

# The Lizards and Snakes of Nigeria

By Dr. G. T. Dunger, F.Z.S.

With 6 photographic plates and a figure by the author

## Part 2 : THE LACERTIDS OF NIGERIA

Family : Lacertidae

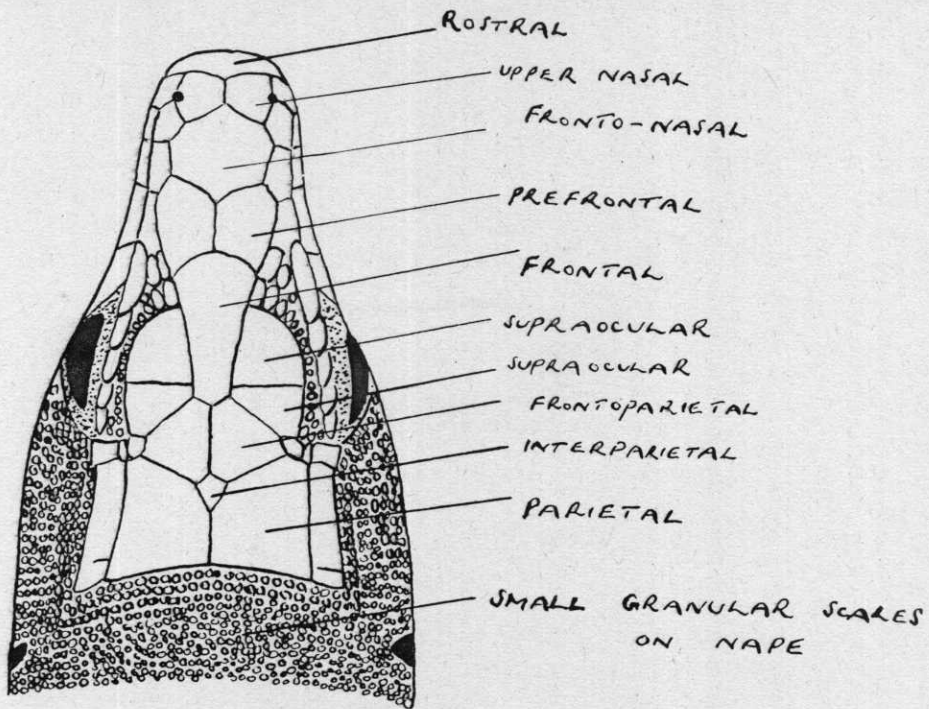
THE name of the Order (Lacertilia) is derived from this family of lizards, the lacertids being the lizards that zoologists consider to be symbolic of the whole Order. Confined to the Old World, there are about 150 species, of which five have been recorded for Nigeria. These lizards possess scaly bodies, conical heads and moveable eyelids; they have well developed limbs and tails; the head shields are fused to the skull. All of the Nigerian species have a collar of enlarged scales at the base of the neck. All, except one, live in the open country of the Northern Region and are very fast in movement and therefore difficult to see. They are found where this speed can be utilised, in places devoid of vegetation that permit straight and rapid locomotion. Such places are roadside gullies and dried-up river beds. The exception referred to above is a tree dweller of the southern forests.

Check list:

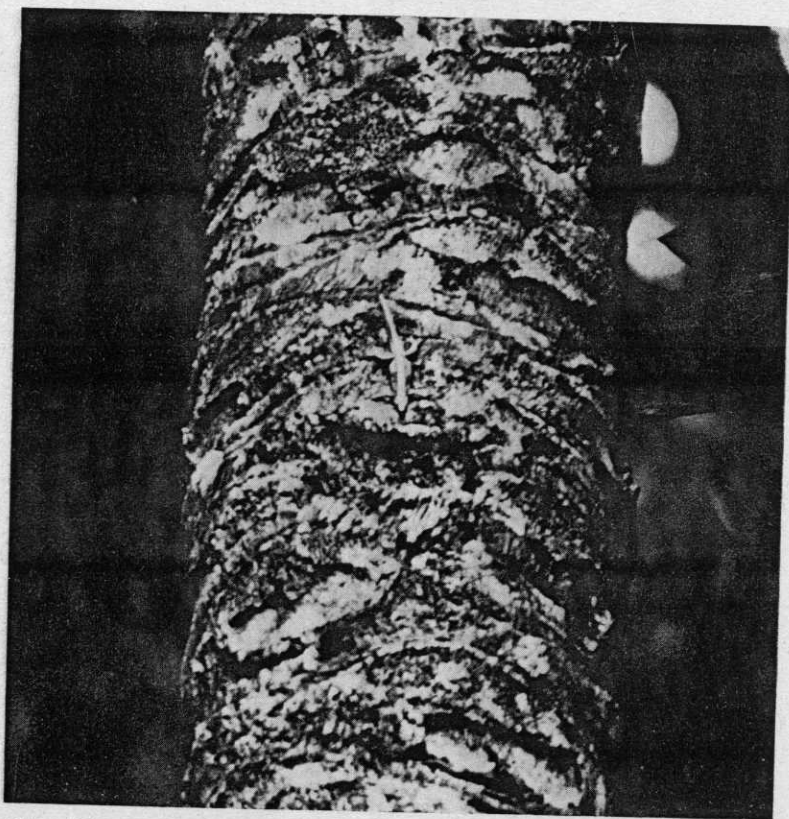
- 1) *Holaspis guentheri* Gray 1863
- 2) *Eremias guineensis* Boulenger 1887
- 3) *Eremias nitida* Gunther 1872
- 4) *Acanthodactylus boskianus* Daudin 1802
- 5) *Latastia longicauda* Reuss 1834

1) *Holaspis guentheri guentheri* Gray. The Fringe-Tailed Forest Lacertid. The remarkable gliding flight of this strikingly beautiful lizard was described in detail by a Danish herpetological expedition following observations in the forest of Western Nigeria at Yemoji, near Ijebu-Ode (Schiotz et Volsoe, 1959). Ionides in 1951 had, however, noted the long horizontal distances covered by *Holaspis* in "jumping" from one tree to another (Loveridge, 1955). This gliding ability had been hitherto unsuspected owing to the fact that *Holaspis* has no striking morphological adaptations as seen in other flying lizards (*Draco*). This is the first example of such flight in a lacertid or in any African lizard. The Danish party recorded a downward glide between tree trunks over a distance of 44ft., the horizontal distance being 35ft. and the vertical descent 29ft.

I made a journey to Yemoji to see these lizards for myself. I arrived on a Sunday morning in February at the cold and damp hour of 7 a.m. The lizards lived in a forest clearing, inhabiting many tall oil palms that grew



*Eremias guineensis*—dorsal view of the head showing the anatomy of the head shields.



The Fringe-Tailed Forest Lacertid, *Holaspis guentheri*, in its natural surroundings at Yemoji, Western Nigeria. (400mm. Tele-Ennalyt lens f.4.)

alongside a clear running stream. The stream had been dammed to create a small swimming pool and was favoured as a weekend picnic spot by parties of expatriates from Lagos and the surrounding area. There was no sign of *Holaspis* until the sun penetrated the misty clearing some three hours after my arrival. Only the keenest observation of the upper trunks of the palm trees revealed their presence for these small 4in. lizards really look minute at a distance of 50 to 100 feet above the ground. After feeding for about two hours on the ants that run over the palm trunks, their activity declined towards midday as the human activity increased below. I found photography difficult, in spite of having a 400mm. telescopic lens, due to the extreme range, the small target and the bad lighting conditions (Plate 1). These lizards flatten themselves against a tree trunk to an extraordinary degree, the body being almost circular in outline and absolutely flat, a posture that must be related to the gliding ability.

The capture of these lizards alive presents a formidable problem even if a tall palm tree is successfully climbed, possessed as they are of the ability to "jump" from tree to tree. However, under less difficult conditions, the ingenuity of man has been equal to the task. Ordinarily, the lizards are captured alive, on rare occasions, when they are found on the ground in the early morning, inactivated by cold and damp. However, Mr. Max Ammer, a Dutchman working for an oil drilling company in the Port Harcourt area, used an ingenious method to take *Holaspis* from the trees (Kramer, personal communication, 28.3.66). He attached about 2ft. of fishing line to a 10ft. bamboo pole and tied a small grasshopper to the end of the line. Dangling the bait in front of the nose of *Holaspis*, he waited for a bite before pulling it off the tree. The falling lizard has then to be caught by direct chase at the foot of the tree. This method depends on finding the quarry at a low altitude, a condition that certainly did not apply at Yemoji at the weekend when human beings abounded. Mr Zeno Kramer prefers a cotton line when using the above method of capture.

In captivity, these lizards feed on ants and small grasshoppers, though I found that they killed when they had no intention of eating. They appear to like warmth, moisture, sunlight and a place to hide. The females lay a clutch of two eggs.

I think that this lizard is the most beautiful of all the Nigerian species; it is petite and beautifully coloured with black, yellow and turquoise, an exquisite jewel of the forest (Plate 2). Trinomials are used to distinguish this sub-species from the East African sub-species *Holaspis guentheri laevis* Werner that has a single black lateral line along the flank in addition to the vertebral and dorso-lateral lines (Loveridge, 1953e). The species ranges from Nigeria in the west, through Cameroons, Gabon and Congo to Uganda and Tanzania.

## Description:

Head and body much depressed; snout long and pointed. Nostril pierced between two nasal scales above the first upper labial; three loreals; frontonasal forming a suture with the rostral; a pair of prefrontals; a median frontal; four large supraoculars; seven to eight supraciliaries; no frontoparietal (postfrontal); a pair of large parietals separated anteriorly by a large interparietal and posteriorly by a smaller occipital; sub-ocular bordering the lip between the fourth and fifth upper labials; lower eyelid scaly; five pairs of enlarged chin scales, the anterior two pairs in contact; collar distinct with a free straight edge and consisting of seven to eleven enlarged scales; no aural denticulations; temporal scales granular, flat and smooth.

Two longitudinal series of enlarged, smooth, transverse shields, one on each side of the dorsal midline, from the nape to the tail. Dorso-lateral scales small and granular disposed in regular transverse rows, mid-body count of 58-77 dorsal rows; ventrals smooth and imbricate in six longitudinal rows and 27-30 transverse rows from the collar to the preanal region; a large single preanal plate.

Femoral pores in both sexes; 19 to 24 in number on each side. Digits denticulate laterally in basal half of toes and along inner edge of hind leg; subdigital lamellae smooth; anterior row of plantar scales enlarged and possessed of soft pads; fusion of third and fourth fingers partially. A large series of sub-tibial plates.

Tail much depressed with strong denticulation laterally (Plate 3); tail longer than the body.

The predominating colours—black, turquoise and yellow. The body has a black vertebral line that bifurcates anteriorly to form two dorsal head stripes; in addition there are paired dorsolateral black longitudinal lines and two pairs of lateral black longitudinal lines, the intervening colour being beige. Lips beige. Dorsum of head a pale yellow and the denticulate fringe of the tail a deep yellow. The enlarged dorsal scales turquoise in colour becoming more intense over the tail. Belly blackish grey.

One average-sized specimen measured 110mm. (44 + 57) or 4.35 inches.

Records: Yemoji; †Ipake forest reserve, near Ilaro; ‡Okoloma, near Port Harcourt; †Azumini; \*Oban Hills; \*Abo (S. Nigeria).

†Mr. Hilary Fry (sight record).

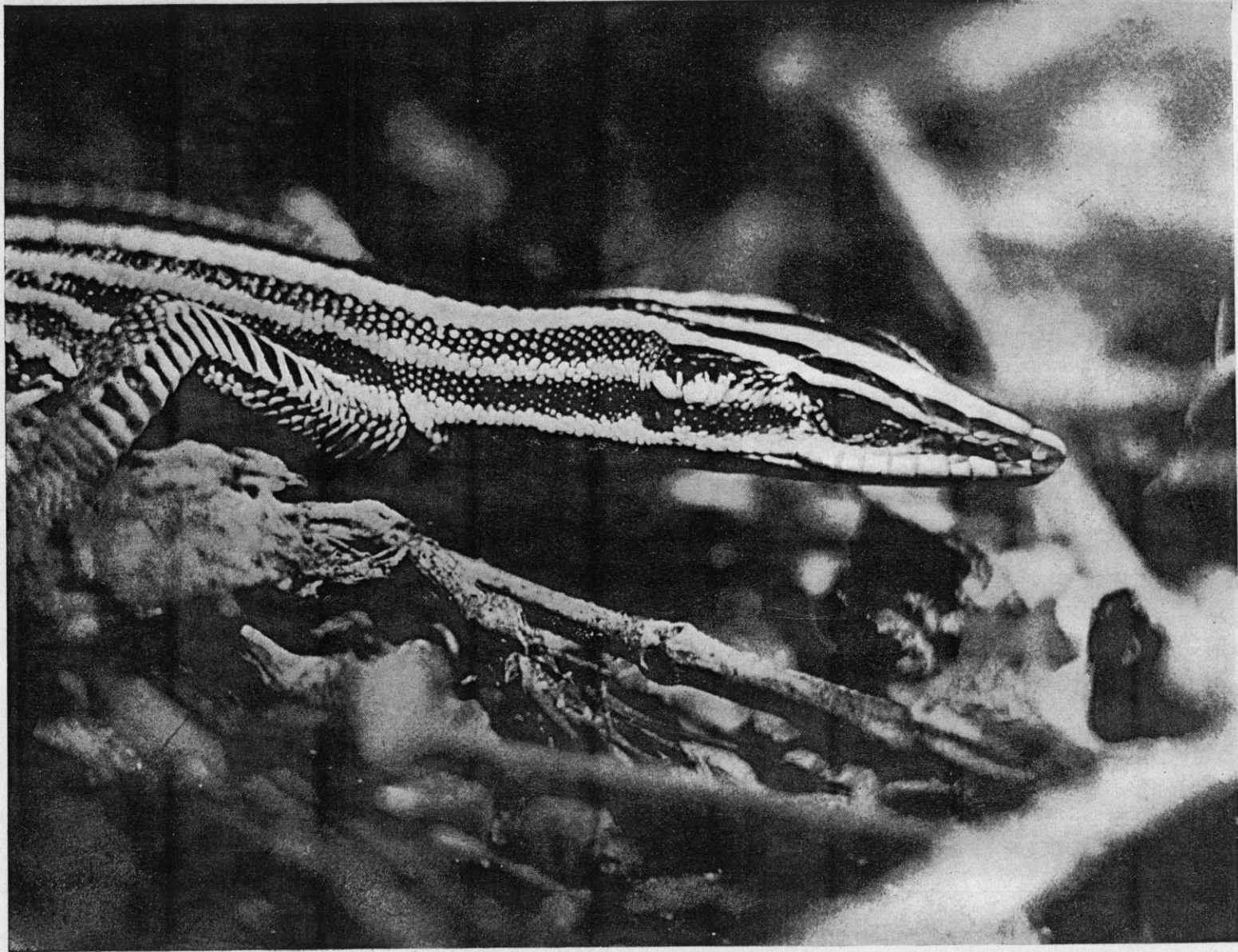
‡Mr. Z. Kramer (1966).

\*British Museum — collector P. A. Talbot (1912) Oban specimen.

— collector W. J. Ansorge (1902) Abo specimen.

Notes: 1) Romer (1953) recorded the presence of this species within a radius of 12 miles of Port Harcourt.

2) I am told that the Yoruba name for this lizard is Ayonbele.



The Fringe-Tailed Forest Lacertid, *Holaspis guentheri*.

2) *Eremias guineensis* Boulenger. Boulenger's Desert Lacertid (Plate 4)

This lizard is common on the Jos Plateau. When seen, it is usually a blur in a rain gully, its speed defying recognition. The key in the Catalogue of Lizards in the British Museum (Boulenger, 1887) attributes the lack of fringed toes to the genus *Eremias* but all of the Nigerian material I have examined shows a well marked fringe along the outer border of the fourth and fifth digits of the hindlimbs. This fringe is not so marked as in *Acanthodactylus boskianus* but it is definitely there. These lateral extensions of the feet are assumed to be a specialisation for movement over sand but not all desert lacertids have fringed toes; *Latastia longicauda* lives side by side with *Acanthodactylus boskianus* in the same sandy conditions around Sokoto but does not have them.

## Description:

Head elongate; snout obtuse. First upper labial in contact with lower and posterior nasals and anterior loreal; nasal scale divided into three parts, an upper nasal, a lower nasal and a posterior nasal; nostril well separated from the first upper labial; two loreals, an anterior and a posterior; frontonasal separated from the rostral by the upper nasals that share a common suture in the dorsal midline; a pair of prefrontals; a median frontal; two large supraoculars with a number of small scales in front and behind; a series of small granules between the supraoculars and the supraciliaries; five supraciliaries situated above the eye, the anterior being at least three times the size of the others; a pair of frontoparietals (post-frontals); a pair of large almost square parietals separated anteriorly by a small interparietal; no occipital; a keeled or transversely convex band-like shield bordering each parietal externally which may be subdivided; subocular bordering the lip between the fourth and fifth upper labials (Plate 4); lower eyelid scaly, a transparent area being seen in the immature specimens; five pairs of chin scales, the anterior three pairs being in contact anteriorly; collar indistinct and attached being visible only at the sides; no aural denticulations, temporals many, small, smooth and juxtaposed.

Dorsal scales small and subimbricate over the nape and body, flat and oval or pointed and trihedral becoming flat, imbricate and strongly keeled near the hind limbs; mid-body count of dorsal scales 54-66 and 11-21 longitudinal rows of enlarged dorsal scales between the hind limbs; ventral plates smooth, imbricate, usually broader than long, disposed in straight longitudinal and transverse series 6-10 rows longitudinally, 28-34 rows transversely from collar to preanal region. Two enlarged preanals.

Femoral pores in both sexes, 17-22 each side in uninterrupted or almost uninterrupted series. Three series of sub-tibial plates, one large and two small. Inferior digital scales tricarinate. Denticulate fringe of scales along

the outer border of third and fourth digits of the hindlimbs. Tail long, finely tapered and cylindrical; upper caudal scales strongly keeled, disposed in regular transverse rows. Basal subcaudal scales smooth becoming keeled distally.

The body has five longitudinal brown bands separated by six longitudinal light lines. The bands have a tigroid pattern of chocolate and reddish browns except for the median dorsal band which is plain and lighter in colour. The chin and belly are white and glossy. The hindlimbs are marked with light yellowish spots, seen to a lesser extent on the forelimbs. The tail is brown with sometimes a tinge of blue towards the tip. The young have a more vivid body pattern and colour with a powder-blue tail.

The largest specimen collected was a male, length 175.5mm. (60+115.5) or 6.9 inches, the tail in all specimens being much longer than the head and body length. The newly hatched young measure about two inches in length.

Records: Jos; Kwal; \*Zonkwa; †Zaria; Bauchi; \*Maiduguri; \*Kano; †Bambur; Amper; \*Sherifuri.

\*British Museum.

†Zaria University.

Note: The type specimen was recorded from Brass, Mouth of the Niger (Boulenger, 1887) and like Schmidt (1919) I regard its occurrence there as accidental.

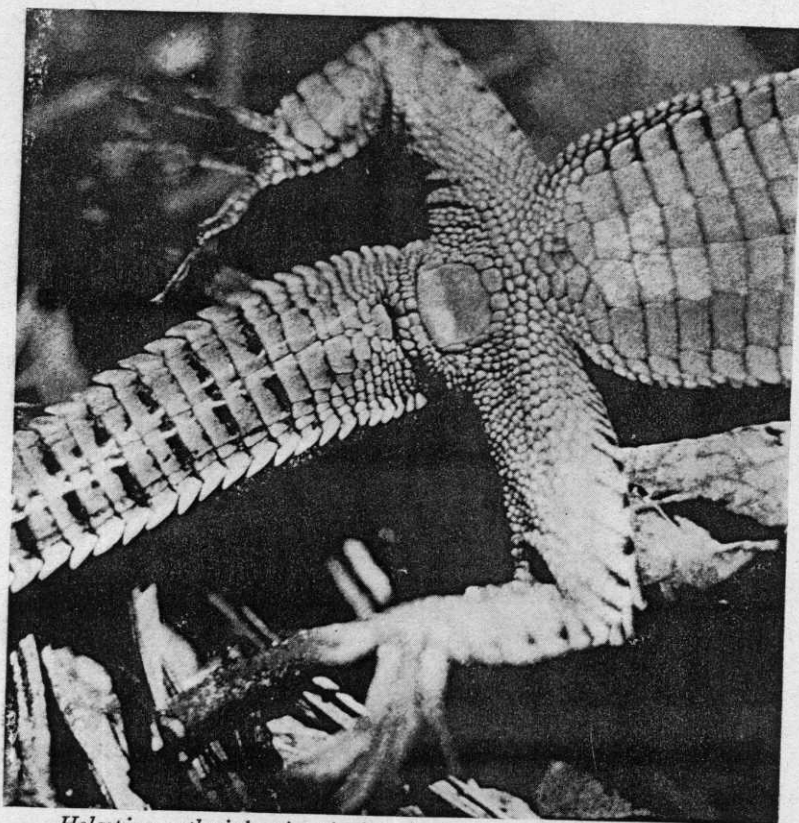
### 3) *Eremias nitida nitida* Gunther. Gunther's Desert Lacertid

This lacertid has a remarkably long tail but unlike *Latastia longicauda* it is small and of similar build to *E. guineensis*. In Zaria both these species of *Eremias* may be found. I have not seen this lizard alive and my experience of it is confined to two preserved specimens in Zaria University. Trinomials are used to separate the Eastern race *Eremias nitida quadrinasalis* Chabanaud (includes *garambarensis* Schmidt) which has 52-69 mid-body dorsals.

#### Description:

Head elongate; snout obtuse. First upper labial contacts lower nasal, rostral and anterior loreal; nasal scale divided into three parts, a posterior nasal, a lower nasal and a large upper anterior nasal that meets its fellow in the midline; nostril well separated from the first upper labial; two loreals, an anterior and a posterior; frontonasal separated from the rostral by the upper anterior nasals; a pair of prefrontals; a median frontal; two large supraoculars with two or three smaller scales in front and behind; a series of small granules between the supraoculars and the supraciliaries; 6-7 supraciliaries; a pair of frontoparietals (post-frontals); a pair of large parietals separated anteriorly by an interparietal; a largish triangular occipital with no intervening scale between the interparietal and the





*Holaspis guentheri* showing the lateral, denticulate, fringe of the tail.

occipital; a keeled band-like shield along the outer border of each parietal, subdivided or complete; subocular bordering the lip between upper labials 5 and 6; five pairs of chin shields, the anterior three pairs in contact; collar with distinct free edge consisting of 8-9 enlarged plates; no aural denticulations, temporals many small and smooth.

Dorsal scales in transverse rows, rectangular and keeled (more regular and flatter than in *E. guineensis* and not converging); mid-body count of dorsal scales 44-55; ventrals smooth and imbricate in six longitudinal rows and 24-28 rows from collar to preanal region; preanals enlarged, one large posterior and two anterior.

Femoral pores in both sexes, 10-14 on each side. Two series of sub-tibial plates, one large anterior series and one small posterior. Inferior digital scales bicarinate; weak denticulate fringe on some toes. Tail very long, more than twice the body plus head length. Upper caudal scales strongly keeled in regular transverse rows; basal subcaudals smooth becoming keeled after three to four rows.



Colour *in vivo* not observed. The larger specimen of the two examined measured 157.5mm. (51 + 106.5) or 6.2 inches.

Records: †Zaria (University campus gully); †Zaria (rocks outside Zaria on Samaru road);

\*Wushishi; \*Rimi.

\*British Museum.

†Zaria University.

4) *Acanthodactylus boskianus* Gray. Bosc's Fringe-Toed Lacertid

This lizard is comparable in size with *Eremias* but its colouring is not so bold or so definite having a pallid appearance common to desert species. It is so named because of the denticulate fringe along the sides of the digits, especially the third and fourth digits of the hindlimbs. (As said before, Nigerian specimens of *Eremias guineensis* have this fringe to a lesser extent.) The gullies along the road from Sokoto to Kware were found to abound with this lizard and it only needed a spade to dig them out of sandholes when they went to earth (see Plate 5). In these same gullies, *Latastia longicauda* was also found, either in holes or under small rocks.

Description:

Head elongate; snout obtuse; first upper labial in contact with nostril, both nasals and the anterior loreal; nasal scale subdivided into two parts, an anterior nasal and a posterior nasal; two loreals, an anterior and a posterior; frontonasal separated from the rostral by the anterior nasals that meet in the midline along a small common suture; a pair of prefrontals; a single median frontal; four supraoculars, the first and to a greater extent the fourth, subdivided into smaller scales; a series of small granules between the supraoculars and the supraciliaries; 6-7 supraciliaries, the anterior larger than the others; a pair of frontoparietals (postfrontals); a pair of large parietals separated anteriorly by a small interparietal, no occipital; two keeled shields, an anterior and a posterior, border each parietal externally. Subocular partially separating the fourth and fifth upper labials but not reaching the lip; lower eyelid scaly; five pairs of enlarged chin shields the first three anterior pairs being in contact; collar with free posterior edge; distinct aural denticulations (Plate 6); temporal scales many small and keeled.

Dorsal scales small, flat and imbricate over the neck, becoming larger posteriorly, strongly imbricate and sharply keeled in longitudinal series that converge markedly toward the tail. Midbody count of dorsal scales 32-39; enlarged keeled dorsal scales in 10 longitudinal rows between the hindlimbs. Ventral plates smooth and imbricate, usually broader than long, in 6-10 longitudinal rows and 27-29 transverse rows from collar to preanal region. Two to three enlarged median preanals, the posterior being the largest.

Femoral pores in both sexes, 18-22 on each side, in uninterrupted series. Four series of sub-tibial plates, one series being larger than the others. A denticulate fringe is present along the sides of the fourth and fifth digits of the hindlimbs, being more developed on the outside. Digits keeled inferiorly. Tail about double the head plus body length, finely tapered, cylindrical, the upper dorsal scales being strongly keeled and the subcaudal scales smooth at the base becoming keeled distally.

As said above, the colours are pallid, a mixture of light browns in speckled pattern with indistinct longitudinal white lines similar to those seen in *E. guineensis*. The belly and chin are white and the hind limbs are also spotted as *E. guineensis*.

The largest specimen taken was 171 mm. long (57+114) or 6.7 inches, the tail tip having been regenerated.

Records: \*Kware; Sokoto-Kware road; \*Illela; †Yo.

\*Miss P. Drew.

†Zaria University.

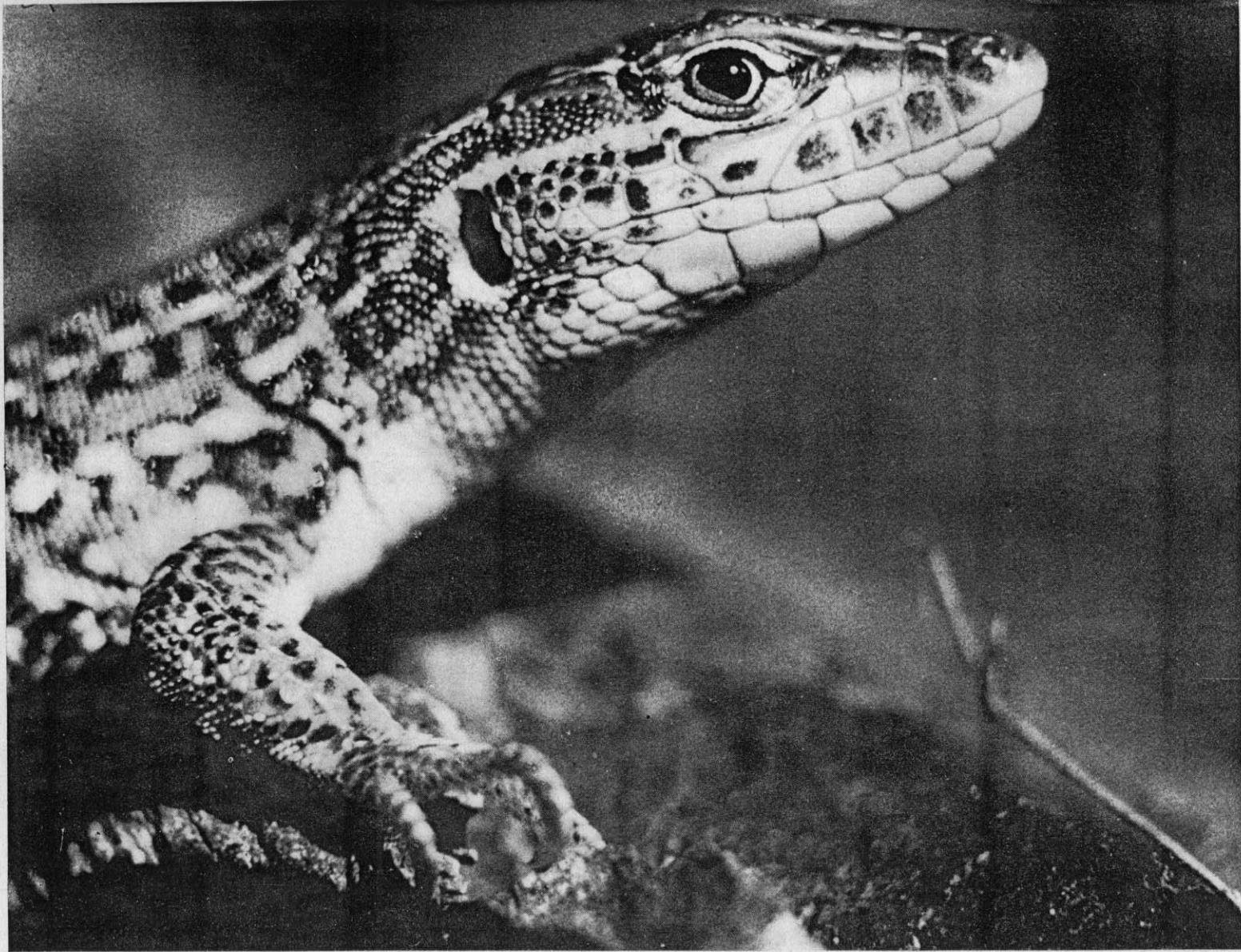
Note: The Sokoto people call this lizard "Dammazari", but I doubt whether this name is confined to this species.

5) *Latastia longicauda* Reuss. Reuss's Long-tailed Lacertid

This lacertid is much larger than all the other Nigerian species and has a tail that is more than twice the combined head and body length. I took some immature specimens in the sandy gullies alongside the Sokoto-Kware road in March 1966 and Miss Pauline Drew of Bristol University collected a series of adults from the millet fields about one mile east of Sokoto town during the rains in August 1966.

Description:

Snout obtuse; head elongated. First upper labial contacts the upper-anterior nasal, the lower posterior nasal and the rostral; it is separated from the nostril by a very short commissure; three nasals, a large upper-anterior and smaller upper and lower posterior nasals; two loreals, one small anterior and a large posterior; a frontonasal separated from the rostral by the contiguous upper-anterior nasals; a pair of prefrontals; a single median frontal which is grooved; two large supraoculars with one or two small scales in front and behind; a series of granules between the supraoculars and supraciliaries; seven supraciliaries, the first large but not very long; a pair of large frontoparietals (postfrontals); a large interparietal, much longer than broad; a small occipital; interparietal separated from the occipital by a small square scale; a pair of large parietals; bordering each parietal externally there is an anterior elongated shield followed by two longitudinal rows of smaller shields; five pairs of chin shields the anterior three pairs in contact; subocular touching the lip between the upper labials 6 and 7; weak aural denticulations present; lower eyelid scaly;



Boulenger's Desert Lacertid, *Eremias guineensis*, showing the subocular scale bordering the lip and the absence of aural denticulations.

collar well marked with a free edge of toothed or notched enlarged plates, 9-11 in number; temporals small, many and smooth.

Dorsals very small, granular and juxtaposed over the neck becoming slightly larger and keeled posteriorly, juxtaposed dorsally and imbricate laterally, mid-body count of dorsals 55-65. Ventrals smooth and imbricate in six longitudinal rows clearly demarcated from the laterals, 27-33 transverse rows from collar to preanal region, some of the pectorals being symmetrically enlarged. Preanals enlarged in variable pattern.

Femoral pores 9-10 in number each side in each sex, each series being separated by three or four scales. Subtibial plates enlarged, a large anterior series, an incomplete small second series and a complete small third series. No lateral denticulate fringe on digits; bicarinate inferior digital keeling. Tail very long, cylindrical and finely tapered, more than twice the combined length of head and body; dorsal caudal scales strongly keeled and arranged in regular transverse rows, basal subcaudals smooth becoming keeled distally.

The colour is light brown with red longitudinal lines, about seven in number with a pattern of red reticulated lines between, disposed transversely. The belly is cream.

The largest specimen measured was 245.5mm. (79+166.6) or 9.65 inches, a male.

Records: \*Katagum; †Sokoto; Kware-Sokoto road; †Kalgo; †Illela.

\*British Museum.

†Miss P. Drew.

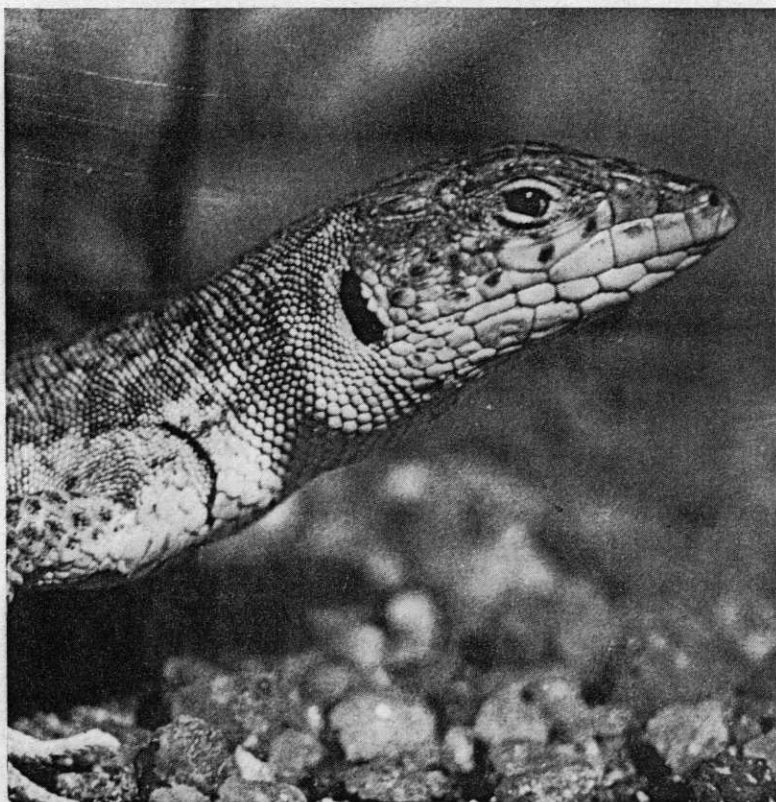
#### KEY TO THE NIGERIAN LACERTIDAE

- 1) No frontoparietals present so that frontal is in contact posteriorly with the interparietal. Tail much depressed and laterally denticulate. Two series of enlarged smooth dorsal plates running longitudinally from neck to the tail *Holaspis guentheri*
- A pair of frontoparietals separate the frontal from the interparietal. Tail almost cylindrical and not laterally denticulate. No enlarged longitudinal plates on dorsum 2
- 2) Nostril well separated from the first upper labial. *Eremias* 3
- Nostril in contact or very nearly in contact with first upper labial 4
- 3) Tail length more than twice head plus body length. Mid-body count of dorsals 44-55. Femoral pores 11-14 each side. Nostril separate from posterior nasal. Bicarinate inferior digital keeling *E. nitida*
- Tail length less than twice the head plus body length. Mid-body count of dorsals 54-66. Femoral pores each side 17-22. Nostril contacts posterior nasal. Tricarinate inferior digital keeling *E. guineensis*
- 4) Subocular touches lip. Femoral pores 9-10 each side. No denticulate fringe on digits *L. longicauda*
- Subocular does not touch lip. Femoral pores 18-22 each side. Denticulate fringe present on digits *A. boskianus*

Note: *Acanthodactylus boueti* Chabanaud has been recorded (Loveridge 1952) from Bassila and Agouagou (Dahomey) and may be present in Nigeria. It has a large single supraocular, dorsals transversely 58-64; ventrals longitudinally 25-30; femoral pores 14-16.



Habitat of *Acanthodactylus boskianus* and *Latastia longicauda*—digging the lizards out from sand holes in a roadside gully between Kware and Sokoto.



Bosc's Fringe-Toed Lacertid, *Acanthodactylus boskianus*, showing the sub-ocular scale well separated from the border of the lip and the presence of aural denticulations.

## Latitude and Longitude of places cited as records:—

Abo (?Aboh)	5°32'N;	6°31'E	Kware	13°11'N;	5°16'E
Amper	9°22'N;	9°42'E	Maiduguri	11°49'N;	13°09'E
Azumini	4°57'N;	7°29'E	Oban Hills	5°18'N;	8°35'E
Bambur	9°30'N;	11°22'E	Okoloma	4°52'N;	7°13'E
Bauchi	10°19'N;	9°51'E	Rimi	10°51'N;	7°42'E
Illela	13°39'N;	5°18'E	Sherifuri	12°20'N;	10°38'E
Ipake Forest Reserve	6°54'N;	3°00'E	Sokoto	13°03'N;	5°15'E
Jos	9°55'N;	8°53'E	Wushishi	9°44'N;	6°04'E
Jos-Miango Road	9°53'N;	8°50'E	Yemoji, Nr. Ijebu-Ode	6°48'N;	3°56'E
Kalgo	12°19'N;	4°09'E	Yo	13°33'N;	13°14'E
Kano	12°00'N;	8°30'E	Zaria	11°09'N;	7°40'E
Katagum	12°16'N;	10°21'E	Zonkwa	9°47'N;	8°18'E
Kwal, Nr. Miango	9°49'N;	6°39'E			

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## PHOTOGRAPHS

All the illustrations are enlargements from negatives that were produced from 35mm. coloured slides.

Note: It is sad to record that the Zaria University specimens referred to in this article have been destroyed by a recent fire.



## ACKNOWLEDGEMENTS

My thanks are expressed to Professor Alan Mead of Zaria University for allowing me to examine specimens in his care and for copies of relevant literature; to Miss A. G. C. Grandison and Mr. E. N. Arnold of the British Museum (Natural History) for information, literature and records; to Mr. Max Ammer and Mr. Zeno Kramer for specimens of *Holaspis* from Port Harcourt area and for information; to Miss Pauline Drew of Bristol University for allowing me to examine and record her specimens.

## PART I—THE CHAMELEONS OF NIGERIA

*Errors and Omissions*

- p.54 Below fig. 1 add the definition of the word casque.  
The casque is the upper and posterior part of the skull that forms a helmet-like projection and which is bounded by the lateral and parietal crests.
- p.57 Fig. 2 caption: for *Ch. gracilis* read *Ch. basiliscus*.
- p.57 Fig. 3: Alongside the three diagrams of dorsal keel structure, insert, from above downwards, the names:—  
*Ch. widdersheimi* (from Nsukka collection)  
*Ch. widdersheimi* (from Mambilla Plateau)  
*Ch. oweni*
- p.61 Last para, 3rd line—read *Field* and not *Fielp*
- p.72 Caption to lower photograph—read Mambilla and not Marnbille
- p.73 Key to the Chameleons of Nigeria—1st line of key pertaining to *Ch. widdersheimi*—substitute 'ventral crest present or absent' for 'no ventral crest'.
- p.73 Add to list of places cited for records:—
- |        |          |        |         |          |        |
|--------|----------|--------|---------|----------|--------|
| Gusau  | 12°11'N: | 6°40'E | Kware   | 13°11'N: | 5°16'E |
| Ibi    | 8°11'N:  | 9°45'E | Nsukka  | 6°51'N:  | 7°23'E |
| Jebba  | 9°08'N:  | 4°48'E | Onitsha | 6°10'N:  | 6°48'E |
| Kaduna | 10°31'N: | 7°25'E | Rimi    | 12°51'N: | 7°42'E |

*Addendum*

This year (May 20th, 1967) I collected seven newly hatched chameleons (*Ch. g. gracilis*) from a low bush in Jos thus confirming the hypothesis that hatching takes place during the early rains.