despite its stout body, this rock-lizard is a very agile creature that escapes at the slightest alarm into crack or crevice of the rock on which it rests at the slightest alarm. It also is a very shy reptile and never allows one to approach closely. It chiefly feeds upon insects. This lizard is reported to be exceedingly common in some parts of Nilgiris and in and around Bangalore.

**Psammophilus blanfordanus**  
Dwarf Rock-Lizard

This species is smaller than the common rock-lizard from which it differs in having slightly enlarged scales on the body. The young and females are olive-brown above, spotted or marbled with brown. There is usually a series of large, lozenge-shaped, dark-brown spots on the back and the tail which persist in the adult female but tend to disappear in the male. The adult male is much like *dorsalis* in colour. Adults attain a length of 310 mm. Females are smaller. Although the Dwarf Rock-Lizard frequents bare rocks, it occasionally is found near human habitations. The male, during the breeding season, assumes brilliant colours, the head and front portion of the body being of a scarlet or red while the hind parts are almost black. It is not as widely distributed as *dorsalis* and is restricted to the hills of Bihar, Orissa, Madhya Pradesh and Eastern Ghats.

**Agama**  
**Agamas, Genus**

This group of terrestrial lizards is a conspicuous component of the lizard-fauna occurring in the north and north-western India. They are characterised by rather flattened bodies, somewhat heart-shaped heads and short tails. The body is covered with scales which are either uniform or intermixed with larger ones. There is a fold on the throat that usually connects with a fold in front of the shoulder. The tail is rounded, depressed or compressed. Barring a single species, males have patches of abdominal and preanal scales.

The agamas are diurnal lizards generally living in rocky or even mountainous regions. They are very active during day when they hunt insects and they retreat into the crevices of rocks at night. Some species feed both upon vegetable matter and insects. All lay eggs, In all, six species are found in the driest and most barren areas of Uttar Pradesh, Punjab, Himachal Pradesh, Gujarat, and Jammu and Kashmir.

**Agama himalayana himalayana**  
**Himalayan Rock Agama**

This agama is the commonest rock lizard of Ladakh region of Kashmir but is also reported from the other parts of the Western Himalayas. It is olive above and greenish-white below. There is a row of light round spots which often tend to form a network and a series of black spots on the flanks. The throat of the male is spotted or marbled with dark grey. The tail is dark-banded. Adults average from 250 mm to 270 mm in length but the females are smaller. During the breeding season the males are very pugnacious and they can often be seen fighting and chasing each other.

**Agama tuberculata**  
**Kashmir Rock Agama**

This rock-agama is dark olive-brown above and whitish or brown below, the throat and sometimes the chest also, are heavily marked with dark blue. The dorsal pattern consists of numerous dark spots more pronounced in the young and usually arranged on either side of a lighter vertebral line. The shoulders, breast, and flanks, of

live individuals have bright yellow or orange spots. The adult is indeed a handsome animal whose entire lower surfaces are bluish-black while the throat, sides of the neck shoulders, and belly are tinged with purple. The male has a callose patch of scales on the belly. The Kashmir Rock Agama is usually found singly or in pairs. It lives in holes and crevices and stonewells crawling about them with great ease. It feeds upon ants, butterflies, and other insects but is occasionally found preying on the petals of flowers. In the cold weather it hibernates, but a few individuals are to be seen basking in the sun on bright days. It is abundant in the summer months. Adults are about 400 mm in total length. This species is very common throughout the Western Himalayas and is reported to be abundant in the neighbourhood of Simla during the summer months.

**Agama agrorensis**  
**Stoliczka's Rock Agama**

This rock-agama is known from Punjab and Kashmir. The young are olive above, variegated and spotted with black and pale yellow or with three yellowish longitudinal stripes. The throat is reticulated with black. The adult is dark olive with darker spots and reticulations, sometimes arranged in longitudinal lines and the throat and chest are heavily tinged with blue. The undersides are whitish. Adults are about 360 mm in length.

**Agama melanura**  
**Black Rock Agama**

As the common name suggests, the ground colour of these agamas is black. The undersides are dark grey, with patches of callose scales. The juveniles are dusky grey marked with pale dorsal spots. This agama is found among the cliffs and crevices of rocks that provide adequate shelter for the animal. Adults attain a length of 445 mm and they seem to be herbivorous. This species is reported from the Salt Range, Punjab.

**Agama agilis**  
**Brilliant Rock Agama**

This agama is found both in the plains and hills, and on shrubs and among rocks. It is sandy or greyish above with small white spots

and more or less distinct dark cross-bars and is cream-coloured below. The throat and belly are heavily streaked or mottled with dark olive. The young have a vertebral and two dorso-lateral series of light oval spots in between the dark cross-bars. As the specific name indicates this rock agama is an active creature, running with considerable speed. Although it mainly is terrestrial in habits, it sometimes ascends low bushes or chunks of rock. It is mostly diurnal in its habits and is seen more plentifully in the flat, open desert than on the sand. Adults are about 275 mm in total length. This species is found in the Salt Range, Punjab.

**Agama minor**  
**Dwarf Rock Agama**

This is the only rock-agama without the preanal callose scales. This species fully merits its specific name "minor" as it is the smallest of the Indian agamas. The body is 90 mm and the tail is 80 mm in length. The females are longer. The young are pinkish-brown with dark spots on the back. The adult is yellowish-brown above with three rows of dark brown, light-edged spots on the back and base of the tail and yellow whitish below, the throat being speckled with grey.

The limbs have dark cross-bars. The females are more brilliantly coloured and they turn crimson under sexual excitement. The Dwarf Agama is crepuscular and nocturnal in its habits. It is sluggish in its movements and does not seem to escape if approached. It lives in holes in the ground but does not dig its own burrow. It feeds upon insects and is easily kept in captivity. When first caught it emits a short squeak.

**Phrynocephalus**  
**Toad-head Agamas, Genus**

These are small to medium-sized agamas of the deserts. The head is thick and short, much like that of a toad's. The ear is hidden. The eyelids are thick, strongly projecting and beset with fringed margins which act as a barrier to the entrance of sand when the eyes are tightly closed. The body is depressed and devoid of a dorsal crest. There is no gular sac. The limbs are weak and the claws are very long. The tail is short. Despite the weak limbs these lizards run at

considerable speed and can bury themselves quickly in the loose sands. They feed upon insects, chiefly, upon running ants and beetles. Majority lay eggs while a few are live-bearers. Three species are known.

**Phrynocephalus theobaldi**  
Theobald's Toad-head Agama

The head of this agama is rather high and the body is covered with small and smooth scales. The tail is flattened at the base and is slightly longer than the head and body, It usually is grey above often with a series of black spots on the back and white below. There is an elongated black patch on the throat, the belly, and the end of the tail of an adult. The underside of the tip of the tail is intense black in the male and grey in the female. Adults reach about 115 mm in total length. This lizard occurs generally in the loose sandy places of Kashmir and is remarkable in two respects: it is monogamous in its habits and the female brings forth its young alive.

**Phrynocephalus euptilopus**  
Alcock and Finn's Toad-head Agama

This agama is distinguished by the presence of long spinous scales on the neck and below the head, the very long digits and its beautiful colouration. It is usually sandy above, thickly speckled with black and whitish below. The head above is marked with irregular dark blotches and there are large rounded spots on the nape and shoulders. The tip of the tail is black. It attains a length of 125 mm of which the tail makes up for slightly more than half. This species which was known from the desert region of northwestern Baluchistan, Pakistan has been recently recorded from the Indian desert, western Rajasthan.

**Phrynocephalus Laungwalensis**  
Laungwals Toad-head Agama

This toad-heada agama inhabits the extreme western sandy desert tracts of Jaisalmer District, Rajasthan. It is dark-greyish above with longitudinal rows of black spots and whitish on the underside, The

head, nape, throat, sides of body and limbs are liberally suffused with black. There are two black spots slightly below the neck. The throat fan is well developed. It is about 115 mm in total length. It mainly is insectivorous, feeding mostly upon small red and large black ants and beetles of which there is a copious supply on sand dunes all year round. It is diurnal in its habits and is said to bury itself up to a depth of nearly 300 mm in the loose sand by vigorous wriggling movements of the body, limbs and tail. This species is recently described.

### **Uromastix** **Spiny-tailed Lizards, Genus**

These are curious-looking, burrowing agamids found in the dry and arid tracts of northwestern India, occurring plentifully in Rajasthan and U.P. They are easily recognised by the depressed bodies and short, spiny tails. The striking feature of the oddest tail in the family is its armour of large, hard and pointed scales which serve as a principal means of defense for these non-aggressive lizards. The eyes are tiny and the ear-opening is quite exposed. The body and head are covered with granular scales. There is no dorsal crest nor a gular sac. The preanal and femoral pores are well developed. The colouration is uniform dull brown or sandy, to match with the sterile soil on which these lizards live. Adults average in length from 340 mm to 415 mm.

The spiny-tails are absolutely terrestrial and diurnal in their habits, preferring sandy places where they dig burrows to hide during the mid-day. They lie in such a position in their holes that the tail blocks the entrance. They hibernate during the winter months. They are omnivorous although preferring tender leaves, small flowers and blades of grass for eating for which their dentition is accordingly modified. Females lay eggs. The spiny-tails are surprisingly tame creatures if we ignore the jerky side-blows delivered by the tail. One species occurs in India.

### **Uromastix hardwickii** **Indian Spiny-tailed Lizard**

The Indian Spiny-tail is of a delicate sandy or yellowish-brown colour, often with dark dots or vermiculations. The young usually

are marked with a regular series of pale blue specks on the back. A most distinctive mark is a large blackish patch on the anterior side of the thigh. The underparts are whitish, with black spots on the throat and a greenish tinge on the tail. The skin surrounding the neck and flanks is very loose. There is a distinct fold across the throat. The limbs are very strong. There are 12-18 preano-femoral pores on each side of the thigh. The tail is shorter than the rest of the body (the structural peculiarities of the tail have already been commented upon). This lizard tends to live in colonies. It is easily caught and tamed. The female lays about 12-15 large sized eggs. The tail without spines is considered a delicacy and the oil extracted from its fat is used as a cure for impotence.

## **CHAMELEONS, Family Chamaeleonidae**

Chameleons are slow-moving, diurnal lizards that live in the forests especially scrub jungles, where they spend most of their time on trees fixed to a twig or branch. They are a distinctive group of lizards because of their structural peculiarities like the long, club-shaped tongue, the watchspring-like tail, the protuberant, independently movable eyes, pliers-like feet and lastly the ability to change colour. Africa and Madagascar are the home of these bizarre lizards where a vast majority of the species known are found. They range from 50 mm to 600 mm in length. Only one species occurs in India.

The body is high, flattened from side to side and is covered with granules or studded with tubercles down the back. The short, prehensile tail can be wrapped round a twig for extra grip. The head bears a helmet-like knob. The feet are like pairs of tongs with their digits arranged in opposing, grasping bundles of two and three respectively. The chameleon is an excellent climber thanks to its feet and tail which are modified as clasping organs but it is slow and deliberate in its movements. The tongue is very extensile and can be shot out at great speed and about the length of the animal to catch prey. It is said that a 375 mm long chameleon can shoot out its tongue up to 300 mm. Most spectacular, however, is the ability of a chameleon to move each of its eyes wholly independent of one another so that the animal can see forward with one eye, whilst looking sideways or backwards with the other. The eyes rotate ceaselessly in all directions, and when the chameleon makes up its mind to catch the prey the eyes stop rotation and focus on the object, towards which the animal advances with great deliberation.

Although many agamids and iguanids among lizards, fish and even the invertebrates like squids can change colour, it is the chameleon that has become famous as nature's quick change artist,

A chameleon can change its colour from green and brown to different shades of yellow, white and black in different ways, on both sides of the body so much so it is impossible to tell the colour of the animal precisely as the same individual may appear in the grab of no less than six shades in the course of few hours. Even so the popular expression "changeable as a chameleon" seems to be much exaggerated. The fact is that every species of chameleon has a basic colour and pattern that is in tune with its chosen habitat. Further, the colours of a chameleon are dependent largely upon the psycho-physiological stimulus and change in response to light, intensity, temperature, or emotional state of the animal and in movements of excitement sweep in a flush over the creature's body and they have nothing to do with the background nor is it a sort of protective camouflage of the animal as is generally believed.

The chameleon lives mainly upon insects and it requires them in large quantities and in live condition. It drinks freely. Males hold territories which they guard tenaciously, keeping out the intruders, except females by bluff. Some chameleons lay eggs while others produce live young. For the female which lays 10-40 eggs it is a difficult task to come down to the ground for depositing the eggs. Incubation lasts several months and a day-old baby chameleon can fend for itself. Chameleons are easily tamed and do well in captivity if cared for and fed regularly.

### **Chameleo zeylanicus** **Indian Chameleon**

The head and body of this arboreal lizard are markedly compressed laterally and covered with granules or tubercles. There is a helmet-like long casque on the nape and a low vertebral crest of bluntly pointed scales. There are a series of conical tubercles that form a distinct crest along the throat and belly. The Indian chameleon is usually green in colour, varying in shade from pale yellowish to black but it is rarely yellow. The lower parts are yellowish to greenish white. An angry chameleon may turn black with rage or the body may become mottled or marbled with transverse blotches or bands of yellow or blue or black. Males assume brilliant hues during the mating season and fights among them are common. When picked

up, the Indian chameleon hisses, inflates its body and can deliver a harmless but painful bite. The female lays 12-30 eggs and displays parental care by digging a nest of loose earth up to 30 cm below the ground for depositing the eggs. A full grown individual measures 380 mm in length, including the tail. The Indian chameleon is partial to the scrub jungle and is found mainly in the wooded regions of Kutch (Gujarat), south Gangetic plains and southern India but it is far from common.

## **SKINKS, Family Scincidae**

Skinks are the most abundant of our lizards but they pass unnoticed because they are mostly of a retiring disposition, living amidst the litter or under stones and rotting vegetation or decaying logs. They all have an ordinary 'lizard shape', with elongated bodies, a heavy tail and very often limbs that may be diminutive or altogether missing. The head is covered with symmetrical shields and body with overlapping, smooth or glossy scales. The body, the limbs, and the tail are protected by small bony plates. The pupil of the eye is round and several skinks have transparent discs or 'windows' in the lower eyelids so that their vision is not obscured when the eyes are closed. The tongue is broad and flat. The tail is fragile and easily shed but another is quickly regenerated. The colour pattern varies from stripes, cross-bars and spots to a uniform colour without markings. Unlike the agamids and chameleons, skinks cannot change colour. The young of some have bright blue or red tails. There are no femoral or preanal pores. The vast majority live on the surface while some have become rock dwellers. A few have developed arboreal tendencies.

Most skinks are good runners and some are expert burrowers. The terrestrial species are diurnal and the burrowers are largely crepuscular or nocturnal in habits. They subsist entirely on insects. Majority of skinks are oviparous, a few are viviparous. The vast majority of Indian skinks are less than 30 cm long. This is one of the largest families of lizards containing some 45 species.

### **Mabuya**

#### **Mabuyas, Genus**

The skinks of this genus are recognised by the well-developed pentadactyle limbs, the long, tapering tails, the movable eyelids, and a distinct ear-opening. In most of the species both the young and the adults tend to bear stripes although the striping may disappear with

age. These skinks are diurnal and primarily insectivorous. The genus includes both the live-bearers and the egg-layers. Thirteen species are recorded.

**Mabuya bibroni**

**Sand Skink**

This skink frequents the sea shore and is recognised by the transparent 'window' in the lower eyelid. It is olive-brown above and whitish below. The dorsal pattern consists of a light vertebral, a black dorso-lateral and sometimes a white stripe. Adults attain a total length of 115 mm. This species is restricted to the coastal belt in the east and is fairly common on the sea coast from Orissa to Kerala.

**Mabuya dissimilis**

**Striped Grass Skink**

This skink is light olive-brown above with three white stripes and greenish-white on the underside. The stripes on the back are margined with black spots that may often fuse into lines. A distinct white stripe runs through the posterior half of the upper lip and the flanks are spotted with white. Adults are about 150 mm in length. This skink inhabits the plains as well as the wet grasslands of northern India and is mainly reported from Kashmir, Punjab, Bihar, Madhya Pradesh, and Bengal. It is common in and around Ajmer, Rajasthan.

**Mabuya macularia**

**Bronze Grass Skink**

This skink is bronze above, uniform or spotted with black. The flanks in the young and males are dotted with rows of tiny white spots. The belly is white. In the breeding males the sides of the body and lips assume a vermilion hue. The colouration of this species is so variable that as many as four geographical forms are recognised. The most distinctive and typical form is found in the north-eastern India. This skink is found in the grasslands and cultivated fields almost throughout India. The snout to vent length ranges from 50 mm to 75 mm. The female lays 3-4 eggs.

**Mabuya carinata**

**Common Skink**

This is the commonest skink of India found in the plains and low hills all over India except the extreme northwest and east. The ground

colour is olive or bronze, with darker flanks. There is a prominent dorso-lateral stripe on each side from the head to base of the tail and usually a second white band starting from the upper lip to the groin. In the breeding season the flanks of the male turn scarlet on the sides while the belly remains yellow. Adults are about 290 mm in total length. This skink is found throughout the year except during the cold months. The female lays from 11 to 23 eggs in a small hole she has dug, or in a rotting log or under a rock.

**Mabuya multifasciata**  
Streaked Skink

This skink is brown above with black longitudinal spots or streaks. A pale dorso-lateral line is often present. The sides are darker, spotted with white. The belly is whitish. A breeding male has a large orange or rusty red blotch behind the arm which tends to cover the entire flank. Adults are over 300 mm in total length. This species is viviparous, producing 5-7 young. This Indo-chinese form is reported in India from Assam and the Nicobar Islands.

**Mabuya tytleri**  
Giant Andaman Mabuya,

This skink is easily the largest of all the Indian skinks attaining a record length of 450 mm of which the tail is nearly 300 mm long. It is brown or bronzy above with indistinct spots and greenish-white below. There is a dark lateral stripe in the young. This species is confined to the Andaman Islands. Practically nothing is known of the habits of this giant skink.

**Mabuya beddomii**  
Beddome's Mabuya

The young of this species are brown above with 4 dark brown streaks and a thick stripe of the same colour and white below. Adults have the similar pattern but the longitudinal stripes on the back are not very conspicuous and are indicated only as traces upon the neck and anterior region. Adults attain a total length of 170 mm. This is a hill species reported chiefly from the Western Ghats.

**Mabuya trivittata**  
Five-lined Mabuya

This skink is found in the plains and is mainly reported from

Maharashtra, Karnataka, and Tamil Nadu, with occasional records from Bihar and Bengal. It is dorsally greyish-brown with 5, broad, black-edged, white (yellow in life) bands that extend the length of the entire body and on to the tip of the tail. The belly is white. Adults reach a total length of 160 mm.

*Mabuya innotata* is bronzy olive above and dark brown on the sides. There are two light black-edged streaks along the sides. The underside is white, tinged with brown on the throat. Adults reach 155 mm in total length. It is found in Rajasthan and Madhya Pradesh.

*Mabuya rugifera* is black above with 5 or 7 greenish-white stripes which may sometimes break up into rows of dots down the back. The throat and chest are spotted with black, the remainder of the lower parts being greenish white. The maximum total length attained by this skink is nearly 200 mm. This Indo-Malayan species occurs in India only in the Nicobar Islands.

*Mabuya quadricarinata* is olive-brown in colour often with small black spots. There is a well-defined dark line along the sides. Adults are 140 mm in total length. This skink has been recorded from Cachar, Assam.

*Mabuya andamanensis* is usually brownish above with three vertebral series of black spots. There is a prominent dark band on the flank. The belly is whitish. The male in the breeding season is truly impressive as the sides of the head, neck, and belly become cinnabar red in colour, the anterior region and back being heavily tinged with red. Adults are about 255 mm in total length. This skink has been described by the famous herpetologist Malcolm Smith from a specimen obtained from the Andamans and it has been recently reported from the Great Nicobar Islands.

### **Genus Dasia**

#### **Arboreal Skinks**

Skinks of this genus are rare and recognised by the scaly lower eyelids, the well developed pentadactyle limba and the enlarged subdigital lamellae suggesting the arboreal habits of these lizards. Three species are known.

### **Dasia olivacea**

#### **Olivaceous Arboreal Skink**

This skink which is of Indo-chinese origin, is confined to Andamans

and Nicobars in India. The young are black above and green or yellowish below. The dorsum is marked with from 11-14 silvery or yellowish transverse bars which are rather irregularly arranged on the neck and the body. The head and body length of an adult is about 115 mm. This skink seems to prefer small islands for inhabitation and is arboreal and subarboreal in its habit. The female lays 4 to 6 eggs at a time,

***Dasia nicobarensis***  
Nicobar Arboreal Skink

This species is recently described and is known from the Car Nicobar, Nicobar Islands. It is closely allied to the preceding species but differs from it mainly in colouration and scalation of the body. This skink is deep brown above with a few scattered dark spots and a broad whitish stripe along the posterior portion of the flank and base of the tail. The head and body length is 95 mm and the tail is 120 mm long. The lower parts are green or yellowish.

***Dasia subcaerulea***  
Southern Arboreal Skink

This species resembles the olivaceous skink and represents the Indo-Chinese genus in South India, known from a single specimen which was obtained from Bodinaicknur, Madurai District, Tamil Nadu. It is light greyish above, speckled with black and white and bluish below. There are two black streaks down the neck. The head and body is 57 mm in length and the tail is nearly 60 mm long.

***Sphenomorphus***  
Slender Skinks, Genus

These are moderate sized skinks with a slender body and a long and fragile tail. The scales on the head are enlarged and those on the body are smooth, shiny, rounded, and overlapping. The eyelids are well developed and movable. Of the four species that occur in India three are found in the Eastern Himalayas and one in the southern India.

*Sphenomorphus indicum* is brown above with small brown or black spots arranged in longitudinal lines and white below. There is a conspicuous black stripe. The snout to vent length is about 90 mm,

This species has been recorded from Darjeeling, West Bengal and the adjacent territory in the Eastern Himalayas.

*Sphenomorphus maculatum* is bronzy or brown above with two vertebral series of small black spots and a light, indistinct series of golden-green spots. There is a black lateral band extending from the head to base of the tail. The lower parts are whitish. This skink is found in the Eastern Himalayas, Parasnath Hills, Bihar, Assam and Andaman and Nicobar Islands. The female lays 4 to 5 eggs at a time.

*Sphenomorphus dussumieri* is the commonest skink of the plains and hills of Kerala. The young are bronzy green above with a light dorso-lateral streak bordered with a dark brown stripe on its inner side. The throat and belly are whitish and the tail is yellowish brown. The tail of the male is bright red while that of the female is brownish. Adults lack the distinct pattern of the juveniles and are of uniform colour above with or without spots. Adults are under 115 mm in length. This skink occurs throughout the southwestern India.

*Sphenomorphus courcyanum* is a rare skink found only in the Khasi Hills, Meghalaya. It is brown above with darker spots and whitish on the lower side. A dark brown dorso-lateral band edged above by a light one is always present. It reaches 107 mm in total length.

### Scincella

#### Ground Skinks, Genus

The skinks of this genus are small burrowing forms recognised by moderately sized and pentadactyle limbs, and a long tail tapering to a point. Nine species occur in India.

#### *Scincella himalayanum*

##### Himalayan Ground Skink

As the common name suggests, this skink is a species of the mountainous regions. The colour is variable; it is usually brownish-livid above with small darker flecks and brown white below. A light dorsal stripe may be present in some individuals. This skink is viviparous, producing 3 to 4 young at a time. This is the commonest skink found in Kumaon District, Uttar Pradesh and seems to be abundant on the banks of the Nainital Lake and in Simla, Himachal Pradesh. It has also been recorded from Punjab and Kashmir. Two head and body length is 65 mm.

**Scincella iadacense**  
**Glacier Skink**

This definitely alpine lizard occurs in Ladakh and the area surrounding it in Kashmir. It is bronze or olive above with a heavy dark flecking and a dark brown dorso-lateral stripe along the upper half of the neck and along the side. The belly is bluish. The snout to vent length is 20 mm.

**Scincella sikkimense**  
**Sikkim Ground Skink**

This skink is bronze-brown above with small black spots or short stripes arranged longitudinally and light bluish or whitish below. There is a distinct dark brown dorso-lateral band. The snout to vent length is 53 mm. This species is common in Sikkim and the adjacent area in the Eastern Himalayas. It has also been recorded from Parasanath Hills, Bihar.

**Scincella travancoricum**  
**Travancore Ground Skink**

This species is mainly a hill form occurring in the Anaimalais, Palnis and Hills of South Kerala, Western Ghats. It is bronzy-brown or greyish-brown above with a well defined black or brown stripe running along the head, neck, and anterior parts of the flanks. The lower parts of the neck and sides of the body are flecked with dark brown and the belly is dark greyish. Adults attain a total length of 115 mm.

**Scincella palnicum**  
**Palnis Ground Skink**

This skink is restricted to the Palnis, Western Ghats and is similar to *travancoricum* from which it differs in having a more conspicuous dorso-lateral band on the body. The total length of this ground skink is 118 mm.

**Scincella beddomei**  
**Beddom's Ground Skink**

This species occurs in the Nilgiris and the Hills of South Kerala. Its colouration and size are same as that of *travancoricum*.

**Scincella laterimaculatum**  
Black-striped Ground Skink

This skink hardly attains a head and body length of 35 mm and is probably the smallest of the ground skinks in India. It is brown or bronze above and greyish below. There is a light edged blackish stripe followed by two fine black lines down the back. In the young the tail has a bluish tinge. This species is found in Tirunelveli District, Tamil Nadu, South Kerala and Nilgiris, Western Ghats.

**Scincella bilineatum**  
Nilgiris Ground Skink

This ground skink is found only in the Nilgiris, Western Ghats. The colouration is the same as in the preceding species except that the flanks are without black spots. In the young and the subadults the tail is violet in colour. This skink reaches a total length of 160 mm.

**Scincella macrotympanum**  
White-striped Andaman Ground Skink

This is a rare species, known from a solitary female which was picked up from a sandy beach in South Andamans. It is easily recognised by its large ear-opening and pattern. It is brown above with three longitudinal stripes—one vertebral and two lateral—and livid carneous tinged with orange on the lower belly and the tail. The head and body length is 45 mm and the tail is 50 mm long.

**Ablepharus**  
Lidless Skinks, Genus

These are slender, small sized skinks whose salient feature is the fusion of the eyelids to form a transparent cap over the eye. They are degenerate in several respects: the body is elongate, the head shields and digits are reduced in number, the ear-opening is closed, and the limbs are weakly developed. They are secretive and terrestrial in their habits. Of the two species contained in the genus, one species occurs in India.

**Ablepharus grayanus**  
Earless Dwarf Skink

This tiny skink is olive-green above and white below. There si

a light dorso-lateral stripe from the head to the tail. The tail is tinged with pink. It is 30 mm in head and body length and the tail is 55 mm long. This species has so far been recorded from Kutch (Gujarat), and Jaisalmer District, Rajasthan.

**Riopa**  
Garden Skinks, Genus

These are small, short-legged skinks recognised by well developed lower eyelids, of which the lower is either scaly or with a transparent disc, and a distinct and round ear-opening. They are usually found in damp, shady, and grassy areas. Six species occur in India.

**Riopa bowringi**  
Bowring's Garden Skink

This garden skink is found in the Andamans and Nicobar Islands. It is brown above with longitudinal lines of black dots and yellowish below. There is a black dorsolateral stripe. The lower eyelids is scaly. The head and body length is 55 mm. The female lays 2 to 4 eggs at a time.

**Riopa albopunctata**  
White-spotted Garden Skink

This skink is brown above, with longitudinal rows of dark spots and yellowish-white on the underside. The sides of neck and forebody are black, heavily flecked with white. The lower eyelid is scaly. This skink is about 60 mm in head and body length. It occurs in Andhra Pradesh, Madhya Pradesh, Bihar, Uttar Pradesh, Orissa, West Bengal, and Assam. One specimen was obtained from Kerala.

**Riopa punctata**  
Common Dotted Garden Skink

This skink is somewhat larger in size, with a rather stout body. The tail is round and thick at the base. The mid-region of the body is brassy with four to six rows of black dots. There is a broad cream-coloured stripe from tip of snout to tail. The belly is whitish. The lower eyelid is covered with an undivided transparent "window" This skink is common throughout India.

**Riopa guentheri**  
Gunther's Garden Skink

This skink is similar to *punctata* from which it differs in having a longer ear-opening and a more elongated body. The dorsum is covered with dark spots which in the young fuse to form longitudinal lines. A light dorso-lateral streak is prominent in the young. The ventral surface is yellowish-white, each scale dotted with dark brown. The lower eyelid is covered by a transparent disc. This species has been definitely recorded from Gujarat, Maharashtra, and Karnataka but its reported occurrence in Kerala is doubtful.

**Riopa lineata**  
Lined Garden Skink

This garden skink is rather elongate. The limbs are weak, each one with four digits only. It is golden-brown above, with a series of black spots which tend to form longitudinal lines, and lighter on the underside. The lower eyelid has an undivided transparent disc. It occurs from Pune, Maharashtra to North Kannada, Karnataka.

**Riopa pruthi**  
Pruthi's Garden Skink

This is a recently described species, reported from Chitteri Hills in Salem District, Tamil Nadu. It closely resembles the common garden skink but differs from it in certain morphological features. The lower eyelid is scaly. Pruthi's garden skink is deep brown above with black longitudinal lines and whitish below. The head above is spotted with dark and the tail is brownish. The head and body length is 67 mm and the tail is nearly 70 mm long.

**Ristella**  
Cat Skinks, Genus

These are hill species and the four species contained in the genus are endemic to the Western Ghats. They are easily recognised by their small size, scaly lower eyelids, distinct ear-openings and small but well developed limbs. The salient characteristic of these forest-dwelling skinks is that the hand has four digits while the foot has five digits and the claws are completely retractile into a large sheath.

**Ristella rurki**  
Rurk's Cat Skink

This skink is reddish-brown above with a small black spot or streak on each dorsal scale which tend to form longitudinal lines on the back. The lower surfaces are whitish, the area surrounding the throat and tail flecked with brown. It is about 47 mm in head and body length and the tail is 80 mm long. This cat skink occurs in the Anaimalais, palnis and Hills of South Kerala, Western Ghats.

**Ristella trauancorica**  
Travancore Cat Skink

This species is reddish-brown above and whitish below. There is a dark stripe along the flanks. It is 43 mm in head and body length and the tail is 60 mm long. It is usually found throughout the moist Jungles of Western Ghats and in the Tirunelveli Hills, Tamil Nadu in particular.

**Ristella quentheri**  
Gunther's Cat Skink

This cat skink is reddish-brown above with black spots on each dorsal scale which often unite to form longitudinal lines. The flanks have dark lines and are spotted with yellow. The throat is flecked with brown, the remainder of the underside being whitish. In the young there are three light black-edged streaks in the centre of the back and two more on the sides. This skink is 40 mm long in head and body length and the tail is about 60 mm long. It occurs in Madurai District, Tamil Nadu, and Tenmalais and Anaimalais, Western Ghats.

**Ristella beddomii**  
Beddome's Cat Skink

The ground colouration of this skink is similar to *guntheri* but the dark lines are inconspicuous while the yellow lines on the sides are more prominent. The forelimb bears a large dark spot. The light dorsal stripes of the young persist in the adult. The snout to vent length is 40 mm and the tail is nearly 60 mm long. This species is recorded from Tenmalais, North Kannada, Karnataka, and Parambikulam, Kerala.

**Eumeces****Mole Skinks, Genus**

These are small-sized secretive skinks with smooth and shiny scales. The limbs are well developed, with five toes. The eyelids are well developed, the lower one scaly and without a transparent "window". The ear-opening is distinct and deeply sunk. The young and the adults as well are often striped although the pattern may not persist as age advances. They are diurnal and insectivorous. The females are reported to guard the eggs till they hatch. Two species occur in India.

***Eumeces taeuiolatus*****Yellow-bellied Mole Skink**

This mole skink is very secretive in its habits and can be dug from rat holes and under rocks. It is dorsally pale brown and bright yellow on the underside. The young are marked with three black longitudinal stripes which tend to break up into spots with age. Adults are under 120 mm in head and body length and the tail is about 180 mm long. This species is confined to northwest India and is mainly reported from Kutch, Gujarat, Rajasthan, Punjab and Kashmir. Very little is on record about its breeding habits.

***Eumeces poonaensis*****Pune Mole Skink**

The dorsum and limbs of this skink are dark brown to deep bronze, with a lateral series of white spots arranged regularly and extending from head to anterior half of tail. The sides are marked with thick brown stripes and the belly is yellowish-white, the underside of tail being flecked with brown. The head and body length is 118 mm and the tail is 85 mm long. This species is known from a solitary female taken near Pune, Maharashtra.

**Ophiomorus****Sand Skinks, Genus**

These are small, snake-like skinks inhabiting the desert areas of northwest India. The structural modifications undergone by these lizards are entirely adopted for living in the sand. The body is elongate

and the limbs are greatly reduced in size. The nostril is slit-like and can be completely closed. The eye is small, the lower eyelid being covered with an undivided transparent disc. The lower jaw is counter sunk. These animals burrow so rapidly in loose sand that they are nicknamed "Sand Fish". They are said to burrow up to 30 cm. Very little is on record about the habits of this interesting skink. One species occurs in India.

**Ophiomorus tridactylus**  
Indian Sand-swimmer

This sand skink is cream coloured above with longitudinal series of brown spots and pearly white below. There is a brownish stripe on either side of the head. Although this lizard is common in the desert tracts of Punjab and Kutch (Gujarat), it is difficult to capture one as it literally dives into the sand on the slightest alarm. The head and body length is 105 mm and the tail is 80 mm long. This skink has recently been recorded from Rajasthan.

**Barkudia**  
Burrowing Skinks, Genus

This genus is named after the Island of its namesake in the Chilka Lake, Orissa where the first specimen of the genus was obtained. The skinks of this genus have special modifications to fit them for a burrowing mode of life. The body is much elongated and the limbs are absent. The snout is blunt and the eyes are tiny. A single species is known.

**Barkudia insularis**  
Barkudia Burrowing Skink

This skink is rather long with a slender, cylindrical body and a short tail. The head is small and dorso-ventrally flattened and the snout is wedge-shaped by means of which the lizard digs tunnels in loose earth with ease. The eyes are small but functional ; the upper eyelid is vestigial and the lower eyelid is scaly and movable. The ear-opening is minute. The head is covered with shields and the body with smooth scales. The tongue is long, slender, and bifid and is shot out at frequent intervals. The tail is cylindrical and rounded at the tip. The blunt snout and the rounded tip of this skink are the source of

its Oriya name, "Deemundia" which means double headed. Colouration is much variable ; it is usually glossy brown above with a black spot on each scale which fuse to form from 8 to 14 longitudinal rows down the back and along the tail. The belly is coloured creamy white. This skink burrows with great rapidity and disappears from sight in a trice if released on the ground. Adults are about 115 mm in head and body length and the tail is nearly 60 mm long. After a lapse of nearly 37 years since its discovery in 1927, this rare skink has been reported in 1950s from other localities like the Andhra University campus, Waltair, and Nandankannan Biological Park, Orissa. Apart from the meagre knowledge that it is oviparous, very little is on record about the breeding habits of this rare skink.

### **Sepsophis**

#### **Spotted Limbless Skinks, Genus**

This genus includes a single species of a rare, small-sized limbless skink, *Sepsophis punctatus*. The salient characteristics of this skink are its much elongated body with vestigial limbs and a scaly lower eyelid. The scales of the back, sides and the belly are of equal size, smooth and imbricate. The ear-opening is not distinct. The forelimbs are reduced to bud-like pointed processes and the hind limbs are indicated by a depression on each side of the vent. This skink is buff above with two prominent series of large black spots which run as lines about the middle of the back and become four lines towards the end of the tail. The sides are jet black and the belly is greyish, spotted with black. The head and body length is about 110 mm. This skink is known from three specimens obtained from Golconda Hills and Gorge Hills, Andhra.

## LACERTIDS Family Lacertidae

The lacertids are small to medium-sized lizards which live in the sandy or rocky country. They have scaly bodies, conical heads and well developed pentadactyle limbs with clawed digits. The body is cylindrical, and rather elongate, with a long, tapering tail. The top of the head is covered with symmetrical shields and the dorsal and ventral scales vary much in size and the ear opening is large and oval. Some of the lacertids which live and dig in the sand have a transparent disc in the middle of the lower eyelid, so that they can see while the eye itself is protected. The tongue is deeply forked. They are incapable of changing their colour. Femoral organs are present in both sexes.

All the lacertids live upon insects but sometimes devour larger prey that they can overcome. All over lacertids are egg-layers. Seven species occur in India. Long-tailed Grass Lacerta, *Takydromus sexlineatus khasiensis*, As the common name suggests, this lacertid is at home with ease in the grassy country where it has acquired a "grass-swimming" type of locomotion. It darts from stem to stem by holding the body well above the ground and using the unusually long tail. This lacertid is greenish-brown above with a light dorso-lateral stripe dotted above and below with black and another black stripe along the side of the head and flanks. The belly is greenish-white. The head and body is 52 mm in length and the tail is nearly 120 mm long. This is the only species representing the genus in India and is recorded from Khasi Hills, Meghalaya and Cachar, Assam.

### ***Acanthodactylus cantoris cantoris*** Indian Fringe-toed Sand Lizard

As its common name indicates, this lacertid is distinguished by its laterally fringed digits with projecting scales which form a comb-like fringe to help the lizard's movements across the loose sand. The dorsal scales are imbricate and keeled and those of the lower surfaces are smooth and juxtaposed. The adults are sandy or reddish-brown

above with pale longitudinal stripes and numerous black spots. The belly is whitish. The young are marked with six black and white longitudinal stripes and the underside of the tail is pink. Adults in the breeding season bear large blue-eyed spots near the limbs. Despite its common name the fringetoe lacertid is not limited to the areas of loose sand but is equally at home in the rocky deserts. It is mainly an inhabitant of the desert tracts of northwest India and is particularly abundant in Ferozepur, Ambala, and Hissar, Punjab and near Agra, U. P.

**Cabrita**  
Indian Lacertids, Genus

This genus is endemic to India and contains two species which are found only in the dry forests. The salient features of these lacertids is the presence of a large transparent disc in the centre of the eyelid which is movable.

**Cabrita leschenaulti**  
Leschenault's Cabrita

This lacertid is brownish or golden above with two black stripes and white below, the tail and hind limbs being reddish. It is a very agile creature, found commonly in the open jungle country. Adults are about 50 mm in head and body length and the tail is 100 mm long. This species ranges from Chota Nagpur, Bihar to the plains of North India and on to the hills of South India.

**Cabrita jerdoni**  
Jerdon's Cabrita

This species is similar to the preceding form in size and colouration but differs from it in minor anatomical details and pattern. The stripes on the dorsum are arranged laterally and bordered with a series of dark spots. The lips and throat are flecked with black. This lizard is found in northern and central India and is common in the dry jungles of South India.

**Ophisops**  
Snake-eyed Lacertids, Genus

As the common name suggests, the lacertids of this genus are

distinguished by fused eyelids which form a transparent disc over the eye as in snakes. Three species occur in India.

**Ophisops jerdoni**  
**Punjab Snake-eyed Lacertid**

This lacertid is coppery above with two gold and black bands along the sides and white on the underside. It is usually found under stones and rubbish and seems to be active only during the day. The head and body length is 45 mm and the tail is nearly 95 mm long. It has been mainly reported from northern and central India, with occasional records from western and southern India.

**Ophisops beddomei**  
**Beddome's Snake-eyed Lacertid**

This is rarer than the preceding species to which it is closely allied except for some anatomical details and the absence of lighter lateral band on the body. Adults are about 34 mm in snout to vent length, the tail being nearly 60 mm long. This species occurs both in the plains and hills and is said to be very common in the hilly tracts of Wynad, Kerala. It is also known from the plains of Karnataka and Maharashtra.

**Ophisops microlepis**  
**Kutch Snake-eyed Lacertid**

This lacertid is olive-greenish above with two stripes—one dorso-lateral and another on the flanks—and greenish white below. The stripes on the dorsum are very distinct in the young. The head and body is 65 mm in length and the tail is about 145 mm long. This lizard is so plentiful in the rocky and sandy country of Gujarat that it hardly escapes notice. Besides Kutch, this species is reported from Bihar, Ajmer, Rajasthan, and Manhy Pradesh.

**Eremias guttulata watsonana**  
**Desert Lacerta**

This species is a typical lacertid found in the desert which may be its permanent habitat, This lacertid resembles *Acanthodactylus* but differs from it in lacking digits fringed with pointed scales. The lower

eyelid has a large transparent disc and the ear-opening is as large as the eye. This lacertid is usually greyish or olivaceous above with numerous black-eyed white spots on the middorsum and two pairs of light dorso-lateral stripes. The flanks are spotted with white and black and there is a dark streak on the thigh. The belly is white or greyish white. The head and body length is 55 mm and the tail is 90 mm long.

## **WORM LIZARDS, Family Dibamidae**

These are worm-like lizards which are phylogenetically close to skinks. They lead a burrowing, subterranean life resulting body that is snake or worm-like. The skin is covered with cycloid, imbricate scales, without osteoderms. They are blind and devoid of any hearing apparatus. They lack the forelimbs and the hind limbs are either absent or reduced to small flaps. The tail is short and obtuse. The worm lizards are under 30 cm in total length.

The origin of these lowly reptiles is still a mystery. As might be expected of such secretive animals, very little is on record about their life history. One species is found in the Nicobar Islands.

### ***Dibamus novae-guineae* Nicobar Worm-Lizard**

This burrowing lizard appears as a slender worm covered with glassy scales. In keeping with the strictly burrowing mode of life, this lizard is blind and devoid of forelimbs. However, the males have flap-like hind legs but the females have none. The head is blunt, conical and smaller than the neck. There is a very large cap-like scale on the snout besides four smaller scales, two of which cover the eyes. The tail is short and cannot be detached. The worm-lizard is uniform purplish-brown above and paler on the lower parts. It is generally found among rotten logs or humus. It usually grows to 285 mm.

## **GLASS LIZARDS, Family Anaguidae**

**Glass lizards are long, slim-bodied legless lizards which are often mistaken for snakes. The body and tail are very much snake-like, but the head is that of a typical lizard and is proportionately large. The skin is covered with imbricate scales, set in ring-like fashion. There are a pair of grooves down each side of the body and small dermal long plates called osteoderms beneath the horny scales which give a rather hard and stiff aspect to these lizards. The tail is brittle and is usually more than twice as long as the body. It can be easily shed and reproduced. The application of the common name 'Glass Snakes' to these lizards is partly correct. The first half 'glass' is probably justified by the way the tail falls off and breaks into several bits in moment of alarm but the other half 'snake' is not apt because the movable eyelids and distinct external ear-opening of these animals will distinguish them from any snake. Glass lizards have a keen vision. They move like serpents but in a less graceful way. However, when chased they move rapidly, stopping every 1-2 m for a rest. They can clamber over rocks easily. They do not climb trees nor are they fond of water.**

**They spend most of their time lying under fallen leaves or burrows just beneath the surface where the soil is sandy and light. They emerge from their hiding places in the evening or at night in search of food which consists mostly of insects. They sometimes devour such large prey as mice, lizards, fledglings of birds and the eggs of snakes and birds. The live prey is shaken repeatedly or beaten against the ground until stunned and then is swallowed whole. The shell of eggs is cracked with the help of powerful jaws and the contents are lapped up by the flat forked tongue.**

**When caught, the glass lizards twist themselves around one's hand and arm and exude a foul-smelling fluid. They are timid in disposition and do not bite.**

**The females lay from five to seven eggs which are deposited in shallow depressions under rocks, logs or decaying vegetation. The female guards them till they hatch in about a month. It takes several**

years for the hatchlings to attain maturity. The glass snakes are possibly the longest lived among lizards, some records indicate that they live up to 60 years. One species occurs in India.

**Ophisaurus gracilis**

**Indian Glass Snake or Burmese Glass Lizard**

This species is the only representative of the family in India. It is found in the extreme northeastern India and the adjacent territory of Burma and is recently recorded from Simla, Himachal Pradesh. It is about 370 mm in length, the tail making up for 250 mm. The glass snake spends most of its time during day under logs and stones and emerges only after darkness sets in. It shams death when handled and does not bite. It is light or dark-brown above and pale brownish or yellowish on the lower surface. The dorsal pattern consists of a darker lateral band and scattered blue, black-edged spots. The female lays from 4 to 7 eggs.

## **MONITOR LIZARDS, Family Varanidae**

Monitors have an elongated head, a long neck and flattened body. The limbs are very strong and armed with sharp, curved claws. The head is very flexible and can be moved in all directions, a feature not possessed by any other reptile. The tongue is extremely long, slender and deeply forked like that of a snake's and can be withdrawn into a sheath at its base. As the monitor moves, the tongue is kept flicking in and out of the mouth to investigate the nearby objects. The eyes are very prominent and well developed, giving the monitors an alert appearance. The ear-opening is distinct. The head is covered with small scales and the body with minute juxtaposed scales and tubercles above and smooth, squarish shields below. The tail is rounded in terrestrial species and laterally compressed in aquatic and semi-aquatic species and is not shed easily.

Most monitors are uniform brown while others are grey or blackish in colour. The young are brightly coloured with distinct spots and bars.

Monitors are the largest and heaviest living lizards. They live mostly in the warmer parts of the world and are known by about 30 species. The genus *Varanus* contains all the known species which are all similar in several respects. Monitors are largely terrestrial but some are partial to marshy lands. Only one species inhabits the desert. Four species occur in India.

Despite their massive bodies monitors are surprisingly agile creatures. They can climb tall trees, swim deep rivers, run over the ground or dig a burrow with remarkable speed if pursued. It is a difficult task to extract a monitor lodged in its burrow or wedged in between rock-cliffs.

Monitors are carnivorous, eating a wide variety of animals as well as carrion. They seem to seek the prey by smell and sight. They eat fish, crabs, birds, eggs, rats, and even rotting flesh. All monitors are fond of eggs of birds and other animals. They are adept at cracking swallowed eggs and allowing the discharge of the contents smoothly

down the throat. The long, pointed and recurved teeth of a monitor are only used for gripping, not for crushing or chewing as is the case with other lizards. It, therefore, has to swallow prey whole, sometimes alive. The flesh of a large prey like a rat or a bird is first torn to pieces with teeth and claws and is then eaten.

Monitors are oviparous. The young are very secretive and are known as *bis-cobras* in north India although monitors lack a venom apparatus.

A monitor, if prevented from escaping, rises high on its legs, hisses loudly, sways its body and lashes its tail in readiness to defend itself. Besides delivering severe blows with its muscular tail, a monitor can also claw and bite. The safest course is to avoid a large monitor.

### **Varanus griseus** Desert Monitor

This is the only monitor which shows a decided preference for sandy soil. It is a robust lizard with a broad head and a narrow neck. The tail is rounded, a feature in keeping with the terrestrial habits of the reptile. It normally grows to 50 cm and is found in the desert regions of Pakistan and northwestern India. The overall colouration is pale greyish-yellow, with six or seven obscure darker transverse bands on body and the tail. It chiefly feeds upon insects, other lizards, snakes, birds, small rodents and eggs. It is a very secretive animal spending most of its time in burrows or crevices. The female lays from 10 to 20 eggs, buries them in the sand and guards them.

### **Varanus bengalensis** Common Indian Monitor

This is the monitor which is found throughout India both in the plains and hills. It usually lives in burrows, dense clefts of vegetation and crevices around *nullahs* and old buildings. The adult is olive above and yellowish below with black spots which are numerous on the throat. The young are dull orange to light brown with 9-12 yellow or cream cross-bars on body and alternating light and dark bands on tail. It grows to about 1.8 m. Though it is partial to the drier places, it is often found along the sea coast particularly in the neighbourhood of estuaries. The common monitor is diurnal in its habits and usually

emerges from its hiding place two hours after sunrise and remains active till midday. When pursued it usually escapes into the hollow of a tree or takes to water. It can swim with great ease by tucking in the legs on the sides and using the tail for propulsion. It is often accused of stealing eggs from bird nests and of being destructive to poultry. It hibernates from November through March and becomes active during and after the monsoon. The female lays about 25-30 eggs which are deposited in a burrow or ant's nest and covers them with leaves and debris before departing. This monitor is much hunted for its flesh and eggs which are a great delicacy.

### **Varanus flavescens** Yellow Monitor

The yellow monitor as its common name indicates is yellow in colour with reddish-brown and dirty yellow transverse bars. These bars are in evidence during the rainy season and are indistinct or altogether absent in the rest of the year. It is found mostly in the Gangetic plains ranging from Punjab through U.P., Bihar, and Orissa and is fairly common in parts of Bihar. It grows to 85 cm.

### **Varanus salvator** Water Monitor

As the common name indicates, this lizard is partial to water and marshy lands where it spends much of its time. It is dark brown or black above with yellow ocelli and yellowish below. Two black bands run along the flanks. The laterally compressed tail enables the animal to swim with ease. The water monitor is sometimes found far out at sea but is equally at home on land and trees. It grows 2.5 m and is second only to the Komodo Dragon—the world's largest living lizard—in size. Despite its size, the water monitor is a very alert and agile creature and runs very fast if chased. Besides the recorded food items of a monitor, this monitor feeds upon molluscs, tortoises, baby crocodiles, and snakes. It is particularly fond of eggs of other lizards and birds, devouring 8 to 10 at one sitting. The egg is skillfully gripped with the lips and swallowed whole without breaking the shells. The female lays from 15 to 30 eggs and deposits them in holes in river banks or in trees near water. This monitor is now confined to Orissa, Bengal and the Andaman and Nicobar Islands.

## GLOSSARY

<b>Arboreal</b>	:	Tree-dwelling.
<b>Bifid</b>	:	Forked.
<b>Bipedal</b>	:	Walking on two legs ; Holding back the forelimbs along the sides of the body when running.
<b>Carinate</b>	:	Keel-shaped.
<b>Casque</b>	:	Cephalic (head) appendage.
<b>Crepuscular</b>	:	Active at dusk and just before dawn.
<b>Cryptic</b>	:	Hidden.
<b>Cycloid scales</b>	:	Scales with evenly curved edges.
<b>Diurnal</b>	:	Active by day.
<b>Dorsal</b>	:	°Pertaining to the upper surface.
<b>Dorsum</b>	:	Upper surface or back.
<b>Endemic</b>	:	Restricted or indigenous to a particular area.
<b>Femoral pores</b>	:	Small perforations, secreting a wax-like material on the thigh in geckos, lacertids, and varanids.
<b>Fossorial</b>	:	Adapted for a burrowing mode of existence.
<b>Granules</b>	:	Small, rounded scales.
<b>Gular</b>	:	Of or pertaining to the throat.
<b>Habitat</b>	:	The type of environment in which an animal occurs.
<b>Habits</b>	:	Life-history and behaviour of an animal—its food and feeding habits and mode of reproduction.

<b>Imbricate</b>	‡	<b>Scales that overlap like shingles of a roof.</b>
<b>Inguinal</b>	:	<b>Of or pertaining to the groin,</b>
<b>Insectivorous</b>	:	<b>Insect-eating.</b>
<b>Isabelline</b>	:	<b>Light brown in colour.</b>
<b>Keel</b>	:	<b>A ridge on a scale.</b>
<b>Labial</b>	:	<b>Pertaining to the lip.</b>
<b>Lamellae</b>	:	<b>Scales under the fingers and toes of geckos, skinks, and lacertids.</b>
<b>Mucronate</b>	:	<b>Ending in a sharp point.</b>
<b>Nocturnal</b>	:	<b>Active at night.</b>
<b>Ocelli (Ocellus, singular)</b>	:	<b>Simple eye-like spots.</b>
<b>Omnivorous</b>	‡	<b>Eating both plant and animal matter.</b>
<b>Oviparous</b>	:	<b>Egg-laying.</b>
<b>Pentadactyle</b>	:	<b>Having five digits.</b>
<b>Phalanges</b>	‡	<b>Bones of the digits.</b>
<b>Prehensile</b>	:	<b>Able to grasp.</b>
<b>Primitive</b>	:	<b>Having changed little since early stages of evolution.</b>
<b>Range</b>	:	<b>Distribution of a species in nature.</b>
<b>Race</b>	:	<b>Subspecies.</b>
<b>Tarsal</b>	:	<b>Pertaining to the ankle.</b>
<b>Terrestrial</b>	‡	<b>Ground-dwelling.</b>
<b>Tuberculate</b>	:	<b>Covered with small, rounded bumps.</b>
<b>Tympanum</b>	:	<b>Ear-drum.</b>
<b>Ventral</b>	:	<b>Of or pertaining to the lower surface.</b>
<b>Vermiform</b>	:	<b>Worm-like.</b>
<b>Vestigial</b>	:	<b>Rudimentary</b>
<b>Viviparous</b>	‡	<b>Giving birth to live young.</b>
<b>Wattles</b>	:	<b>Fleshy appendages on the throat of a lizard.</b>

## CLASSIFICATION OF INDIAN LIZARDS

The classification adopted here follows broadly that of Smith ( 1935 ) as revised by recent workers.

Class	:	REPTILIA
Order	:	SQUAMATA
Suborder	:	SAURIA (Lacertilia)

### Geckos, Family Gekkonidae

<i>Stenodactylus orientalis</i> Blanford	<i>Dravidogecko anamallensis</i>
<i>Cyrtodactylus montium-salsorum</i>	( Gunther )
Annandale	<i>Hemidactylus maculatus</i>
<i>C. scaber</i> ( Heyden )	Dum. & Bibr.
<i>C. kachensis</i> Stoliczka	<i>H. triedrus</i> ( Daudin )
<i>C. fasciolatus</i> ( Blyth )	<i>H. subtriedrus</i> Jerdon
<i>C. khasiensis</i> ( Jerdon )	<i>H. brooki</i> Gray
<i>C. gubernatoris</i> Annandale	<i>H. prashadi</i> Smith
<i>C. nebulosus</i> Beddome	<i>H. albofasciatus</i> Daniel
<i>C. callegalensis</i> Beddome	<i>H. gracilis</i> Blanford
<i>C. stolizkai</i> Steindachner	<i>H. porbandarensis</i> Sharma
<i>C. madarensis</i> Sharma	<i>H. reticulatus</i> Beddome
<i>C. lawderanus</i> Stoliczka	<i>H. frenatus</i> Schlegel
<i>C. dekkansensis</i> Gunther	<i>H. leschenalti</i> Dum. & Bibr.
<i>C. albofasciatus</i> Boulenger	<i>H. flaviviridis</i> Ruppell
<i>C. jeyporensis</i> Beddome	<i>H. giganteus</i> Stoliczka
<i>Cnemaspis indica</i> ( Gray )	<i>H. bowringi</i> ( Gray )
<i>C. wynadensis</i> ( Beddome )	<i>H. garnoti</i> Dum. & Bibr.
<i>C. sisparensis</i> ( Theobald )	<i>Cosymbotus platyurus</i> (Schneider)
<i>C. ornata</i> ( Beddome )	<i>Gehyra mutilata</i> ( Wiegmann )
<i>C. beddomei</i> ( Theobald )	<i>Hemiphyllodactylus typus typus</i>
<i>C. mysoriensis</i> ( Jerdon )	Bleeker
<i>C. kandianus</i> ( Kelaart )	<i>H. t. auranticus</i> ( Beddome )
<i>C. goaensis</i> Sharma	<i>Gekko gekko</i> ( Linn )
<i>C. jerdoni</i> ( Theobald )	<i>G. smithi</i> Gray
<i>C. littoralis</i> ( Jerdon )	<i>Ptychozoon kuhli</i> Stejneger
<i>Calodactylodes aureus</i> (Beddome)	<i>Phelsuma andamanense</i> Blyth

*Teratolepis fasciata* ( Blyth )*Lophopholis scabriceps*

( Annandale )

*Eublepharis hardwickii* Gray*E. macularius* ( Blyth )**Agamids, Family Agamidae***Draco maculatus* ( Gray )*D. norvilli* Alcock*D. dussumieri* Dum & Bibr.*Sitana ponticeriana* Cuvier*Otocryptis beddomii* Boulenger*Ptyctolaemus gularis* ( Peters )*Goniocephalus subcristatus*

( Blyth )

*Mictopholis austeniana*

( Annandale )

*Oriocalotes paulus* Smith*Japalure tricarinata* ( Blyth )*J. planidorsata* Jerdon*J. major* ( Jerdon )*J. kumaoensis* ( Annandale )*J. andersoniana* Annandale*J. variegata* Gray*Salea horsfieldi* Gray*S. anamallyana* ( Beddome )*Calotes cristatellus* ( Kuhl )*C. jubatus* ( Dum. & Bibr. )*C. microlepis* Boulenger*C. versicolor* ( Daudin )*C. maria* Gray*C. jerdoni* Gunther*C. emma* Gray*C. mystaceus* Dum. & Bibr.*C. nemicola* Jerdon*C. calotes* ( Linn. )*C. grandisquamis* Gunther*C. andamanensis* Boulenger*C. rouxi* Dum. & Bibr.*C. elliotti* Gunther*C. danieli* Tiwari and Biswas*Pssammophilus dorsalis* ( Gray )*P. blanfordanus* ( Stoliczka )*Agama himalayana* ( Steindachner )*A. tuberculata* Hardwicke and Gray*A. agorensis* ( Stoliczka )*A. agilis* Cuvier*A. minor* Hardwicke and Gray*Phyrnocephalus theobaldi* Blyth*P. euptilopus* Alcock & Finn*P. laungwalansis* Sharma*Uromastix hardwickii* Gray**Chameleons, Family Chamaelenidae***Chameleo zeylanicus* Laurenti**Skinks, Family Scincidae***Mabuya bibroni* ( Gray )*M. dissimilis* ( Hallowell )*M. innotata* ( Blanford )*M. macularia* ( Blyth )*M. carinata* ( Schneider )*M. rugifera* ( Stoliczka )*M. quadricarinata* Boulenger*M. beddomii* ( Jerdon )*M. trivittata* ( Hardwicke & Gray )*Dasia olivacea* ( Gray )

<i>M. multifasciata</i> ( Kuhl )	<i>Ablepharus grayanus</i> ( Stoliczka )
<i>M. tytleni</i> ( Theobald )	<i>Riopa albopunctata</i> Gray
<i>M. andamanensis</i> Smith	<i>R. punctata</i> ( Gmelin )
<i>D. nicobarensis</i> Biswas & Sanyal	<i>R. guentheri</i> ( Peters )
<i>D. subcaerulea</i> ( Boulenger )	<i>R. lineata</i> ( Gray )
<i>Sphenomorphus indicum</i> ( Gray )	<i>R. bowringi</i> ( Gunther )
<i>S. maculatum</i> ( Blyth )	<i>R. goaensis</i> Sharma
<i>S. dussumieri</i> Dum. & Bibr.	<i>R. pruthi</i> Sharma
<i>S. courcyanum</i> Annandale	<i>Ristella rurki</i> Gary
<i>Scincella himlayanum</i> ( Gunther )	<i>R. travancorica</i> ( Beddome )
<i>S. ladacense</i> ( Gunther )	<i>R. guentheri</i> Boulenger
<i>S. sikkimense</i> ( Blyth )	<i>R. beddomii</i> Boulenger
<i>S. travancoricum</i> ( Beddome )	<i>Eumeces taeniolatus</i> ( Blyth )
<i>S. halnicum</i> ( Boettger )	<i>E. poonaensis</i> Sharma
<i>S. beddomei</i> ( Boulenger )	<i>Ophiomorus tridactylus</i> (Blyth )
<i>S. laterimaculatum</i> ( Boulenger )	<i>Barkudia insularis</i> Annandale
<i>S. bilineatum</i> ( Gray )	<i>Sepsophis punctatus</i> Beddome

**Worm Lizards, Family Dibamidae**

*Dibamus novae-guineae* Dum. & Bibr.

**Lacertids, Family Lacertidae**

<i>Takydromus sexlineatus khasiensis</i> Boulenger	<i>C. jerdoni</i> Beddome
<i>Acanthodactylus cantoris cantoris</i> Gunther	<i>Ophisops jerdoni</i> ( Blyth )
<i>Cabrita leschenaulti</i> ( Milne- Edwards )	<i>O. beddomei</i> ( Jerdon )
	<i>O. microlepis</i> Blanford
	<i>Enemias guttulata watsonana</i> ( Stoliczka )

**Glass Lizards, Family Anguidae**

*Ophisaurus gracilis* ( Gray )

**Monitor Lizards, Family Varanidae**

<i>Varanus griseus</i> ( Daudin )	<i>V. flavescens</i> ( Gray )
<i>V. bengaleusis</i> ( Schneider )	<i>V. salvator</i> ( Laurenti )

## VERNACULAR LIZARD NAMES

Few lizards have names in Indian languages. The list below comprises the vernacular names of some common Indian lizards.

1. INDIAN GARDEN LIZARD *Calotes versicolor*  
*Bengali* : Girgiti, *Gujarati* : Kakido, Kachundo ;  
*Hindi* : Girgit ; *Kannada* : Vothi, Vonthu ;  
*Malayalam* : Ohnthoo ; *Oriya* : Endua ; *Rajasthani* : Kirkanthia ;  
*Sindhi* : Shyee ; *Tamil* : Wona ; *Telugu* : Thonda.
2. FLYING DRAGON *Draco dussumieri*  
*Hindi* ; Udatha chipkali ; *Malayalam* : Parakkum wonthu ;  
*Tamil* : Parkkum wona.
3. FAN-THROATED LIZARD *Sitana ponticeriana*  
*Marathi* : Sargota ; *Tamil* : Veeseeri wona.
4. SPINY-TAILED LIZARD *Uromastix hardwicki*  
*Gujarati* : Sandno ; *Hindi* : Sanda ; *Punjabi* : Sonder.
5. INDIAN CHAMELEON *Chameleo zeylanicus*  
*Bengali* : Bahuroopi ; *Gujarati* : Sarado ; *Hindi* : Hara girgit ;  
*Kannada* : Hasuronthi ; *Malayalam* : Pachai ohnthu ;  
*Oriya* : Kausapa, Bahurup endua ; *Tamil* : Pachai wona ;  
*Telugu* : Oosarawilli.
6. HOUSE-GECKO *Hemidactylus sp.*  
*Bengali* : Tiktiki ; *Gujarati* : Garoli ; *Hindi* : Chipkali, Chiplee,  
Chuttee, Cheechak ; *Kannada* : Halli ; *Malayalam* : Palli ; *Marathi* :  
Pal ; *Oriya* : Jhitpiti ; *Tamil* : Palli ; *Telugu* : Balli.
7. COMMON INDIAN MONITOR *Varanus bengalensis*  
*Bengali* : Goh-sap ; *Gujarati* : Patla Gho ; *Hindi* : Gho ; *Kannada* :  
Udumbu ; *Malayalam* : Udumbu ; *Marathi* : Ghorpad ; *Oriya* :  
Godhi ; *Tamil* : Udumbu ; *Telugu* : Udumu.

8. COMMON SKINK

*Mabuya carinata*

*Gujarati* : Sani mashi ; Aroo-ni-mashi ; *Hindi* : Bhabani, Loten ;  
*Kannada* : Arani ; *Malayalam* : Arana ; *Marathi* : Sarpa chi mousi,  
Sapswulli ; *Tamil* : Aranai ; *Telugu* : Nallikalla pamu ( baby skink ).

9. INDIAN SAND SWIMMER

*Ophiomorus tridactylus*

Punjabi : Reg-mahi, Ret-machi.

10. GLASS LIZARD

*Ophisaurus gracilis*

*Khasi* ( Shillong area ) : Naingbaen.

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<i>jerdoni,</i>	60	<i>goaensis,</i>	13
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<i>Calodactylodes,</i>	13	<i>indica,</i>	11
<i>aureus,</i>	13	<i>kandianus,</i>	12
<i>Calotes,</i>	30	<i>littoralis,</i>	13
<i>andamanensis,</i>	34	<i>mysoriensis</i>	12
<i>calotes,</i>	33	<i>ornaia,</i>	11
<i>cratatellus,</i>	30	<i>sisparensis,</i>	11
<i>danieli,</i>	31	<i>wynadensis,</i>	11

<i>Cosymbotus platyurus</i>	19	<i>Gekko,</i>	20
<i>cyrtodactylas,</i>		<i>gecho,</i>	21
<i>albofasciatus,</i>	10	<i>smithi,</i>	21
<i>collegalensis,</i>	8	<i>Goniocephalus,</i>	28
<i>dekkanensis,</i>	9	<i>subcristatus,</i>	29
<i>fasciolatus,</i>	7	<i>Hemidactylus,</i>	14
<i>gubernatories,</i>	8	<i>albofasciatus,</i>	16
<i>jayporensis,</i>	10	<i>brooki,</i>	15
<i>kachensis,</i>	7	<i>bowringi,</i>	19
<i>lawderanus,</i>	9	<i>flaviviridis,</i>	18
<i>madarensis,</i>	9	<i>frenatus,</i>	17
<i>montium-salsorum,</i>	7	<i>garnoti,</i>	19
<i>nebulosus,</i>	8	<i>gracilis,</i>	17
<i>rebidius,</i>	8	<i>leschenaulti,</i>	17
<i>scaber,</i>	6	<i>maculatus,</i>	14
<i>stoliczkai,</i>	8	<i>prorbandarensis,</i>	16
<i>dasia,</i>	48	<i>prashadi,</i>	16
<i>nicobarensis,</i>	49	<i>subtriedrus,</i>	15
<i>olivacea,</i>	48	<i>triedrus,</i>	15
<i>subcaerulea,</i>	42	<i>Hemiphyllodactylus,</i>	20
<i>Dibamidae,</i>	63	<i>typus typus,</i>	20
<i>dibamus,</i>	63	<i>t. auranticus,</i>	20
<i>novae-guinae,</i>	63	<i>japalura,</i>	28
<i>Draco,</i>	25	<i>kumaoensis,</i>	28
<i>dussumieri,</i>	26	<i>Lacertidae.</i>	
<i>maculatus.</i>	26	<i>Lophopholis,</i>	23
<i>Dravidogecko,</i>		<i>scbriceps,</i>	23
<i>anamallensis,</i>		<i>Mabuya,</i>	45
<i>Eramias guttulata watsonana,</i>		<i>andamanensis,</i>	48
<i>Hublepharis,</i>	23	<i>beddomii,</i>	47
<i>hardwicki,</i>	23	<i>bibroni,</i>	46
<i>macularius,</i>	24	<i>carinata,</i>	46
<i>Eumeces,</i>	56	<i>dissimilia,</i>	46
<i>poonaensis,</i>	56	<i>innotata,</i>	48
<i>taeniolatus,</i>	56	<i>macularia,</i>	46
<i>Gehyra mutilata,</i>	19	<i>multifasciata</i>	47
		<i>rugifera,</i>	48

<i>trivittata</i> ,	47	<i>rukhi</i> ,	55
<i>tytleri</i> ,	47	<i>travancorica</i> ,	55
<i>quadricarinata</i> ,	48	<i>sales</i> ,	29
<i>Mictopholis</i> ,	29	<i>anamallayana</i>	30
<i>austeniana</i> ,		<i>scincella</i> ,	50
<i>ophiomorus tridactylus</i> ,		<i>beddomi</i> ,	51
<i>Ophisops</i> ,	60	<i>bilineatum</i> ,	52
<i>beddomei</i> ,	61	<i>himalayanum</i> ,	50
<i>jerdoni</i> ,	61	<i>ladacense</i> ,	51
<i>microlepis</i> ,	61	<i>laterimaculatum</i> ,	52
<i>ophisaurus gracilis</i> ,	65	<i>palnicum</i> .	51
<i>Oriocaloies paulus</i> ,	28	<i>sikkimense</i> ,	51
<i>Otocryptis</i> ,		<i>travancoricum</i> .	52
<i>beddomii</i> ,	27	<i>scincidae</i> ,	72
<i>jerdoni</i> ,	61	<i>sitana</i> ,	27
<i>microtepis</i> ,	61	<i>ponticeriana</i> ,	27
<i>Phelsuma andamanense</i> ,	22	<i>Sepsophis punctatus</i>	58
<i>Phrynocephalus</i>	38	<i>Sphenomorphus</i>	49
<i>euptilopus</i> ,	39	<i>courcyanum</i>	50
<i>laungwalensis</i> ,	39	<i>dussumieri</i>	50
<i>theobaldi</i> ,	39	<i>indicum indicum</i>	49
<i>Ptychozoon kuhli</i> ,	21	<i>maculatum</i> ,	50
<i>Ptyctoluemus gularia</i> ,	28	<i>Stenodacylus orientalis</i> .	6
<i>Riopa</i> ,	53	<i>Takydromus sexlineatus</i> ,	
<i>albopunctata</i> ,	53	<i>khasiensis</i> ,	
<i>bowingi</i> ,	53	<i>Teratolepis fasciata</i> ,	22
<i>goaensis</i> ,		<i>Uromastix</i> ,	40
<i>guentheri</i> ,	54	<i>hardwickii</i> ,	40
<i>Lineata</i> ,	54	<i>Varanidae</i> ,	65
<i>Pruthi</i> ,	54	<i>varanus</i> ,	67
<i>punctata</i> ,	53	<i>bengalensis</i> ,	67
<i>Ristella</i> ,	54	<i>flavescens</i> ,	68
<i>beddommi</i> ,	55	<i>griseus</i> .	67
<i>guentheri</i> ,	55	<i>salvator</i> ,	68

# **Figures**





Fig 1  
Foot of Rock-gecko.

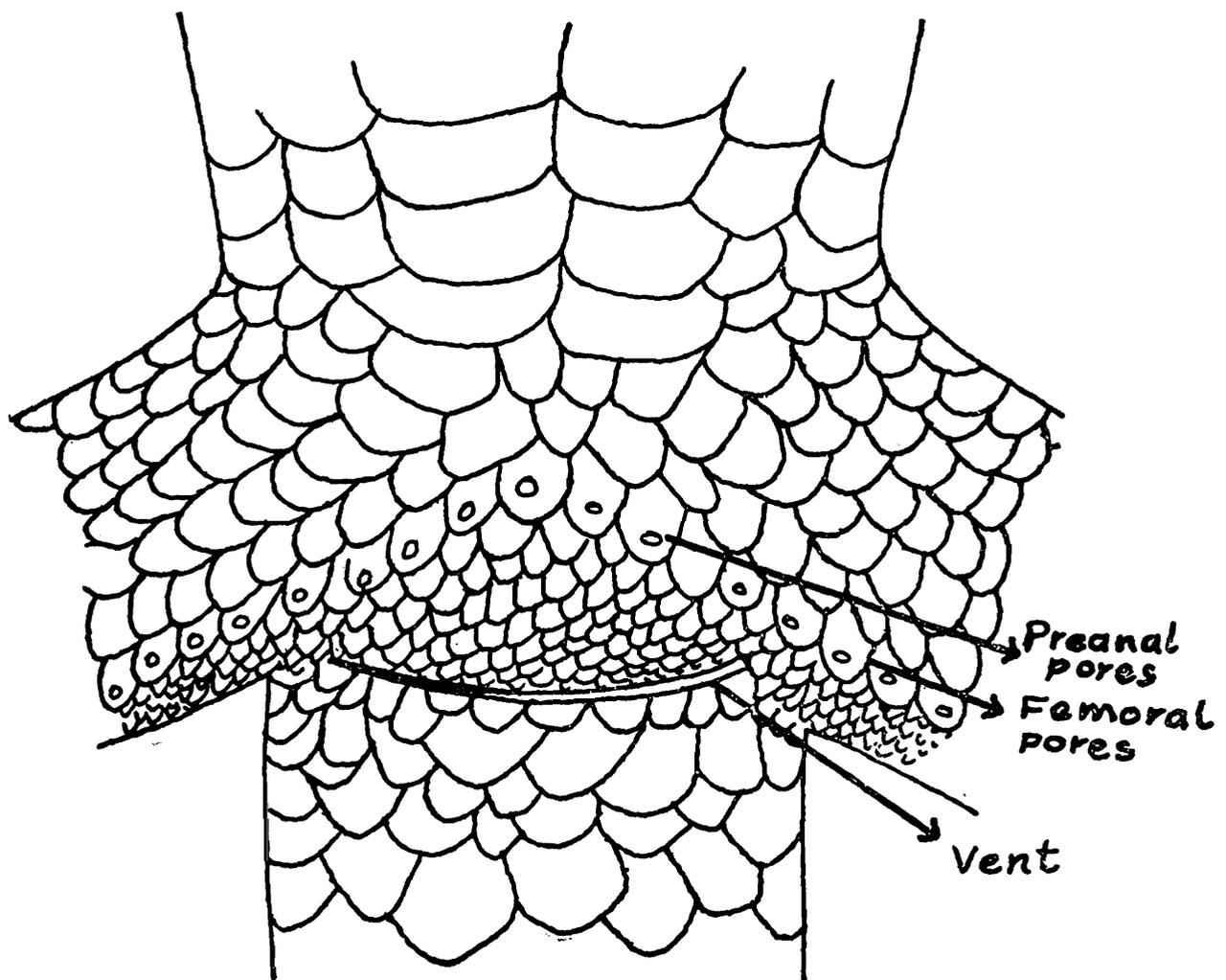


Fig 2

Inguinal region of a gecko showing femoral and preanal pores.

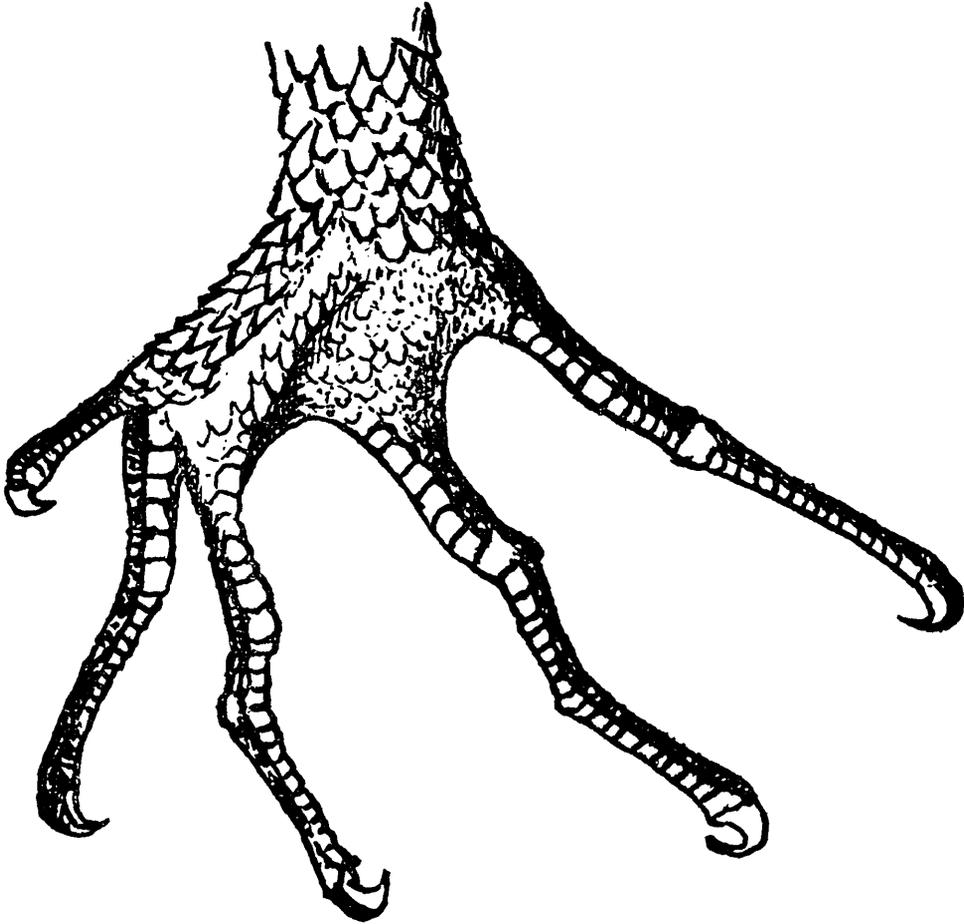


Fig 3

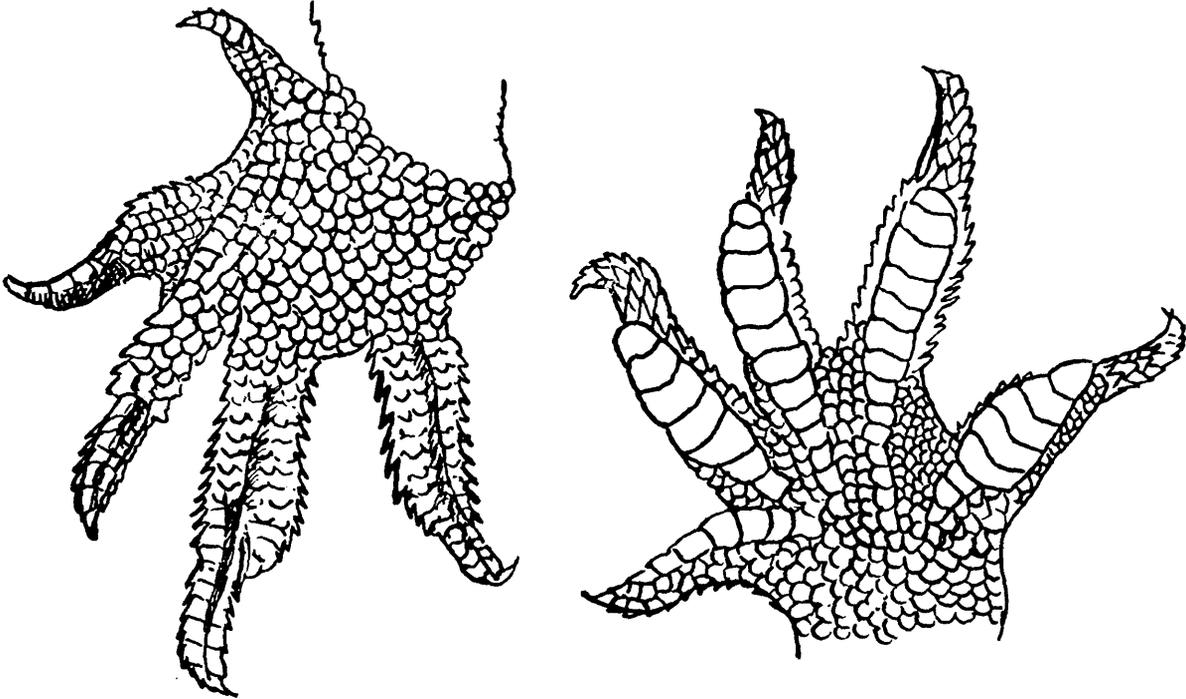


Fig. 4

- 3. Foot of Dwarf Gecko.
- 4. Foot of *Dravidogecko*. A. Upper, and B. Lower Surface.

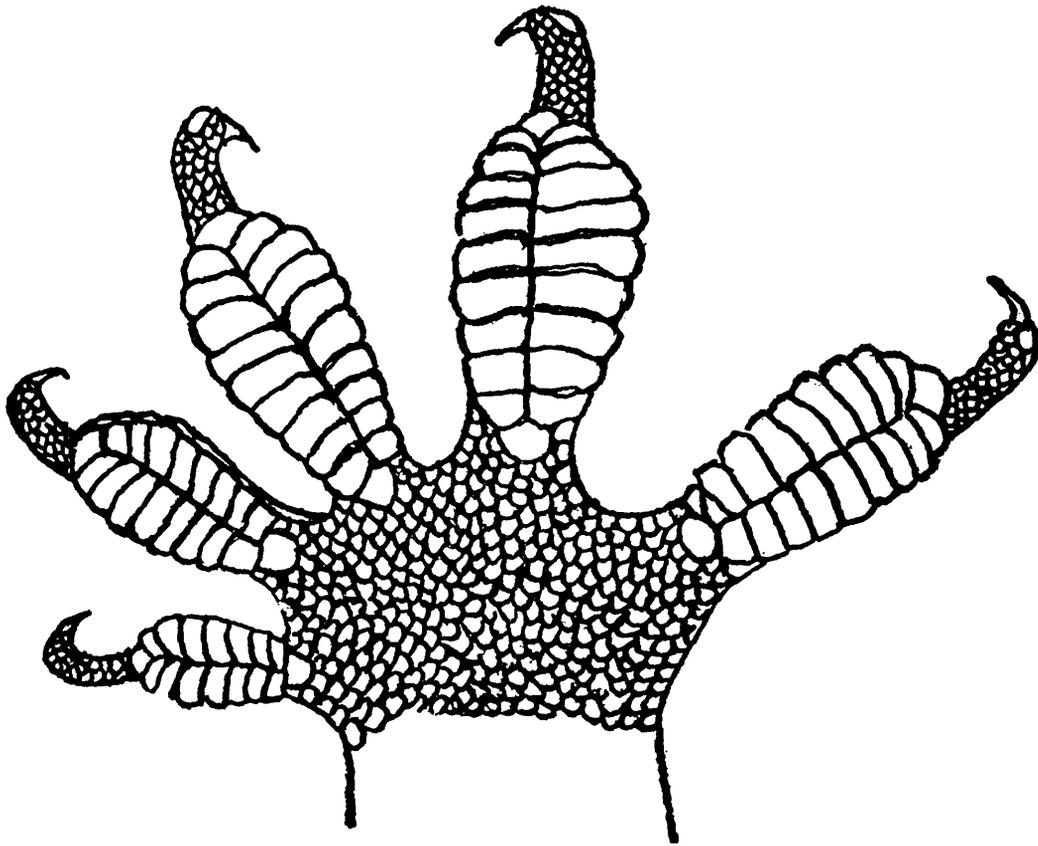


Fig. 5

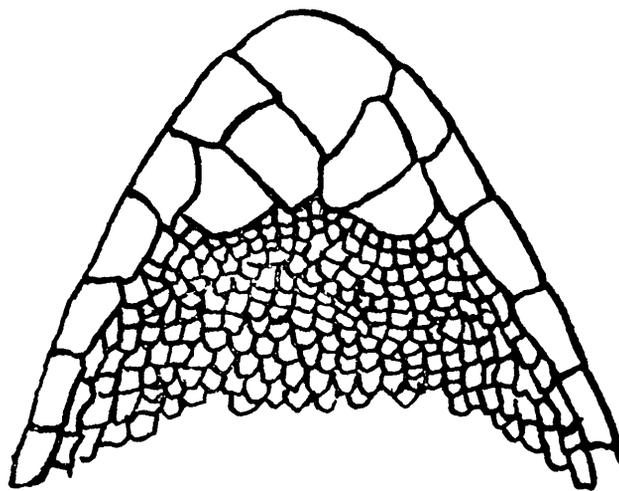


Fig. 6

5. Lower aspect of a House-gecko showing the clinging pads.
6. Chin Shields of a House-gecko.

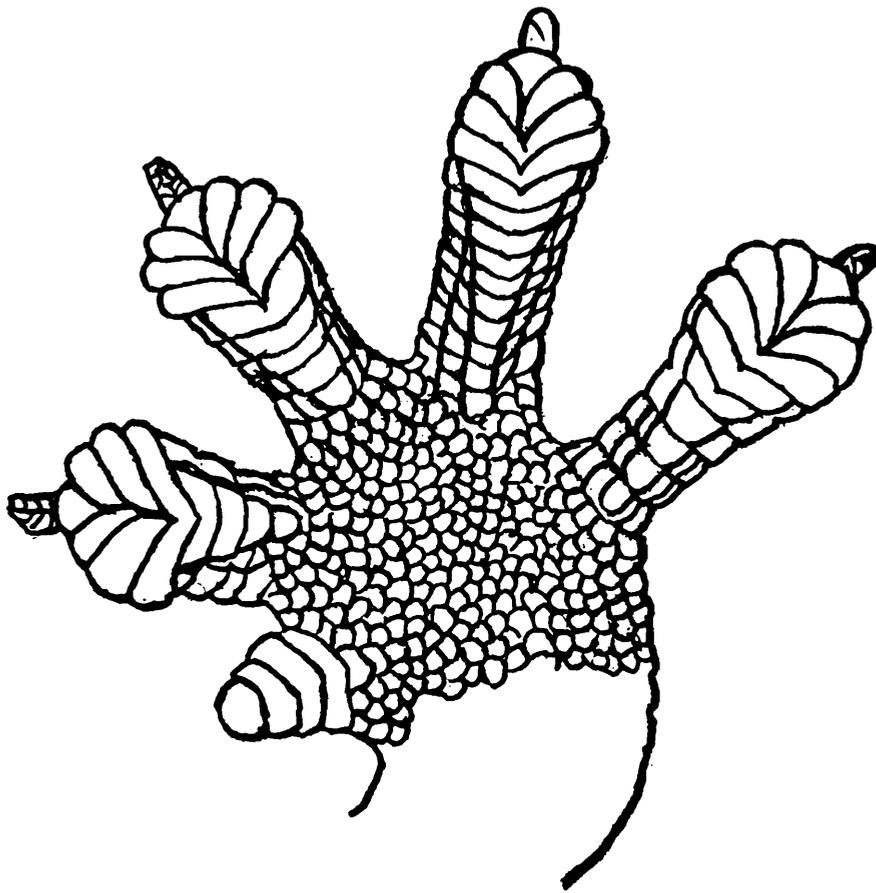


Fig. 7

Lower surface of foot of *Hemiphyllodactylus*



Fig. 8

Foot of the Fan—throated Lizard (*Sitana*)

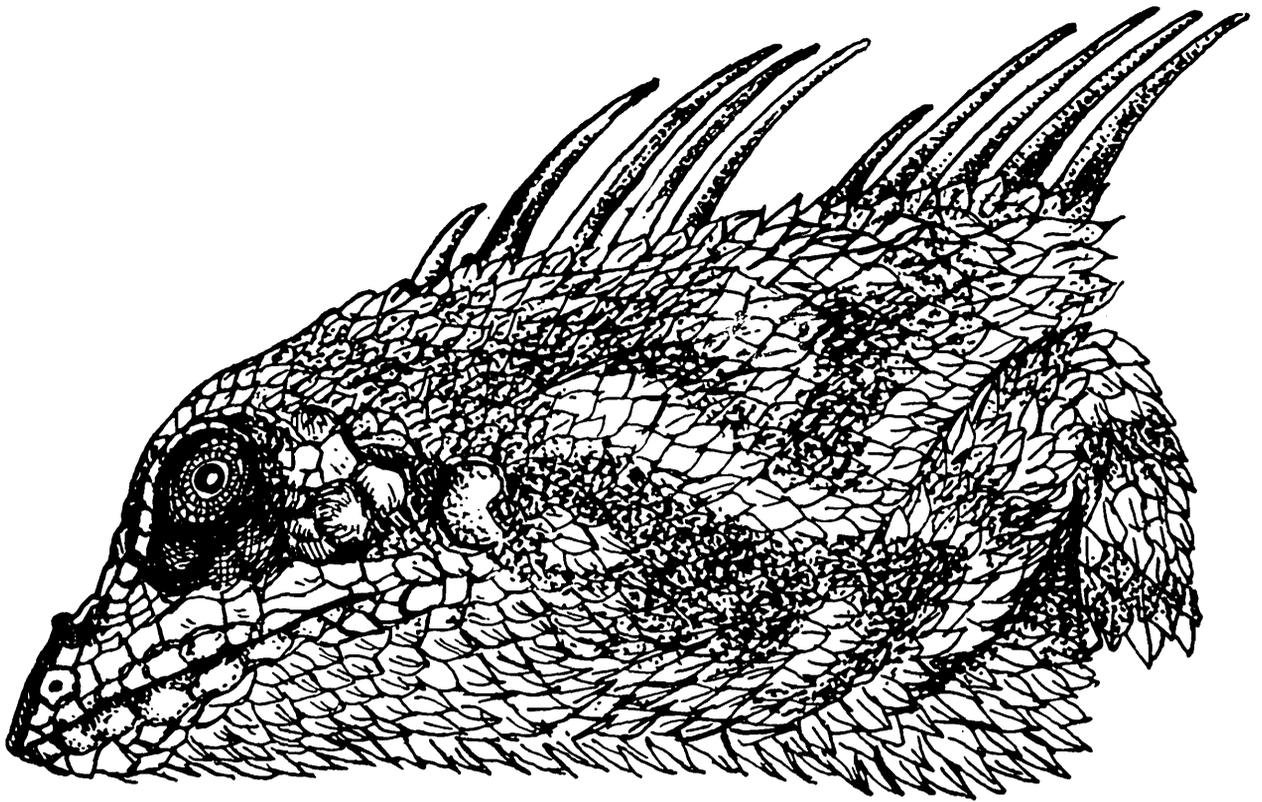


Fig. 9



Fig. 10

- 9. Head of Nilgiri Salea
- 10. Hand of Chameleon.

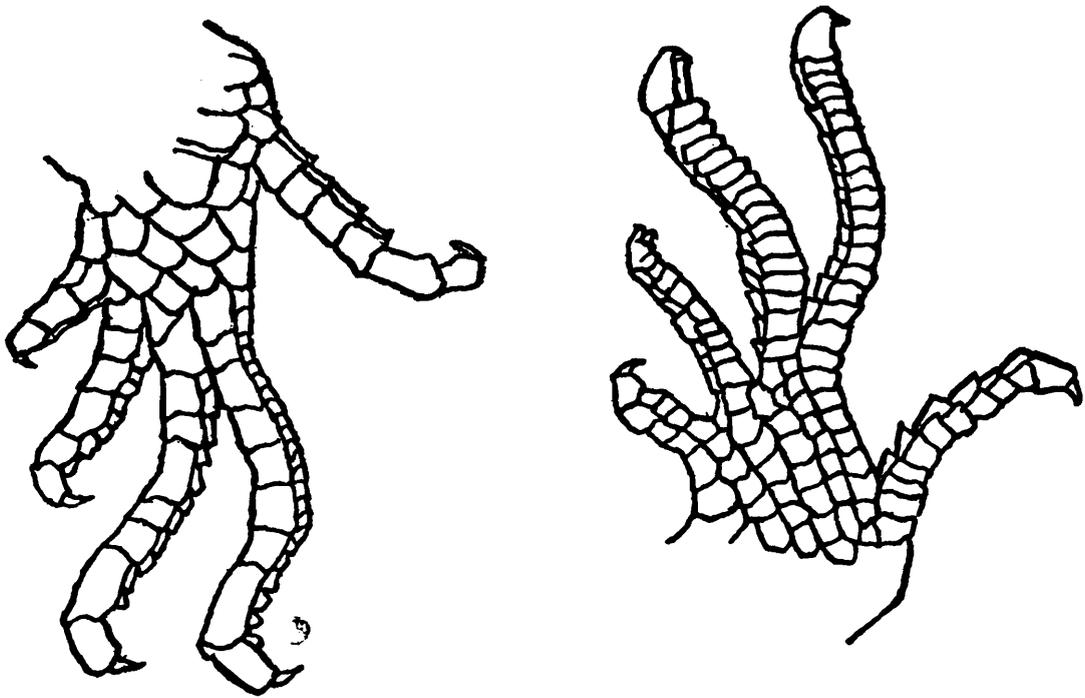


Fig. 11

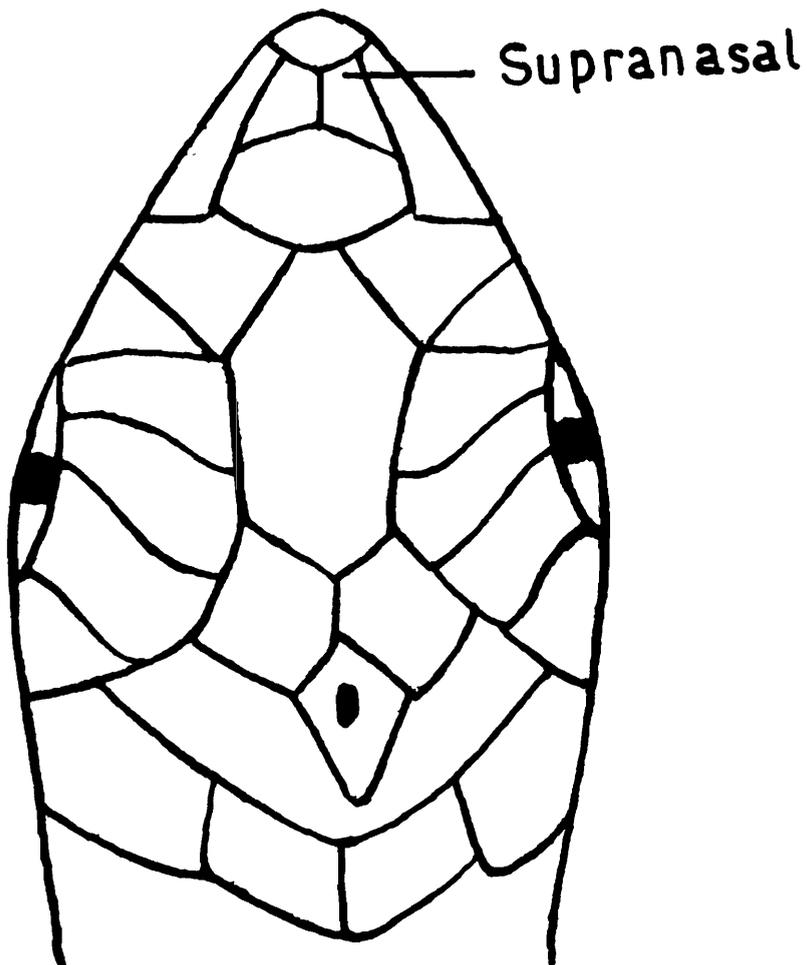


Fig. 12

11. Foot of a Cat Skink. A. Upper, and B. Lower Surface.  
 12. Dorsal view of the head of a Garden Skink

**P L A T E S**



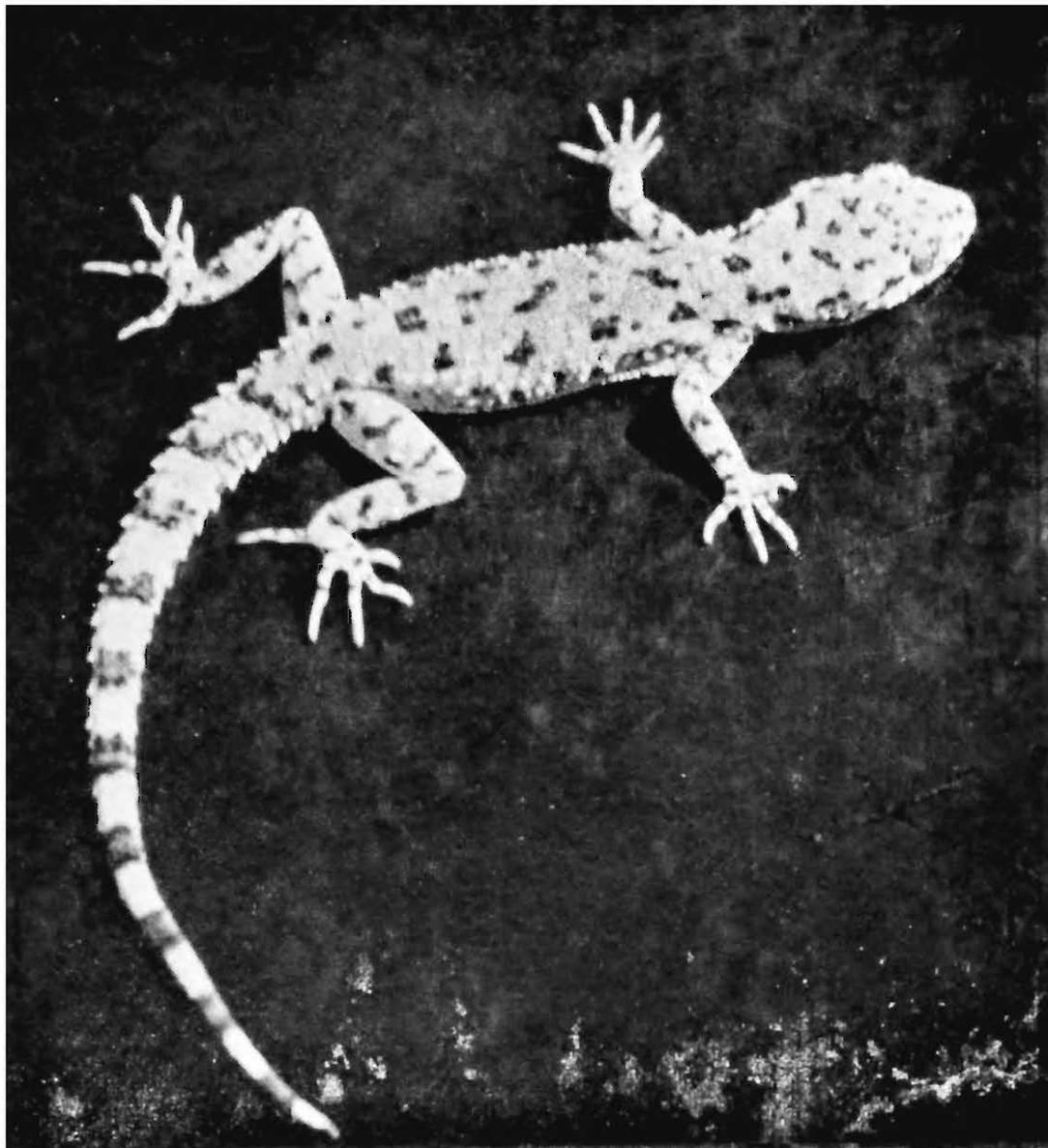


PLATE : 1 A. Keelbed Rock Gecko *Cyrtodactylus scaber*

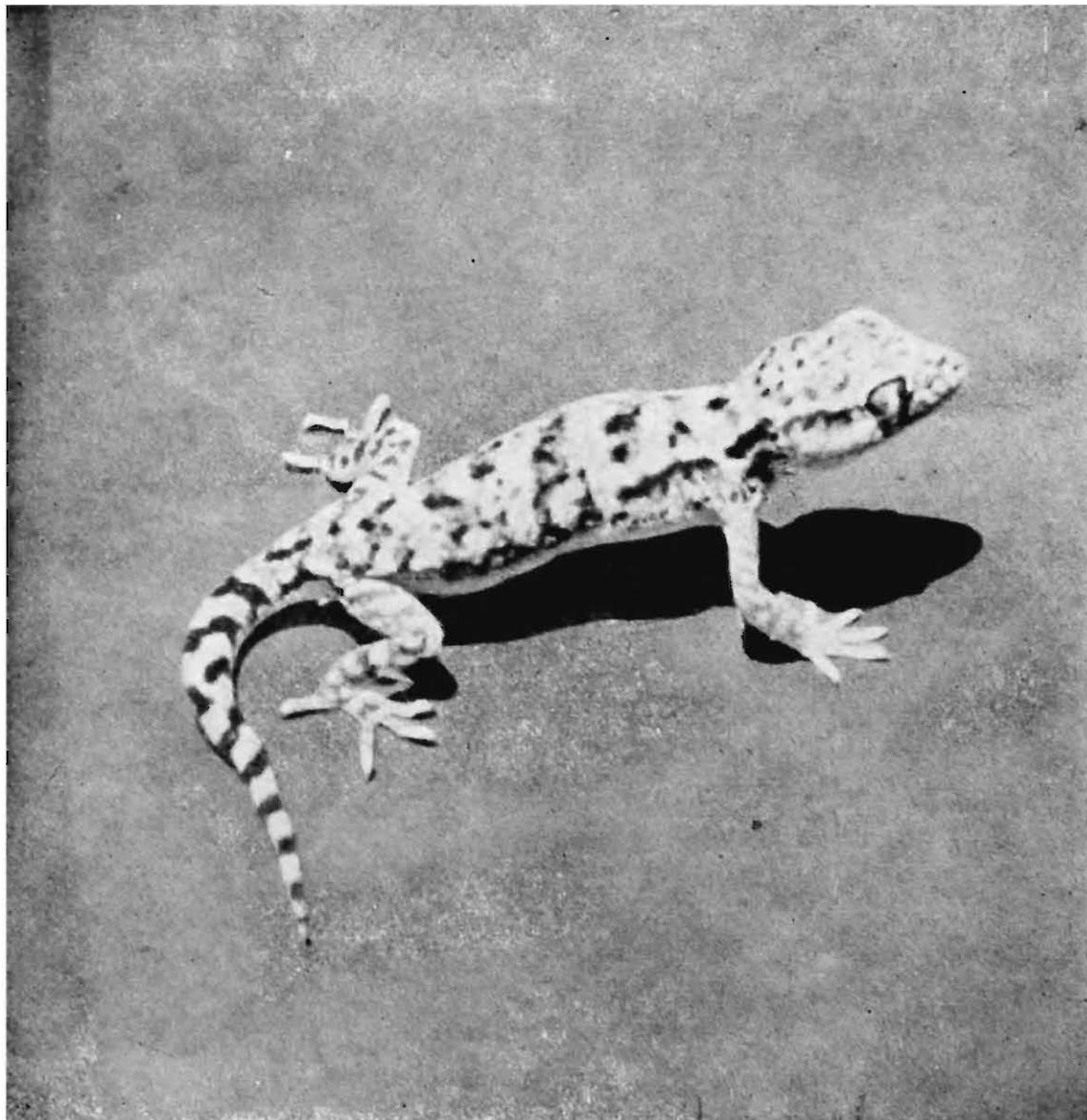
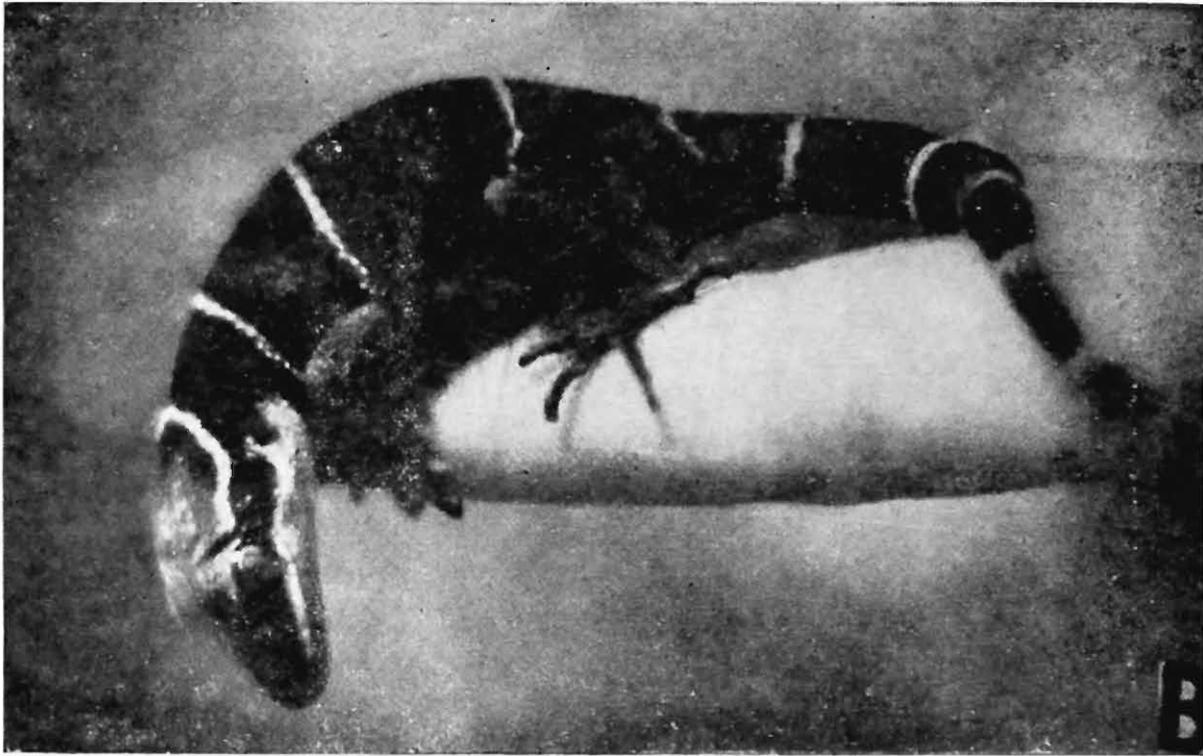


PLATE : 1 B, Deccan Rock Gecko *Cyrtodactylus dekkanensis*

PLATE : 1 C, Sind Sand Gecko *Stenodactylus orientalis*

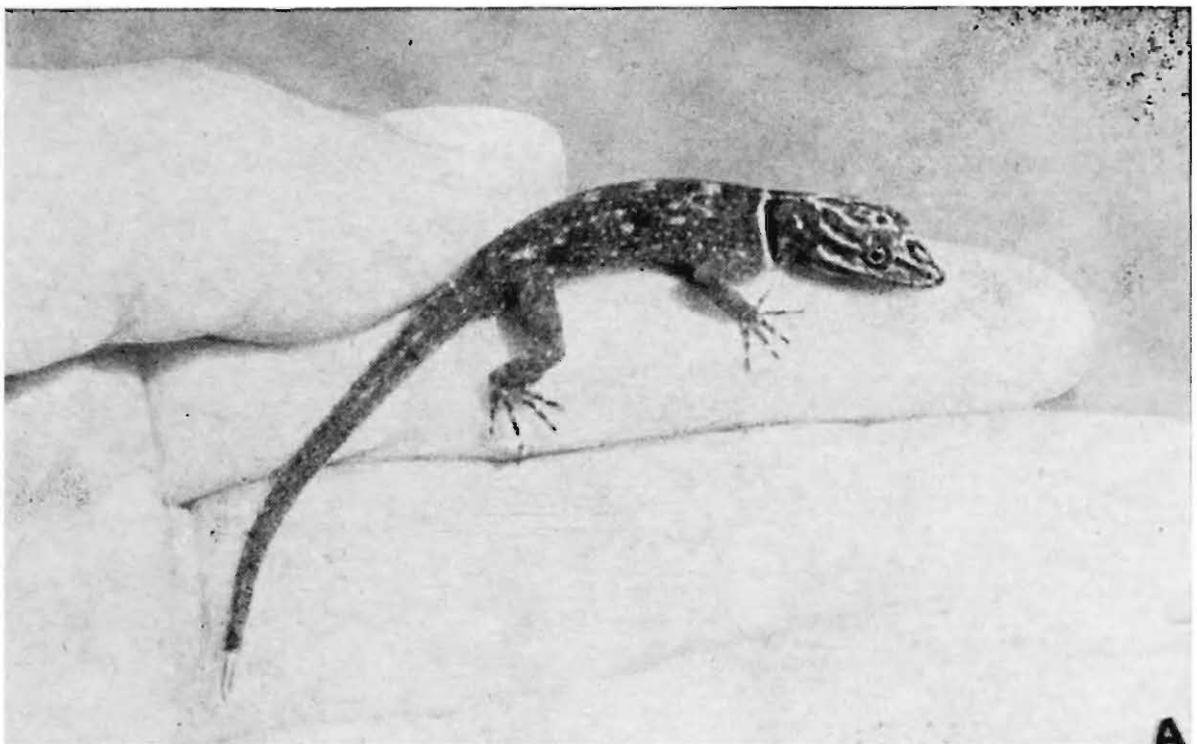


PLATE : 1D, Blotched Gecko *Hemidactylus triedrus*

PLATE : 2 A, Ornate Dwarf Gecko *Cnemaspis ornata*

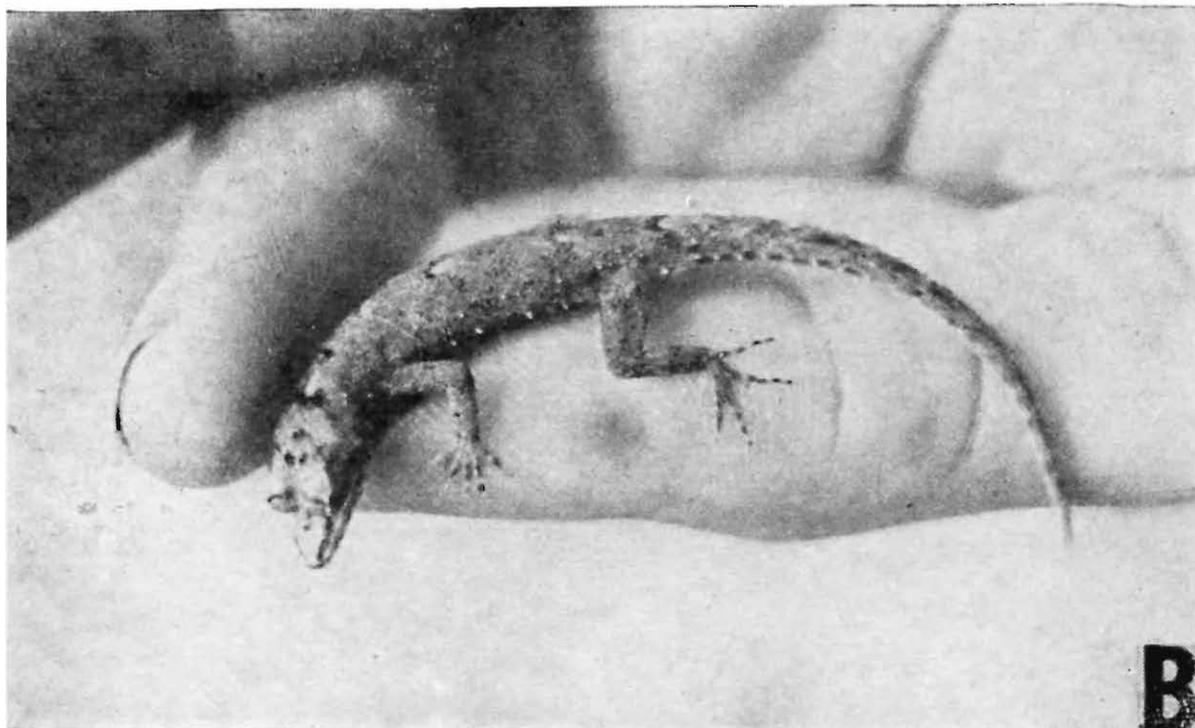


PLATE : 2 B, Jerdon's Dwarf Gecko *Cnemaspis Jerdoni*

PLATE : 3 A, Bark Gecko *Hemidactylus Leschenaulti*.



PLATE : 3B, Giant Gecko *Hemidactylus giganteus*

PLATE : 4A, Cat-eyed Gecko (*juvenile*) *Eublepharis macularius*

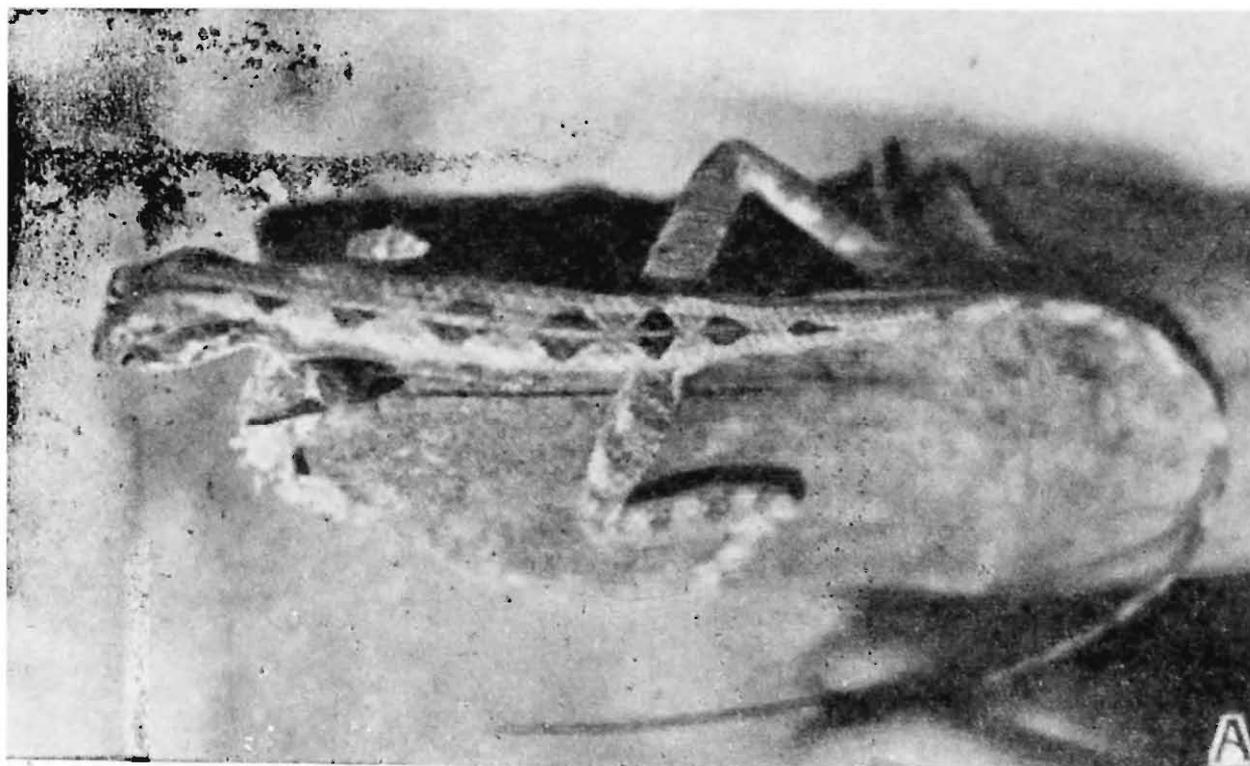
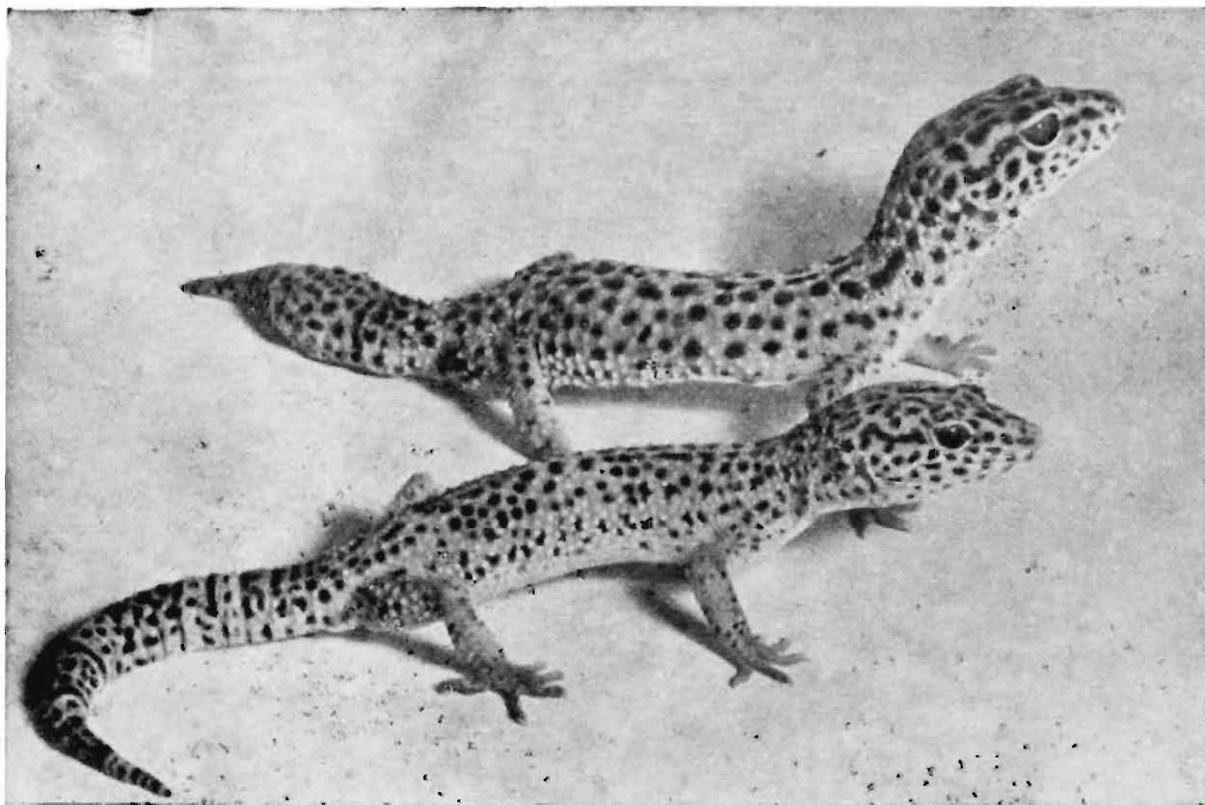


PLATE : 5, Cat-eyed Gecko-Adult

PLATE : 6A, Pondicherry Fan-throated Lizard *Sitana Pontieeriana*

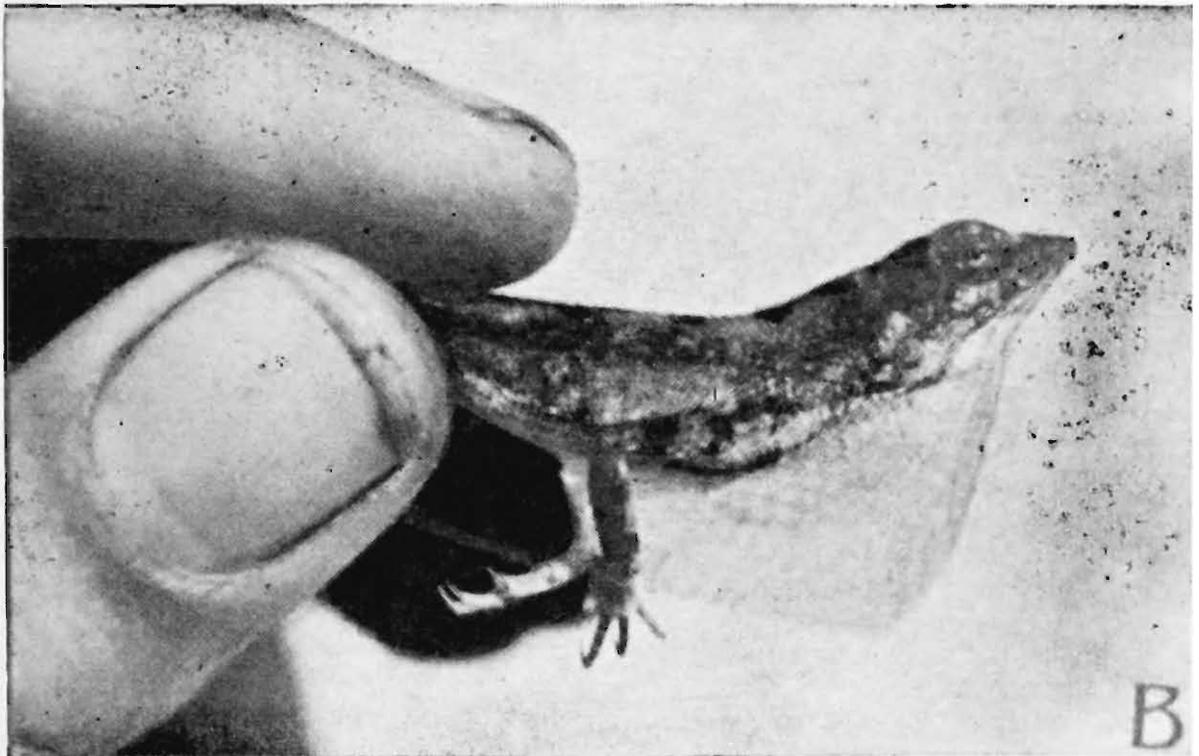
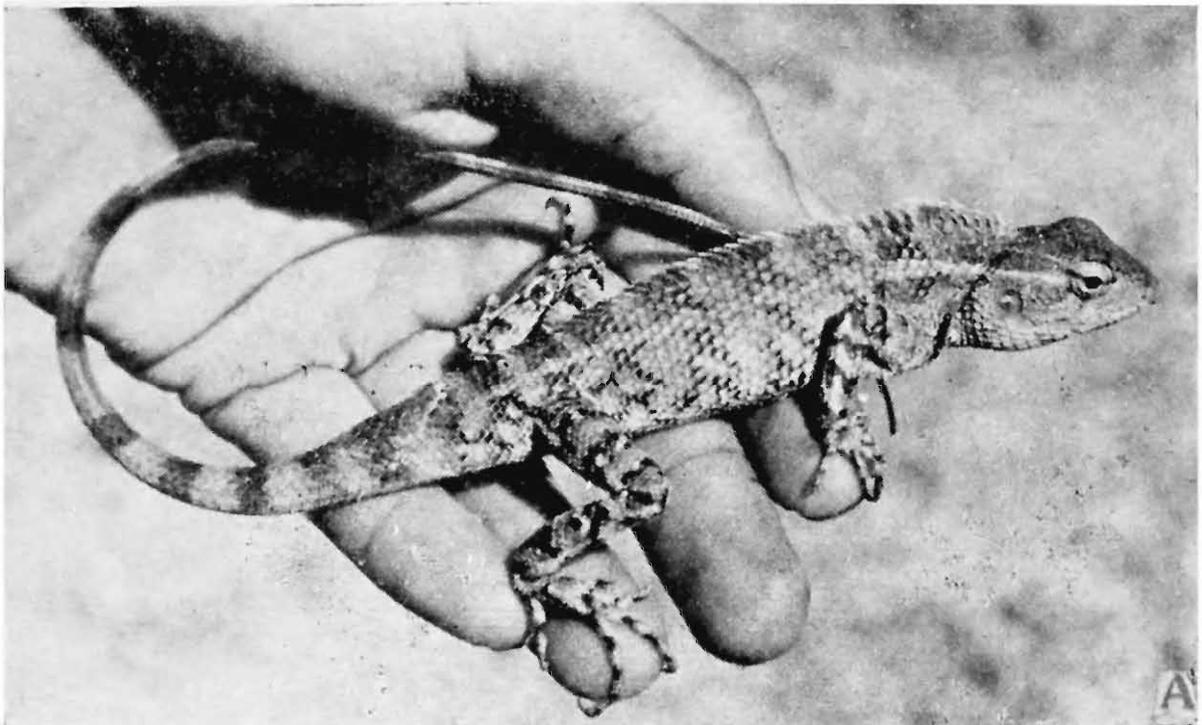


PLATE : 6 B, The throat-fan of *Sitana* on display



PLATE : 7A, Anaimalais Salea *Salea anamallayana*



**PLATE : 7 B, Nilgiri Salea *Salea horsfieldi***

**PLATE : 8 A, Indian Garden Lizard *Calotes versicolor***



PLATE : 8B, Green Calotes *Calotes Calotes*



PLATE : 9, Elliot's Dwarf Calotes *Calotes ellioti*

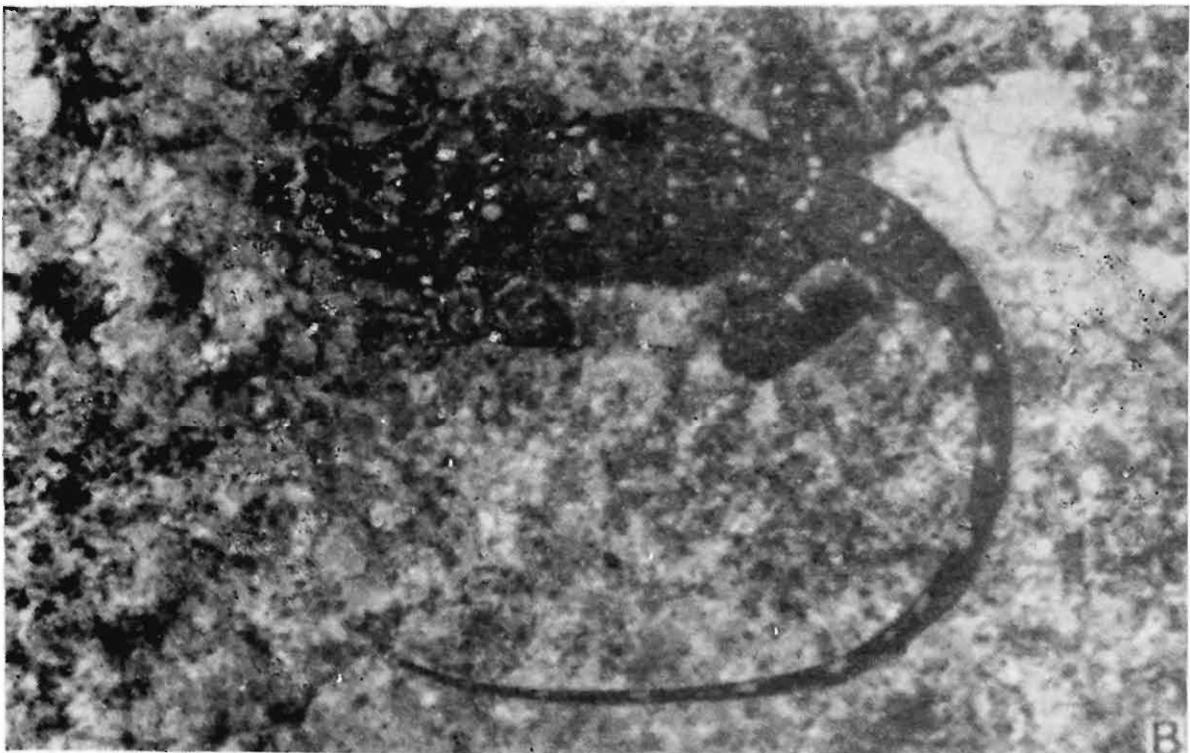
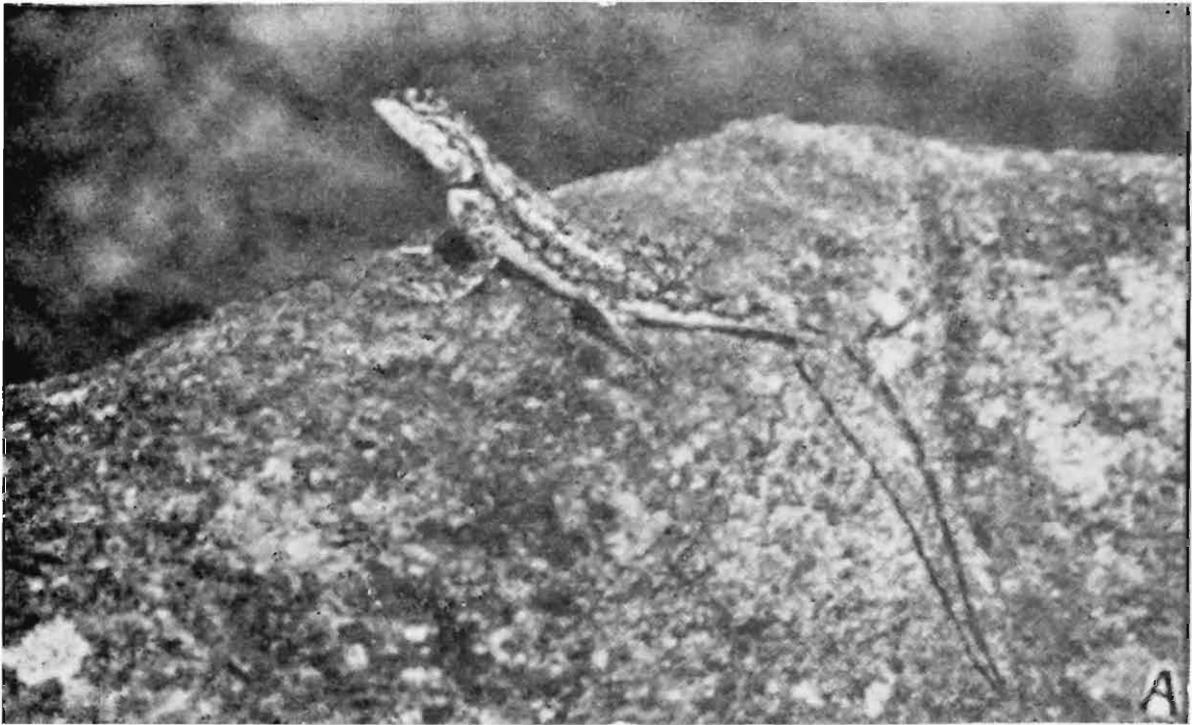


PLATE : 10 A, South Indian Rock Lizard juvenile *Psammophilus dorsalis*

PLATE : 10 B, Adult Rock Lizard



PLATE : 10 C, Indian Sping-tailed Lizard *Uromastix hardwickii*

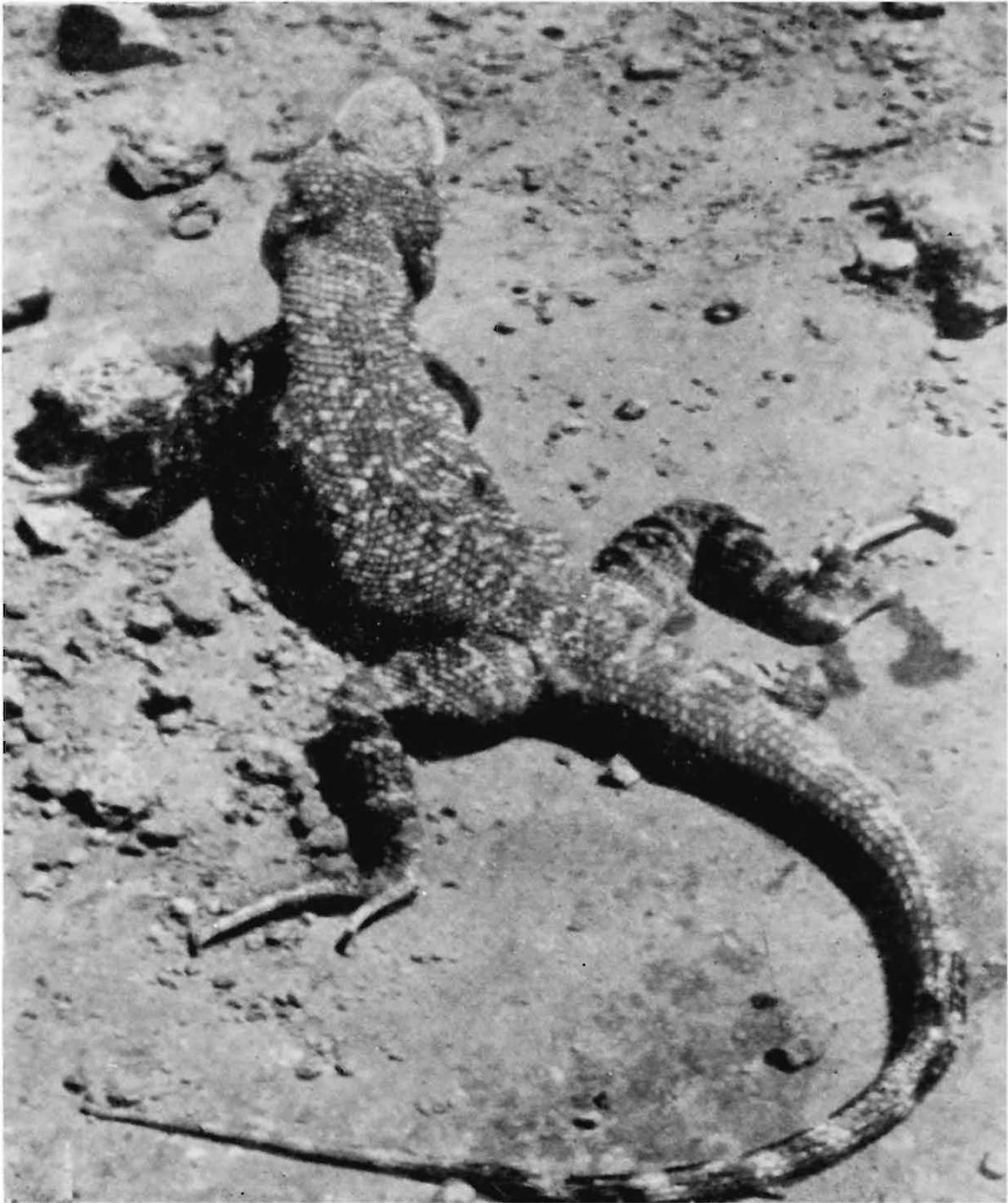


PLATE 10 D, Brilliant Rock Agama *Agama agilis*

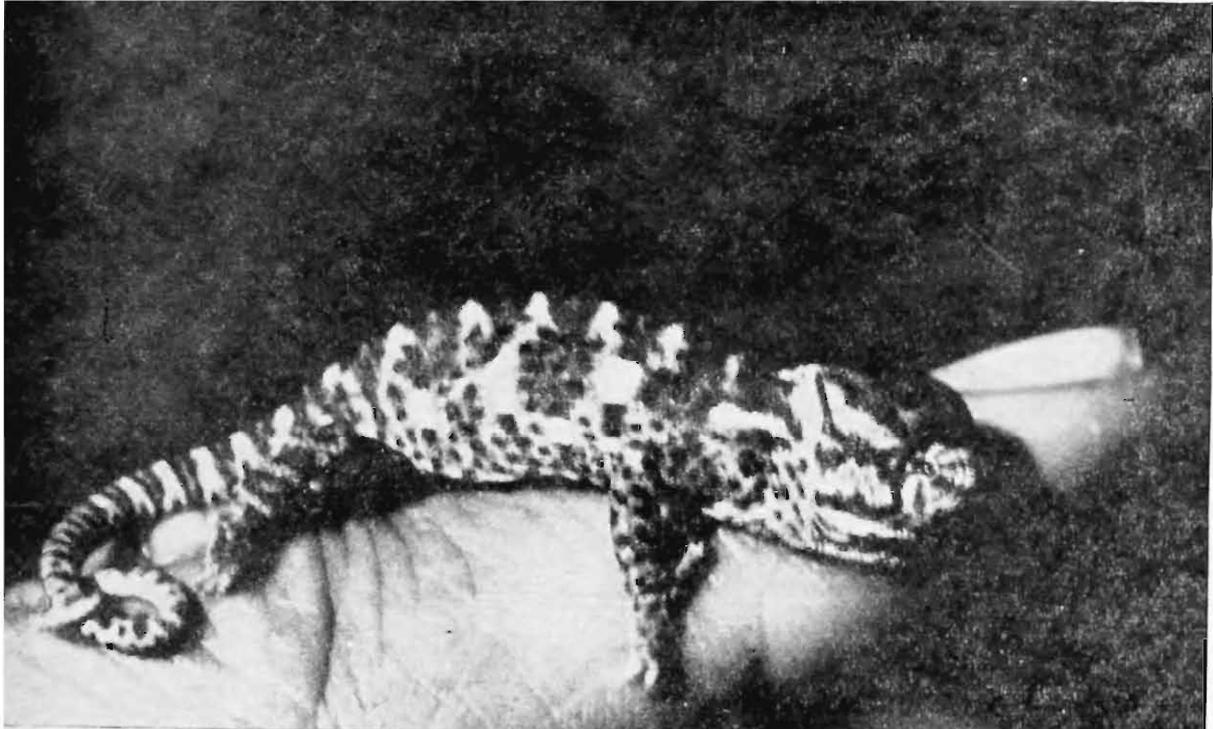
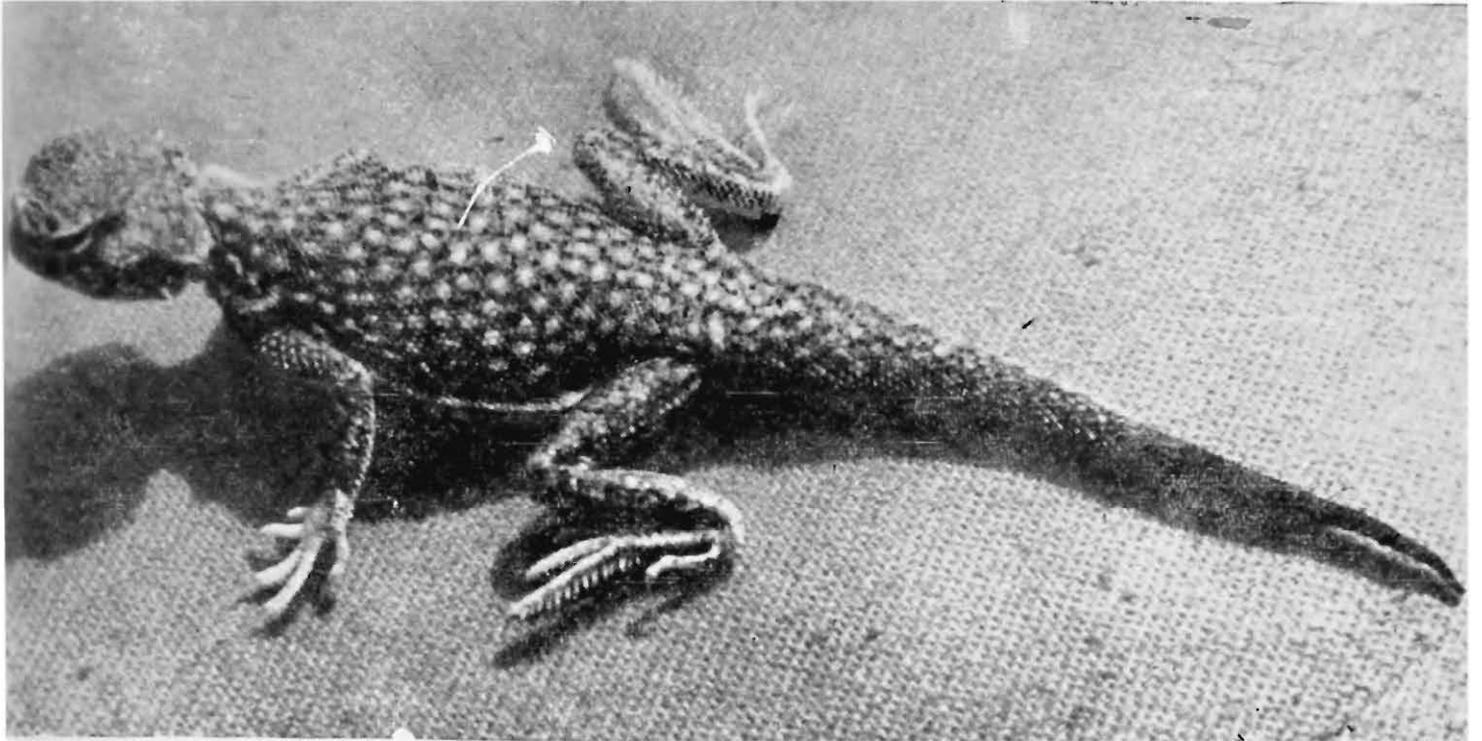
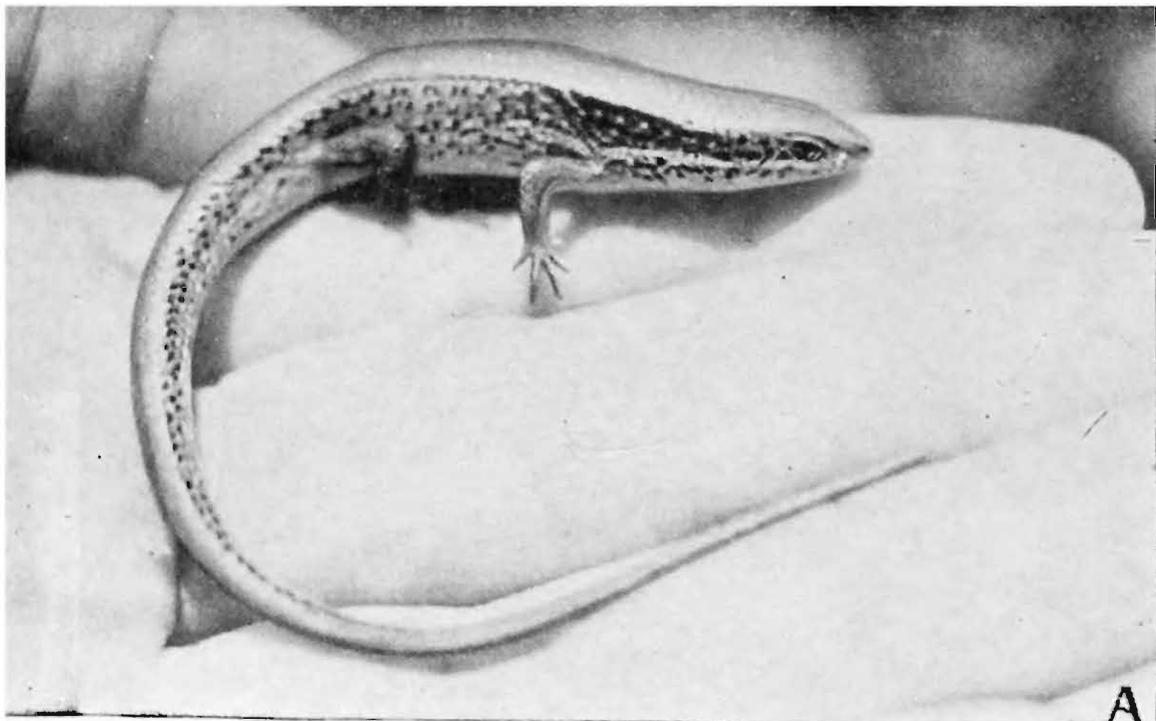
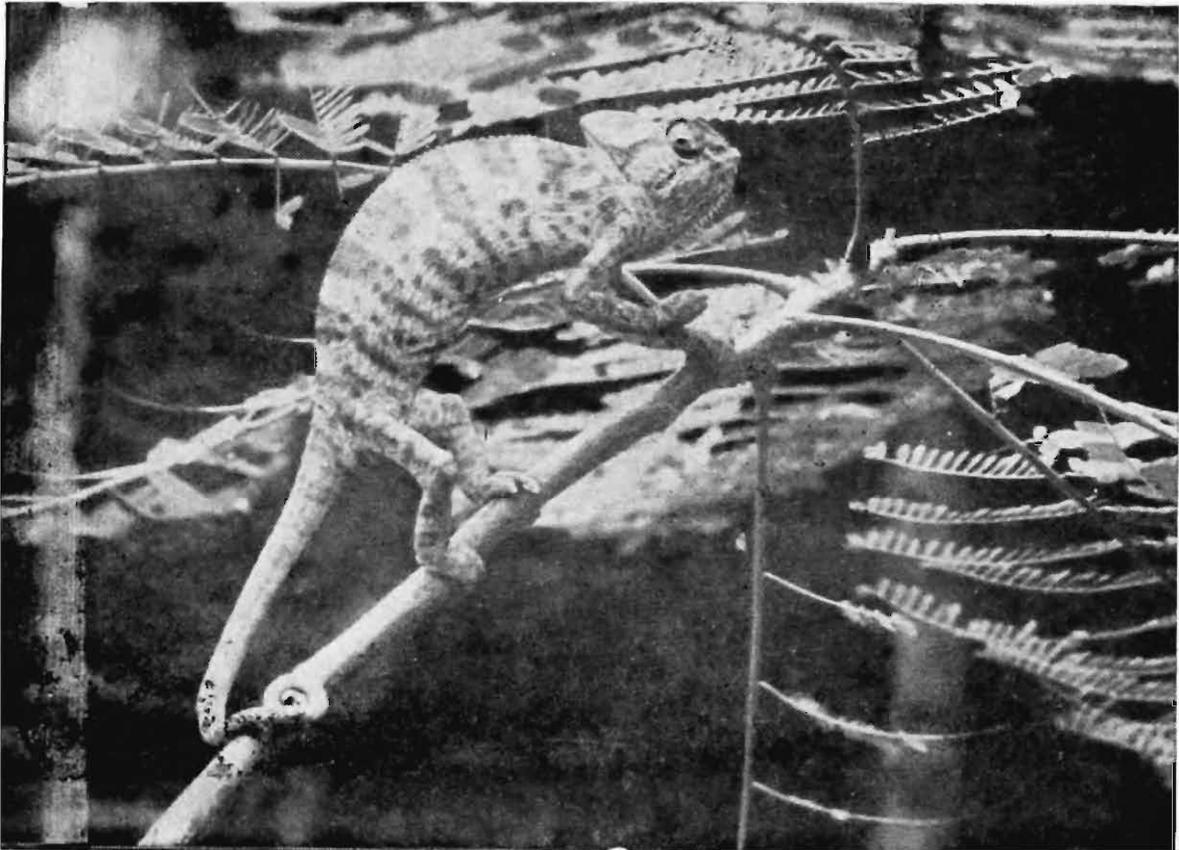


PLATE : 10 E, Toad-head Agama *Phrynocephalus Sp.*

PLATE : 11A, Indian Chameleon *Chameles Zeylanicus.*



**PLATE : 11B, Indian Chameleon**

**PLATE : 12A. Spotted Skink *Mabuya macularia***

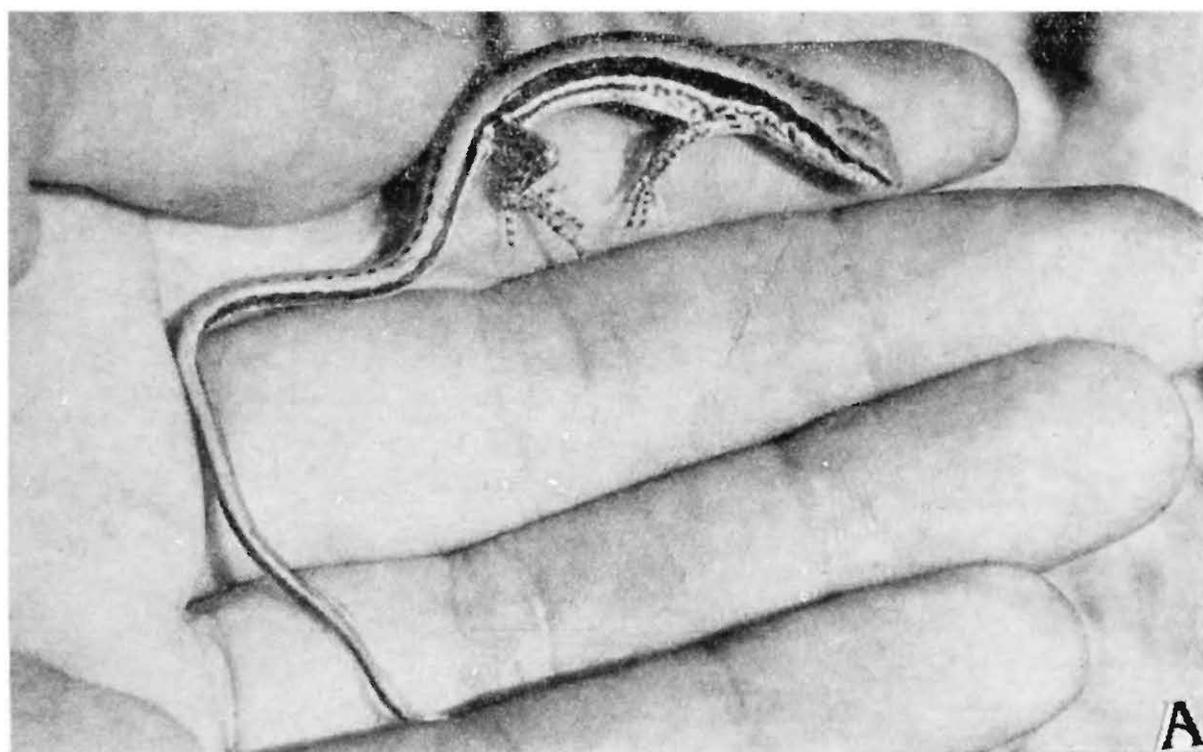


PLATE : 12 B, Sand Skink *Mabuya Bibrani*

PLATE : 13 A, Slender Skink *Sphenomorphus dussumieri*

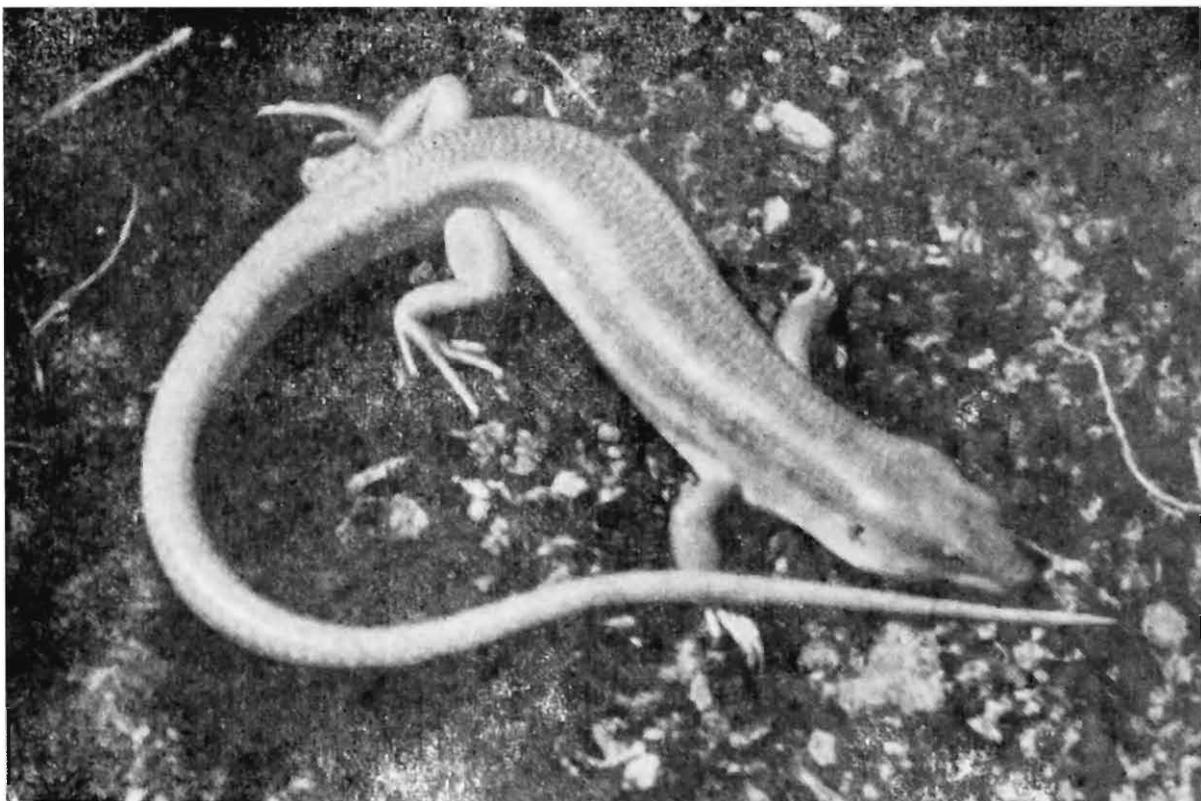
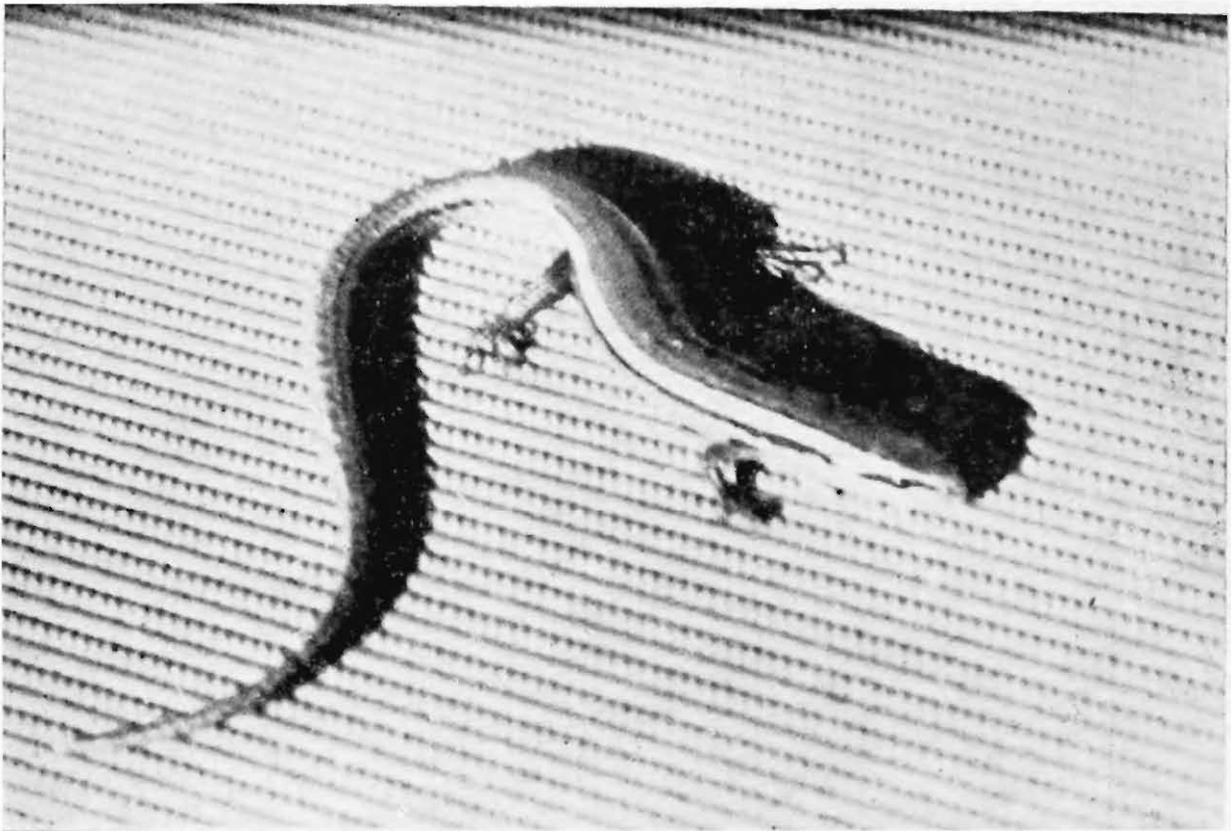


PLATE : 13 B, Earless Dwarf Skink *Ablepharus grayanus*

PLATE : 14, Mole Skink *Eumeces Sp.*

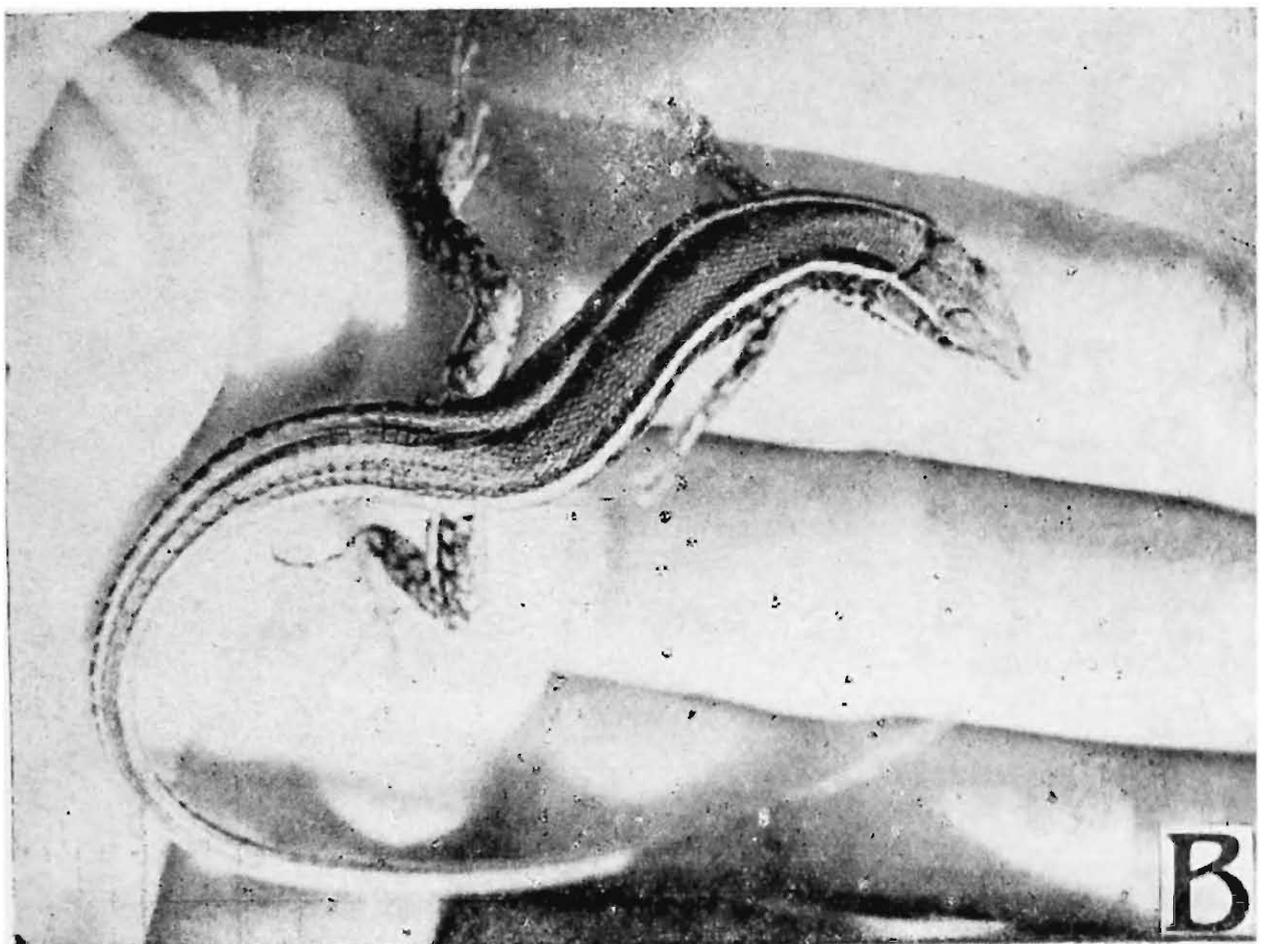


PLATE : 15 A, Leschenault's Cabrita *Cabrita leschenaulti*

PLATE : 15 B, Beddome's Snake-eyed Lacertid *Ophisops beddomei*

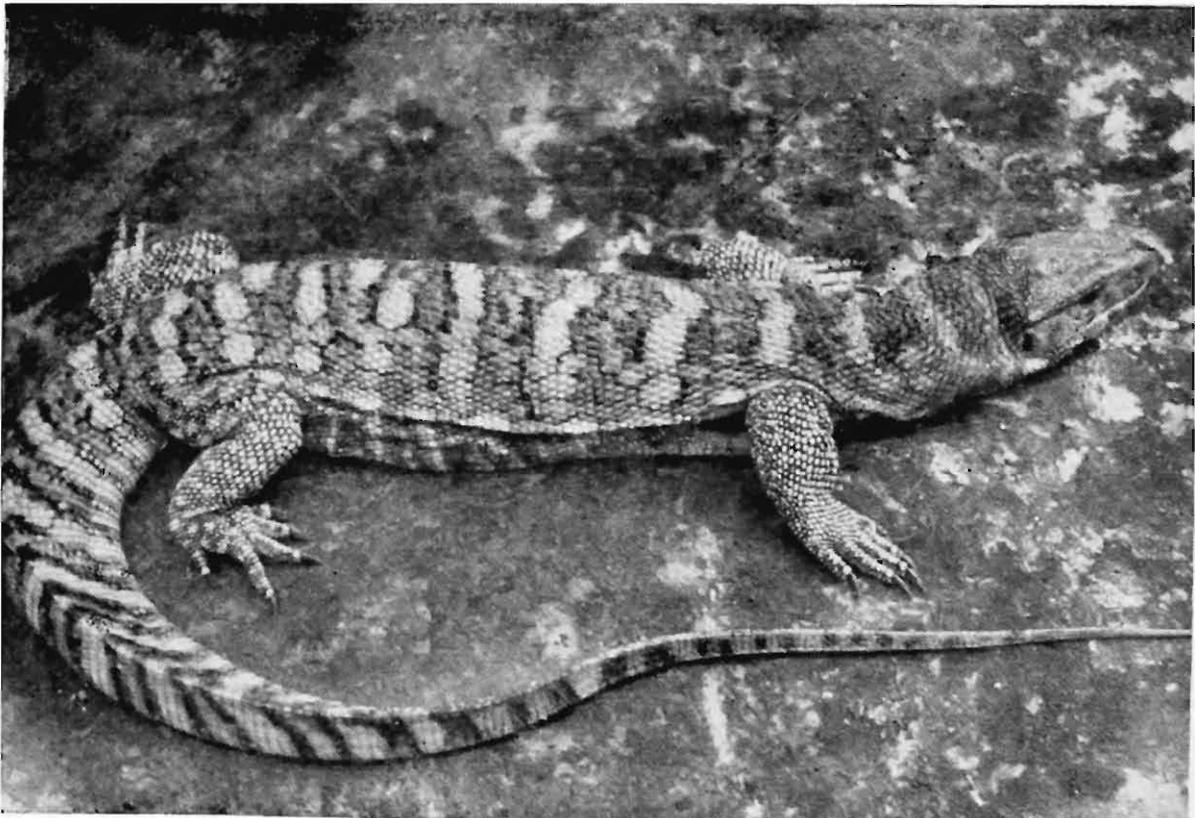
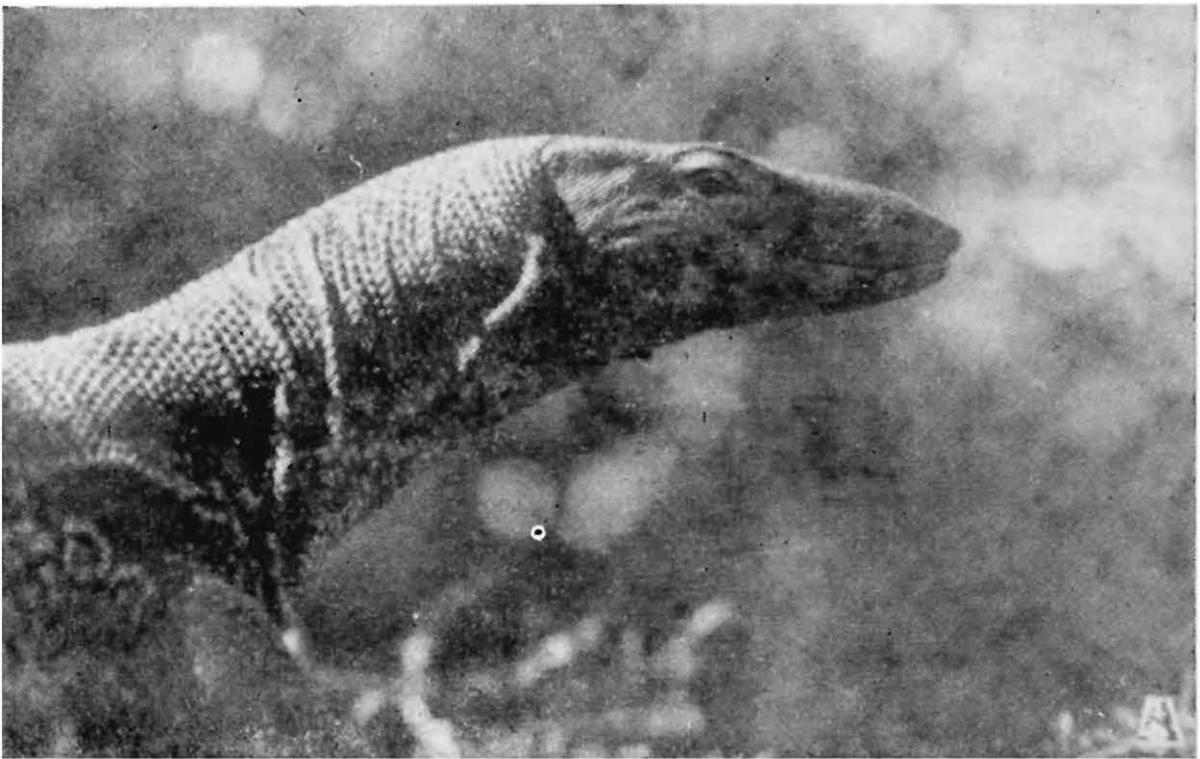


PLATE : 16 A, Head of Water Monitor *Varanus salvator*

PLATE : 17, Yellow Monitor *Varanus flarescens*



PLATE : 18, Desert Monitor *Varanus griseus*

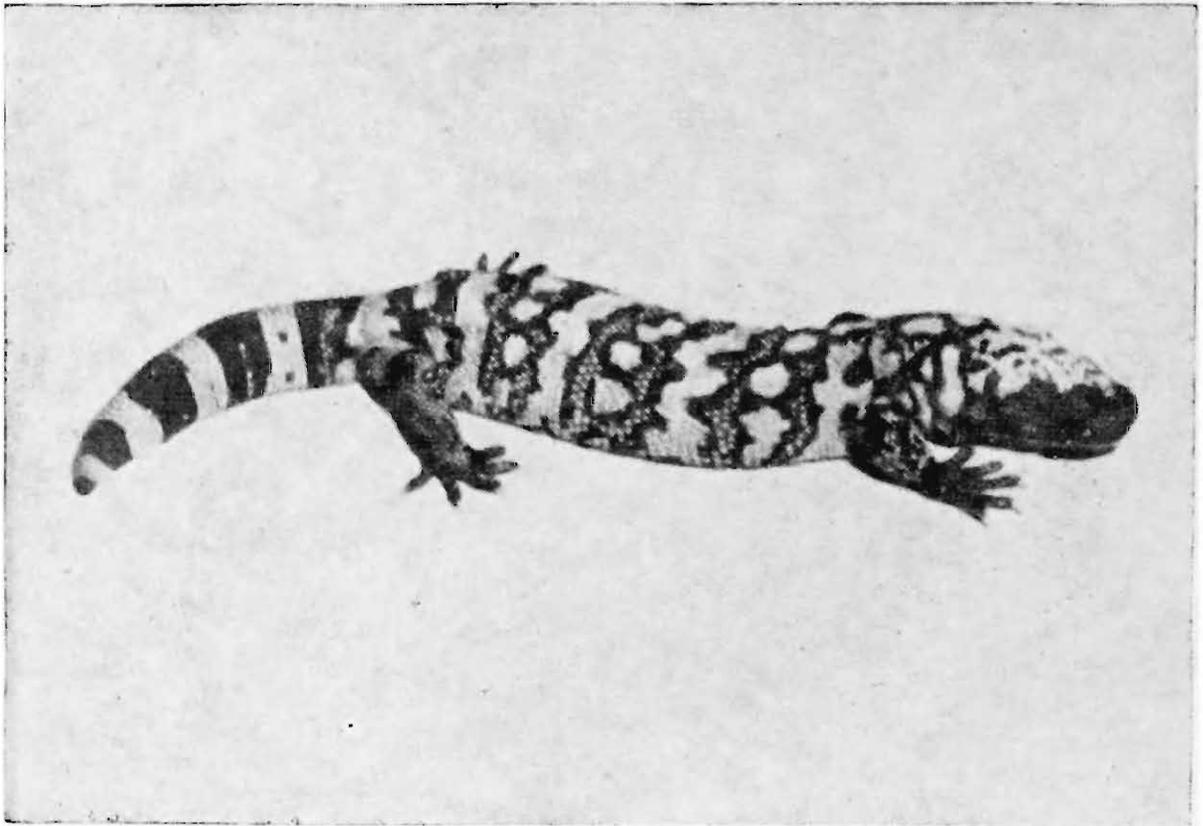
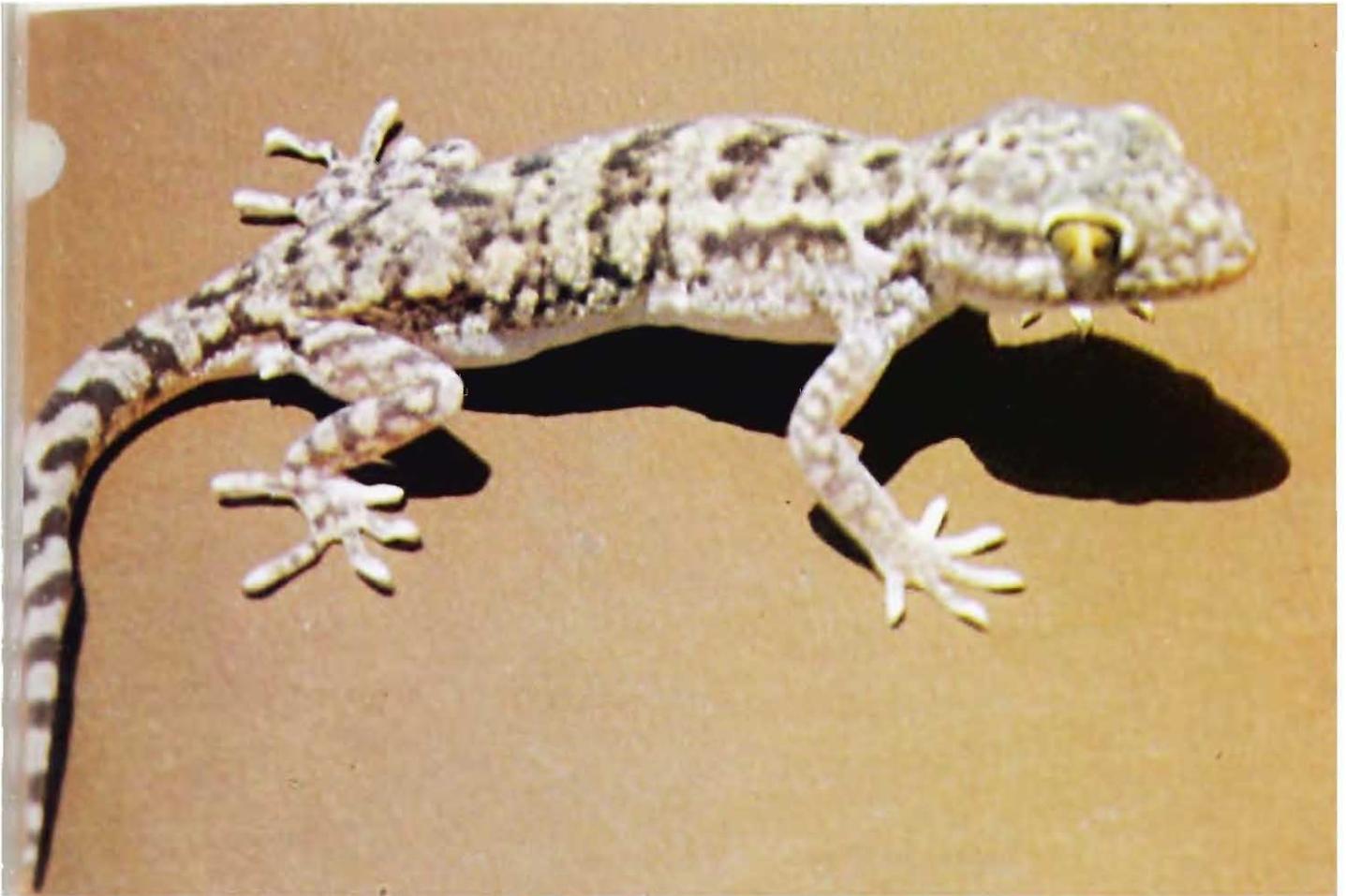


PLATE : 19, Gila Monster *Heloderma Suspectum*



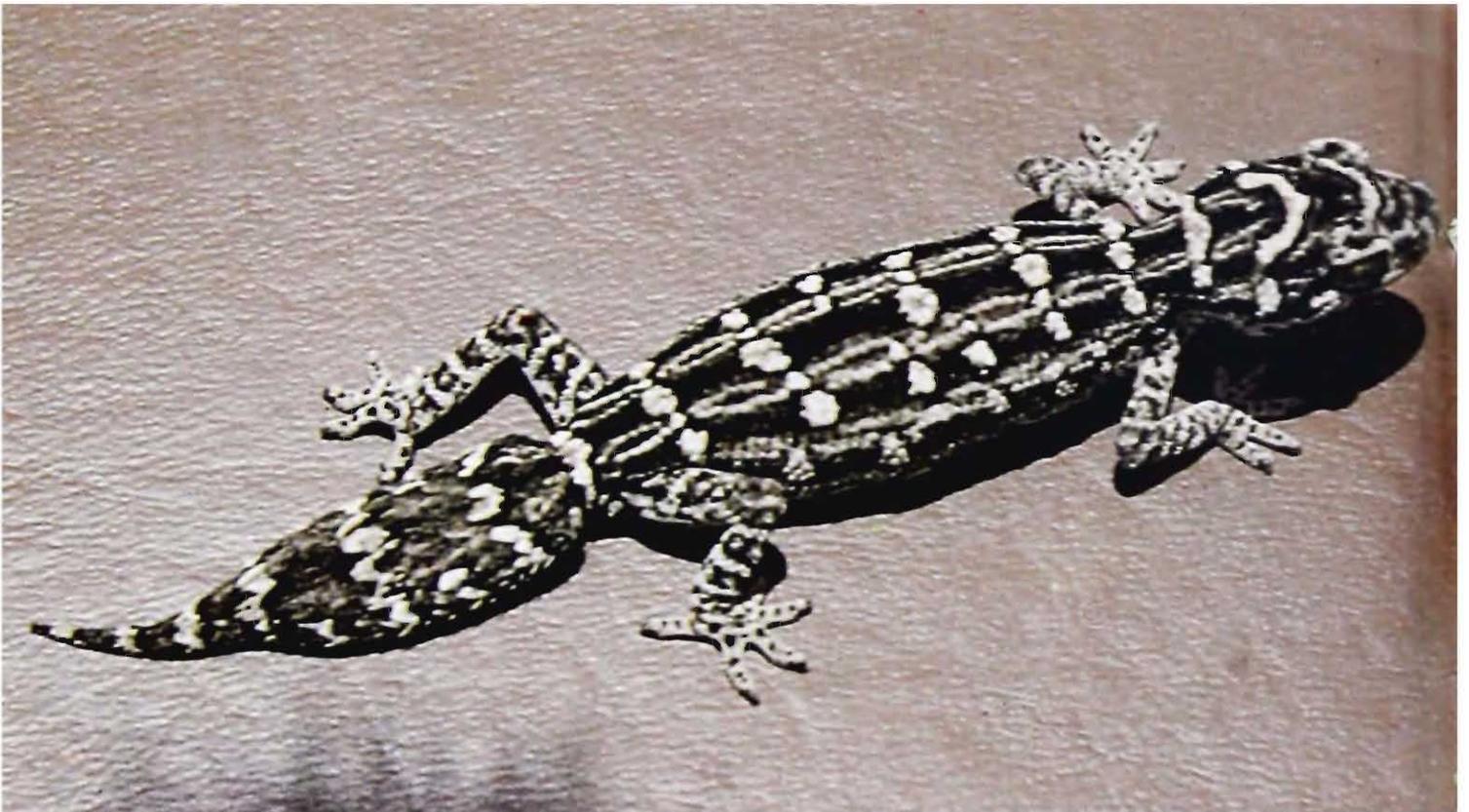
1. Sind Sand Gecko, *Stenodactylus orientatalis*

2. Blotched House Gecko, *Hemidactylus triedrus*





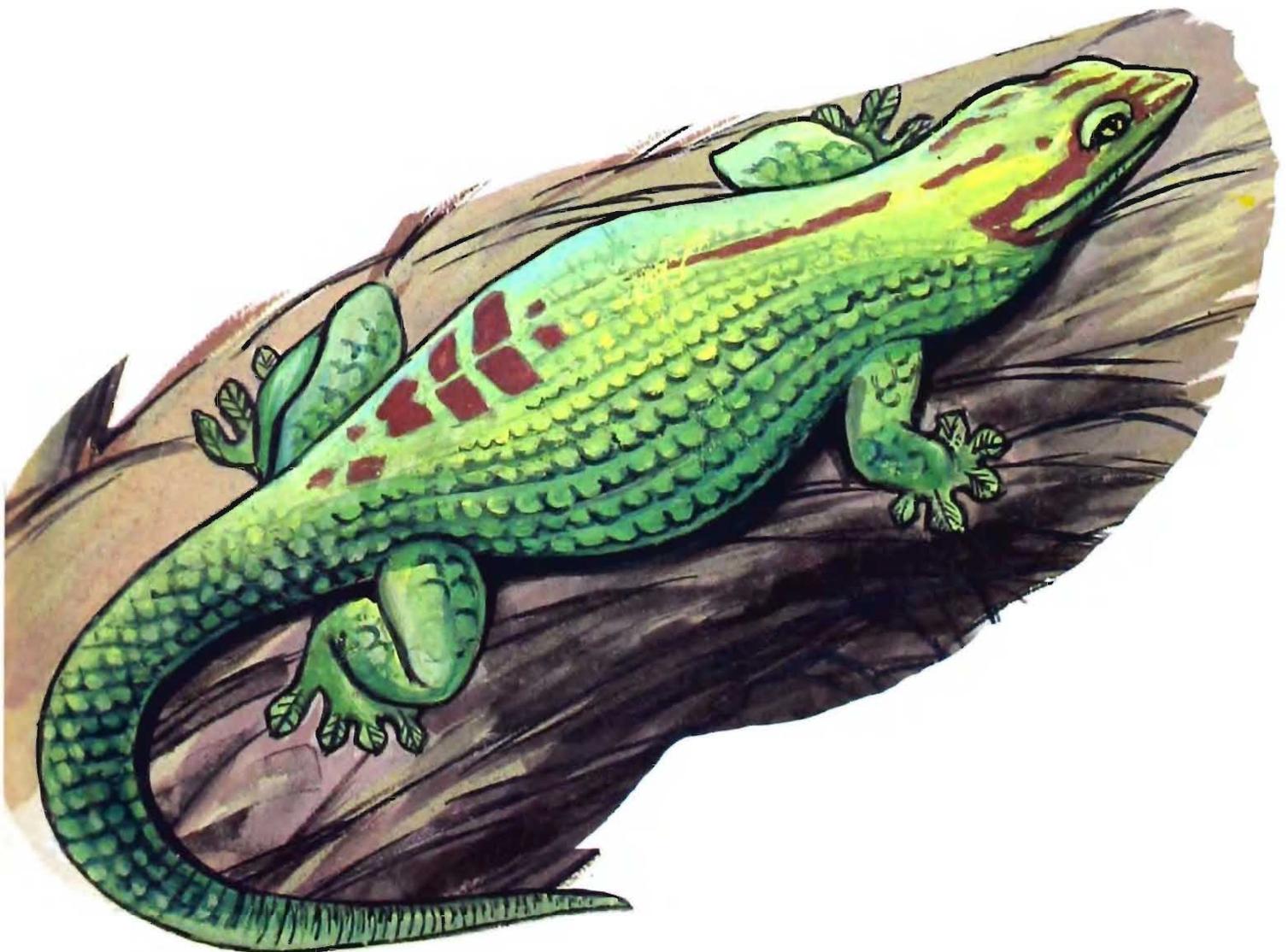
3. Bark Gecko, *Hemidactylus leschenaulti*



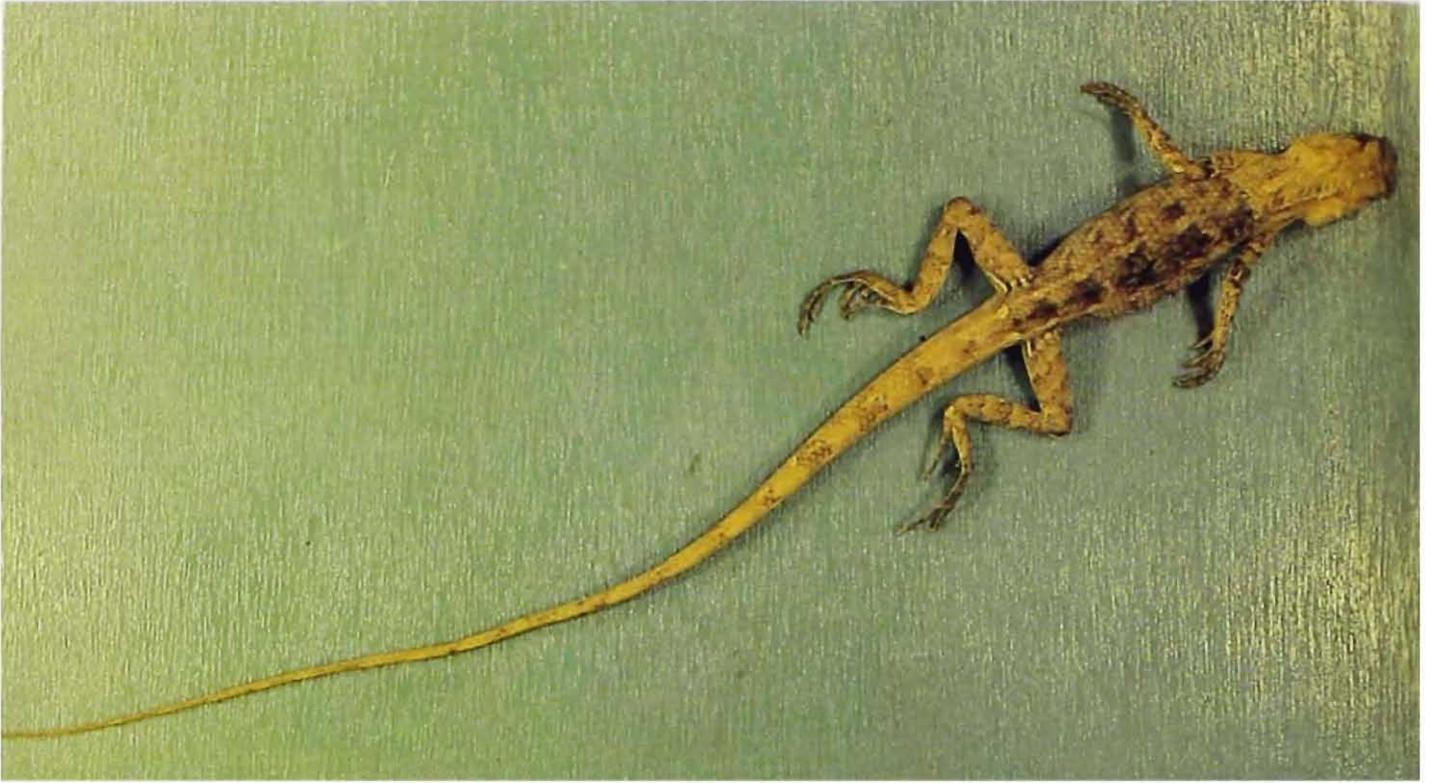
4. Banded Gecko or Broad - tailed Gecko, *Teratolepis fasciata*



Spotted Cat-eyed Gecko, *Eublepharis macularius*

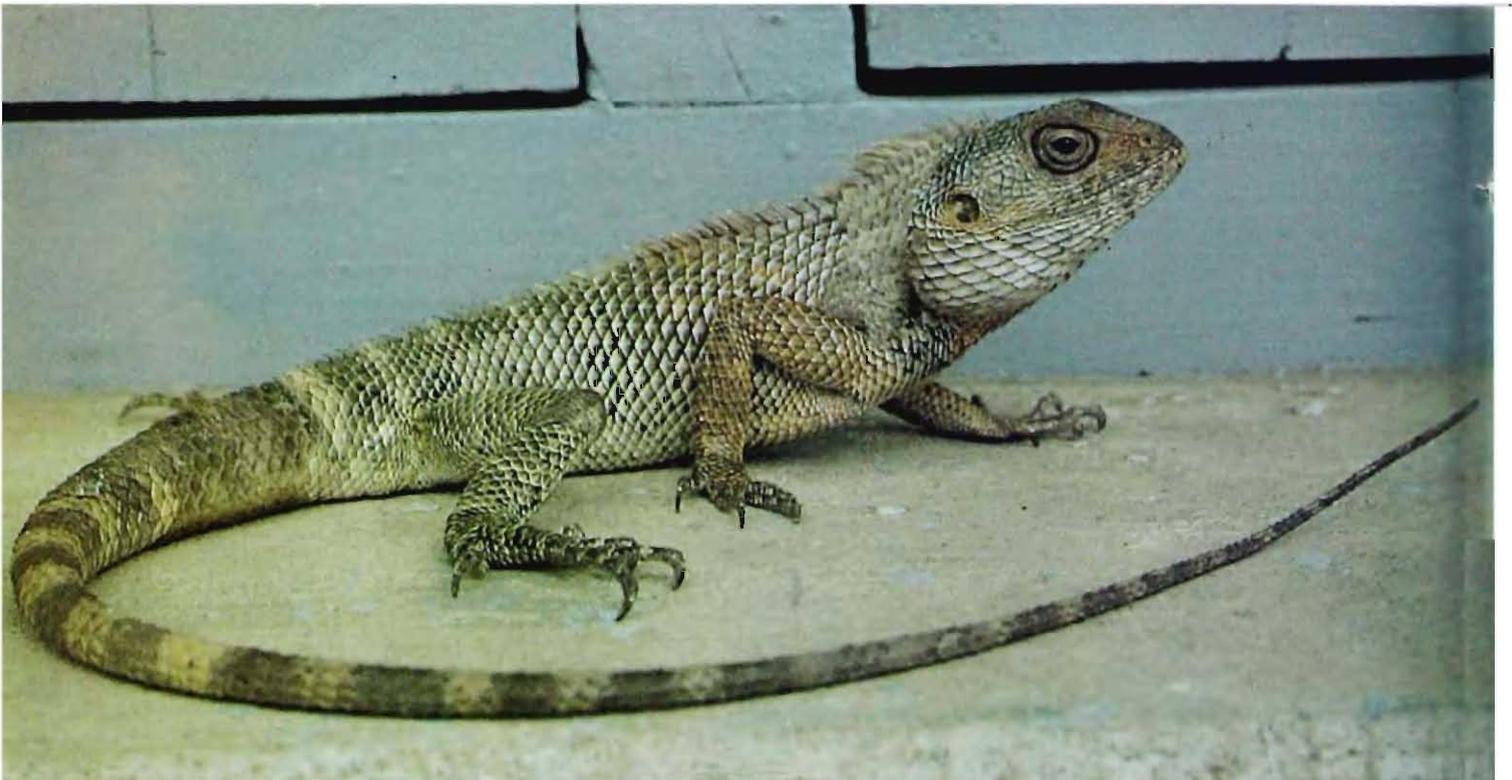


6. Andaman Day Gecko or Green Gecko, *Phelsuma andamanense*

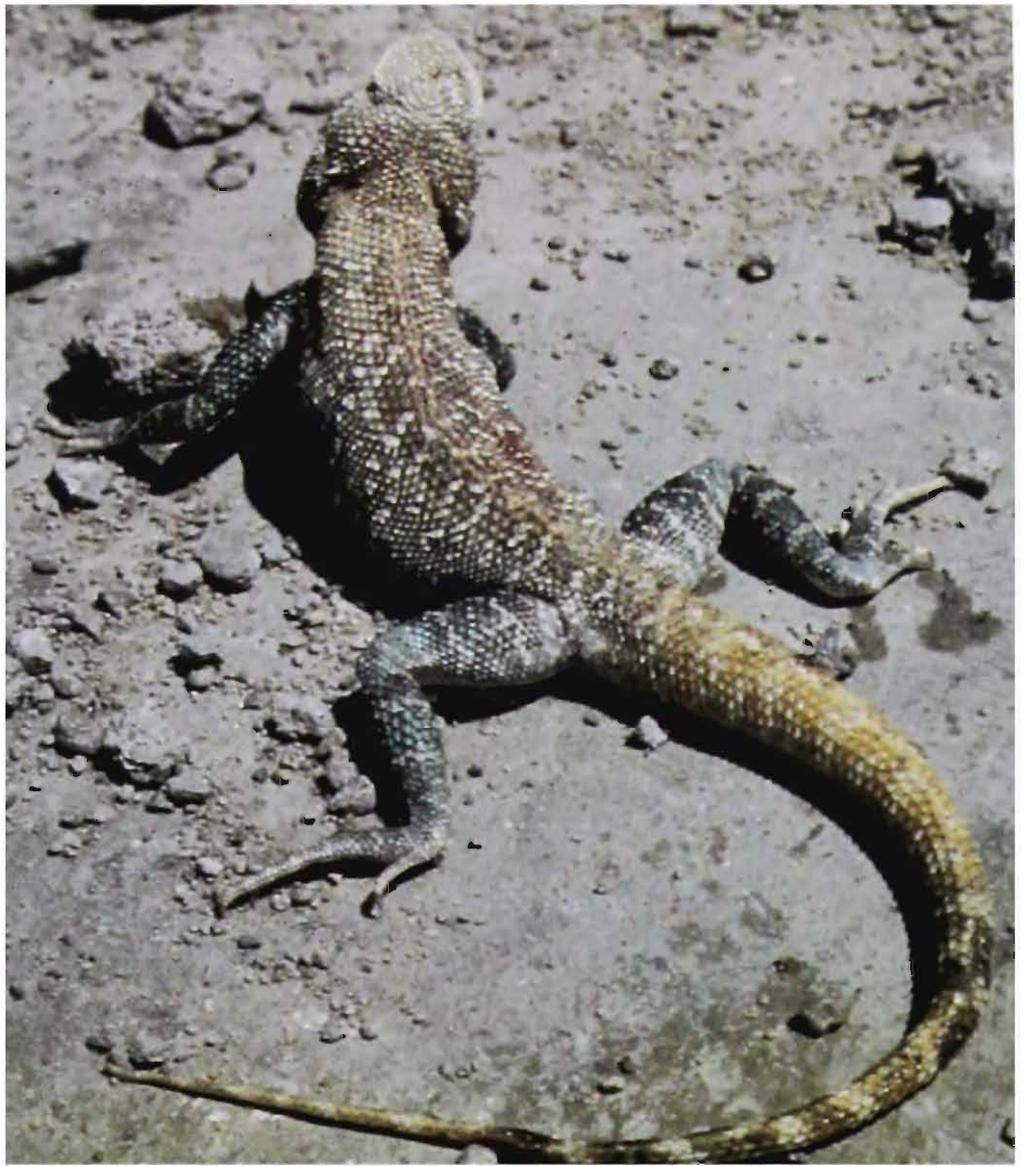


7. Indian Garden Lizard, *Calotes versicolor*. Juvenile.

8. Indian Garden Lizard, *Calotes Versicolor*. Adult.



Brilliant Rock Agama,  
*Agama agilis*.



10. Striped Grass Skink, *Mabuya dissimilis*



11. Bronze Grass Skink, *Mabuya macularia*

12. Darjeeling Slender Skink, *Sphenomorphus indicum*

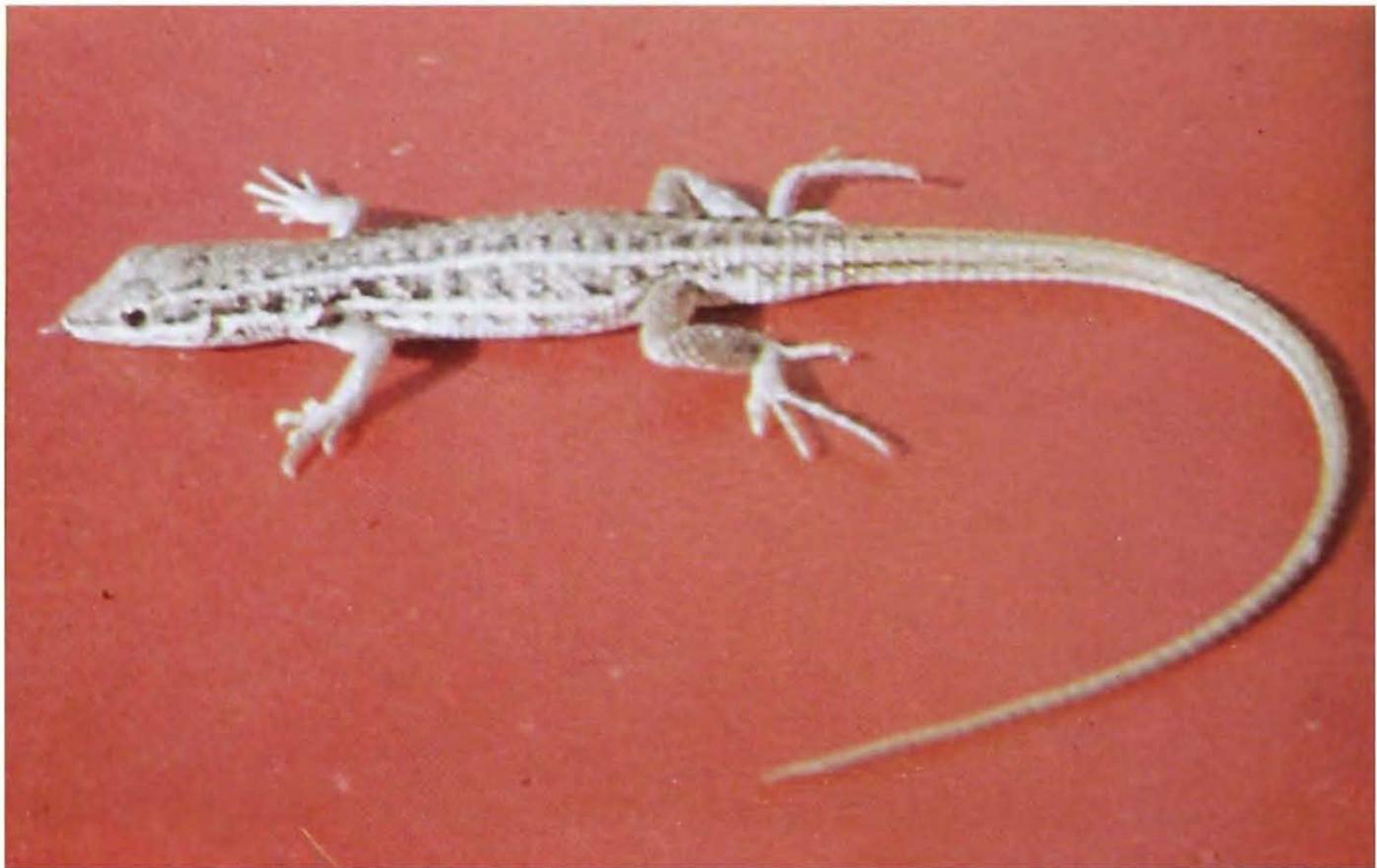




3. Yellow-bellied Mole Skink, *Eumeces taeniolatus*



14. Barkudia Burrowing Skink, *Barkudia insularis*



15. Punjab Snake-eyed Lacerta, *Ophisops jerdoni*

16. Common Indian Monitor, *Varanus bengalensis*. Baby.

