GHANESE LIZARDS OF THE GENUS *MABUYA* (SCINCIDAE, SAURIA, REPTILIA)

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With 19 text-figures and 6 plates

SUMMARY

In the present paper the eight species of *Mabuya* occurring in Ghana are discussed. A key for their indentification is given. Two of the species reported for Ghana were known only from the rainforest in the Congo basin, now their presence in the rainforest west of the Dahomey-gap is demonstrated. One of these, *Mabuya albilabris* (Hallowell), has since long been considered a synonym of *M. blandingii* (Hallowell), but careful examination of large series proved that *M. albilabris* (Hallowell), is a perfectly good species, a view sustained by observations on both species in the wild. One species, of which ten specimens from Ghana and one from Nigeria are known, is described as new. A new subspecies of *Mabuya polytropis* Boulenger is described from the rainforest west of the Dahomey-gap. The name of the species known until now as *M. blandingii* (Hallowell) is changed into *M. affinis* (Gray).

INTRODUCTION

Among the Ghanese lizards, and among the West-African lizards in general, the skinks play an important role. Of the approximately 40 species of lizards occurring in Ghana not less than 13 belong to the family Scincidae, thus representing 31% of the lizard fauna. The remaining 69% are taken up by representatives of the Gekkonidae, Agamidae, Chamaeleonidae, Lacertidae, Gerrhosauridae and Varanidae, whereas in addition to these lizards at least one species of amphisbaenian (Amphisbaenidae) occurs. Of these families the Gekkonidae and Lacertidae provide the majority of the species, the other families are only represented by one, two or three species. In this light it is rather surprising that since Boulenger (1885) no key for the skinks of this area has been presented although it may be expected that Dunger will give one in a forthcoming issue of the series: "The lizards and snakes of Nigeria".

During a recent stay in Ghana, from March 16-June 6, 1972, I had the opportunity to collect fairly large series of skinks, which presented several problems when I tried to identify them. During my attempts to solve the problems I gained some interesting results which are presented below.

Although the reptile fauna of West-Africa is fairly well known, due mainly

to the work of Doucet (1963), Dunger (since 1967), Grandison (1956, 1968, 1969), Hughes & Barry (1969), Loveridge (1952), Matschie (1891, 1893), Roux-Estève (1969), Sternfeld (1908-1910, 1909), Tornier (1901, 1902) and Villiers (1950, 1958, 1963), a thorough revision of the skink fauna until now was lacking and the present paper tries to fill at least part of this gap. In this study I only included the species of *Mabuya,* because confusion prevailed in this group, but also because other people at this moment are working on the further genera. Nearly all Ghanese specimens I examined came from localities in the southern part of the country. This most probably is due to undercollecting in the northern part of Ghana, as several of the species of *Mabuya,* treated here, are known from localities north of Ghana.

Genus **Mabuya** Fitzinger

Diagnosis. — A genus of skinks of moderate to large size, with cylindrical bodies, well developed, pentadactyle limbs and a moderately long to very long tail. In the palate, the palatine bones are in contact, the pterygoid bones are separated in the median line, the palatal notch extends forward to an imaginary line connecting the centres of the eyes. Preanal and femoral pores are absent in both sexes. All Ghanese species possess an undivided, transparent disc in the lower eyelid. The ear-opening is distinct, well developed, with a recessed tympanum. Nostril in a single nasal; supranasals, prefrontals, frontoparietals and interparietal present. In all Ghanese species there are four supraoculars, two loreals, seven or eight supralabials of which the fifth is under the eye, and two scales between the posterior loreal and the subocular. Infralabials seven to nine, mostly eight. Mental followed by a postmental and two pairs of chin-shields. All teeth are conical. The tongue is slightly notched at the tip and is covered with scale-like, imbricate papillae, which are arranged in oblique rows. In all Ghanese species the head is short and wide, distinctly depressed, as wide as the neck (except in *M. buettneri,* where the neck is narrower than the head and also narrower than the body), which is as wide as the adjoining part of the body. Snout rounded. The pupil is round.

Key to adult specimens of the Ghanese species of *Mabuya*

1. Scales around midbody more than 26, body stout, undamaged tail less than two and a half times as long as the snout-vent length 2
   Scales around midbody 26 (rarely 28), dorsal scales with three keels, supranasals separated (rarely just in contact), prefrontals forming a long suture, body long and very slender, the undamaged tail is up to four times as long as the snout-vent length . . . . . *Mabuya buettneri*
2. A pair of enlarged nuchals, maximum snout-vent length 120 mm 3
   A pair of enlarged nuchals absent, although some of the scales bordering the

posterior margin of the parietals may be enlarged, maximum snout-vent length 150 mm, dorsal scales with three keels, supranasals and prefrontals always forming a suture . . . . . *Mabuya perrotetii*

3. Majority of the dorsal scales in most specimens with three keels 4
   Dorsal scales in adult specimens with at least five keels 6
4. Scales around midbody 27-32 5
   Scales around midbody 35-40; females black with five longitudinal stripes, males brown above, head black with bluish-white spots on the sides; snout-vent length up to 90 mm; supraciliaries 4-6, mostly 5 . . . . *Mabuya quinquetaeniata scharica*
5. One scale between the last supraocular and the anterior supratemporal, prefrontals nearly always forming a long suture, supranasals mostly not forming a suture . . . . . *Mabuya albilabris*
   Two scales between the last supraocular and the anterior supratemporal, prefrontals mostly separated, when in contact they just form a short suture, supranasals in about 2/3 of the specimens forming a suture, separated in the rest . *Mabuya affinis*
6. When laid along the body the forelimbs and hind limbs do show a considerable overlap, 45-62 dorsals between the nuchals and the base of the tail 7
   When laid along the body the forelimbs and hind limbs just touch, dorsal scales with five keels, temporals strongly keeled, first supratemporal very large, 59-66 dorsals between the nuchals and the base of the tail, 59-71 ventrals between the chin-shields and the vent . . . . . *Mabuya rodenburgi*
7. Supraciliaries usually 5, a distinct white stripe bordered by dark-brown above and below from the upper lip to the base of the forelimb, no transverse marks on the back, 51-62 dorsals between the nuchals and the base of the tail, dorsals in adult specimens with 5-7 keels . . . . . *Mabuya m. maculilabris*
   Supraciliaries 6-8, no white stripe bordered by dark-brown from the upperlip to the base of the forelimb, back with wavy, transverse, dark-brown bands, 45-51 dorsals between the nuchals and the base of the tail, dorsals in adult specimens with 5-10 keels . . . . . *Mabuya polytropis occidentalis*

As in juveniles the dorsal scales in all species only bear three keels it seems useful to give a key to the juveniles of *Mabuya* partly based on other characters than those used for the adults. Unfortunately, for one species, viz. *M. buettneri* Matschie, no juveniles are available, but on the basis of what I knew of the adults I thought it permissable to include them in the key and sort them out on characters known to me from the adult specimens.

Key to juvenile specimens of the Ghanese species of *Mabuya*

1. Scales around midbody more than 26, body stout, undamaged tail less than twice as long as the snout-vent length 2
   Scales around midbody 26 (rarely 28), body long and very slender, undamaged tail about three times as long as the snout-vent length . . . *Mabuya buettneri*
2. Only one scale between the last supraocular and the anterior supratemporal . . . . . *Mabuya albilabris*
   Two scales between the last supraocular and the anterior supratemporal . . . 3
3. Body brownish with two or three longitudinal light stripes 4
   Body black with five longitudinal light stripes . . *Mabuya quinquetaeniata scharica*
4. One pair of transversely enlarged nuchals 5
   Several scales along the posterior border of the parietals enlarged, never a single pair . . . . . *Mabuya perrotetii*

5. Less than 63 dorsals between the nuchals and the base of the tail, legs when laid along the body showing a considerable overlap, interparietal slightly longer than wide 6
More than 59 dorsals between the nuchals and the base of the tail, legs when laid along the body just touching, interparietal much longer than wide . *Mabuya rodenburgi*
6. Six, seven or eight (rarely five) supraciliaries, scales around midbody 28-34, a white stripe from the upper lips to the groin may be present, upper and lower eyelid with a white rim 7
Five (rarely six) supraciliaries, scales around midbody 32-36, a white stripe from the upper lips to the axilla is always present, lower part of subocular, sixth and seventh supralabial black, upper eyelid with a white rim, rim of lower eyelid only white near the corners of the eye . . . . . *Mabuya m. maculilabris*
7. Palms, soles and subdigital lamellae dark-brown, back brown with wavy, irregular, dark-brown transverse brands, ear-opening a vertical oval . . . . . *Mabuya polytropis occidentalis*
Palms and soles whitish, subdigital lamellae greyish, back brown without transverse bands, ear-opening an oblique oval . . . . . *Mabuya affinis*

Mabuya affinis (Gray)

Tiliqua affinis Gray, 1838: 289; Gray, 1845: 109 (partly).
Euprepis Blandingii Hallowell, 1844: 58; Vaillant, 1884: 169.
Euprepes Raddoni Gray, 1845: 112; F. Müller, 1882: 159; Boettger, 1887: 56.
Euprepes aeneofuscus Peters, 1864: 54; Peters, 1867: 21.
Euprepes Stangeri F. Müller, 1882: 150.
Mabuia raddonii: Boulenger, 1887: 165 (partly).
Mabuia affinis: Boulenger, 1887: 166.
Mabuya blandingii: Cansdale, 1951: 23; Cansdale, 1955: 68, 103; Hoogmoed, 1973a: 260; Hoogmoed, 1973b: 218.
Mabuya blandingi: Grandison, 1956: 235.

Type locality. — Unknown.

Material. —
WEST AFRICA: 1 ex., BM 1946.8.19.52, leg. Raddon (type of *Euprepes Raddoni* Gray).
SIERRA LEONE.
Sierra Leone: 1 ex., BM 1946.8.18.44, leg. S. Stahl (type of *Euprepes pantaenii* Fischer).
Miramira: 1 ex., Coll. Lamotte, no number, leg. M. Lamotte.
LIBERIA.
Liberia: 1 ex., BM 1908.7.24.3., leg. A. McCloy.
Robertsport: 1 juv., RMNH 17320, 23/27-VIII-1881, leg. J. Büttikofer & J. A. Sala.
Cape Mount: 2 ♀ ♀, RMNH 17321, 12-V-1881, leg. J. Büttikofer & J. A. Sala.
Schiffelinsville: 3 ♂ ♂, 2 ♀ ♀, RMNH 17322, 1886-1887, leg. J. Büttikofer & F. X. Stämpfli.
Soforé Place, St. Pauls River: 1 ♀, RMNH 17323, 30-VII-1880, leg. J. Büttikofer & J. A. Sala.
GUINEA.
Guinea: 1 ♂, MHNP 1951-156, leg. M. Lamotte.
Yalanzou: 1 juv., 2 ♂ ♂, MHNP 1943-38/40, leg. M. Lamotte.
Mount Nimba: 2 juvs., MHNP 1951-88, 1 ♂, MHNP 1951-96, all leg. M. Lamotte.
Kéoulenta: 1 ♂, MHNP 1951-89, leg. M. Lamotte.
Bossou: 1 ♂, MHNP 1951-91, leg. M. Lamotte.

N'Zo: 1 ♂, MHNP 1951-93, leg. M. Lamotte.
Nion: 1 ♀, MHNP 1951-94, leg. M. Lamotte.
Gouéla: 2 juvs., MHNP 1951-97/98, leg. M. Lamotte.
Guélémata: 1 ♂, MHNP 1951-100, leg. M. Lamotte.
Bakoré: 1 ♂, MHNP 1951-154, leg. M. Lamotte.
IVORY COAST.
Soubré: 2 ♂ ♂, 1 ♀, BM 1972.858-60, leg. R. Barbault.
Lamto: 1 ♂, 1 ♀, 2 ex., Coll. Lamotte, B-G. 13-16, leg. M. Lamotte.
Abidjan: 1 ♂, 5 ♀ ♀, RMNH 17324, June 1968, 2 ♀ ♀, RMNH 17325, May 1968, all leg. W. J. Scheffers; 1 ♂, RMNH 17326, 17 km W., 17-VII-1963, 1 ♂, RMNH 17327, 17 km W., 25-VII-1963, both leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.
GHANA.
Ghana: 1 ♀, NHMB 4431, 1865, leg. Dieterley.
Malue: 1 ex., BM 1927.9.27.200, leg. C. M. Ingoldby.
Asankranswa: 1 ex., BM 1969.2862, leg. K. R. Livingstone.
Prang: 2 ex., BM 1938.1.12.6-7, leg. C. S. Webb.
Ajufia: 1 ♀, RMNH 17329, 7 miles N.W., 19-V-1972, 1 ♂, RMNH 17328, 3.5 miles N., 21-V-1972, 1 ♀, RMNH 17330, 10 miles S., 20-V-1972, all leg. M. S. Hoogmoed.
Bia Tributaries South Forest Reserve: 1 ♂, RMNH 17331, SE. corner, 20-V-1972, leg. M. S. Hoogmoed.
Sefwi Asempanaye: 1 ♀, RMNH 17334, 9 miles W., 18-V-1972, 1 ♀, RMNH 17333, 5 miles W., 18-V-1972, 1 ♂, RMNH 17336, W., 22-V-1972, 1 ♀, RMNH 17332, 16-V-1972, 1 juv., RMNH 17335, 19-V-1972, all leg. M. S. Hoogmoed.
Dixcove: 1 juv., RMNH 17337, 2 miles N., 1-V-1972, leg. M. S. Hoogmoed.
Boutry: 1 ♂, 1 juv., RMNH 2463, leg. H. S. Pel.
Sekondi: 2 ♂ ♂, RMNH 17338, leg. H. S. Pel.
Ahamameti: 1 ex., BM 1972.854, leg. D. Barry & B. Hughes.
Tafo: 1 ex., BM 1967.202, leg. D. Leston.
Akropong: 1 juv., NHMB 4433, 1865, leg. Dieterley.
Accra: 1 ♀, BM 1955.1.2.48-50, leg. A. H. Booth; 1 ♀, NHMB 4432, leg. E. Mähly.
Shai Hills: 1 juv., RMNH 17339, 13-IV-1972, leg. M. S. Hoogmoed.
Kpong: 1 ♀, RMNH 17340, 3 miles S., 15-IV-1972, leg. M. S. Hoogmoed.
Avenui-Awudomé: 1 ♂, 4 ♀ ♀, RMNH 17341, 3-IV-1972, leg. M. S. Hoogmoed.
Kpandu: 1 ♂, 1 ♀, RMNH 17342, 24-III-1972, 1 ♂, RMNH 17343, 23-III-1972, 1 ♂, 1 ♀, RMNH 17344, 27-III-1972, 2 ♂ ♂, RMNH 17345, 1-IV-1972, all leg. M. S. Hoogmoed; 1 ♂, RMNH 17346, 6-VI-1971, leg. W. F. Rodenburg.
Alavanyo Abehenasi: 1 ♂, RMNH 17347, 20-IV-1972, 1 ♂, 1 juv., RMNH 17348, 12/13-V-1972, all leg. M. S. Hoogmoed.
Lolobi: 1 ♂, RMNH 17349, 18-IV-1972, 2 ♂ ♂, RMNH 17350, 18-IV-1972, 2 ♂ ♂, 1 ♀, 2 juvs., RMNH 17351, 19-IV-1972, 2 juvs., RMNH 17352, 19-IV-1972, all leg. M. S. Hoogmoed.
Amedzofe: 1 ♂, RMNH 17353, 5-IV-1972, 3 ♂ ♂, RMNH 17354, 5-IV-1972, all leg. M. S. Hoogmoed.
Between Vane and Biakpa: 1 juv., RMNH 17355, 7-IV-1972, leg. M. S. Hoogmoed.
TOGO.
Togo: 1 ex., RMNH 5856, bought from F. Werner.
NIGERIA.
Nigeria: 1 ♀, BM 1970.2458, leg. G. T. Dunger.
Lagos: 1 ex., BM 1960.1.1.26, leg. G. T. Dunger.
Ibadan: 4 ex., BM 1969.3001-3004, leg. R. S. Oldham.
Yemoje, near Ijeba-Ode: 1 ex., BM 1970.2457, leg. G. T. Dunger.
Old Sangama, Niger-delta: 1 juv., RMNH 17356, May-August 1960, leg. H. J. G. Beets.

CAMEROON.
50 km SW of Eseka: 1 ♀, RMNH 17357, December 1963, leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.
Efulen: 1 ♂, RMNH 4530, leg. G. L. Bates.
GABOON.
Benito River: 2 ex., BM 1946.8.18.37-38, leg. G. L. Bates (syntypes of *Mabuia benitensis* Boulenger); 1 ♂, BM 1901.6.26.3, 1902.11.12.16-20 (label 29 attached), leg. G. L. Bates.
Mitzii (= ?Mitzic): 1 juv., BM 1958.1.2.98, leg. Cambridge French West Africa Expedition.
RIO MUNI.
Evinayong: 2 ♂♂, 1 ex., 1 juv., BM 1965.1426-29, leg. J. Oates.

Diagnosis. — A medium-sized lizard with a moderately long tail. A pair of nuchals is present, the supranasals may be separated (± 40%) or may be in contact (± 60%), the prefontals may be separated (84%) or they may be in contact (16%). Between the fourth supraocular and the anterior supratemporal there are two scales. The number of lamellae under the fourth toe varies between 16 and 21, but mostly is 18-20. Under the fourth finger there are 12-16, mostly 15-16 lamellae. Brown above, often with four longitudinal rows of black spots, the rows arranged in two pairs. Flanks dark-brown to black, ventrally with or without a distinct white stripe from the upper lip to the groin. Belly white, usually without black spots on the throat, when present these are very small.

Description. — Head short and wide, representing 22-24% of the snout-vent length in males, 20-24% in females and 23-28% in juveniles; 1.8-2.3 times as long as deep in males, 1.8-2.1 times in females, 1.9-2.4 times in juveniles; 1.4-1.7 times as long as wide in adults, 1.5-1.8 times in juveniles. Rostral pentagonal, clearly visible from above, 1.5-2 times as wide as deep. A pair of small, elongately rectangular supranasals, which in 49 (42%) of the specimens are separated and are in contact or form a short median suture in 67 (57%) examples, whereas in two specimens the tip of the snout was damaged. Frontonasal large, irregularly hexagonal, approximately one and a half times as wide as long. Prefrontals trapezoid or rectangular; separated in 100 (85%) specimens, in contact or forming a short median suture in 16 (14%) specimens, with an additional small scale between them in two examples (1%). Frontal elongate, rhomboidal, longer than its distance to the tip of the snout and one and a half times to twice as long as wide; it is in broad contact with the second supraocular, but narrow sutures with first and third supraocular may or may not be present. A pair of irregularly pentagonal frontoparietals, forming a long median suture. Interparietal rhomboidal, approximately one and a half times as long as wide. Parietals irregularly shaped, wider than long; in 84 specimens examined for this

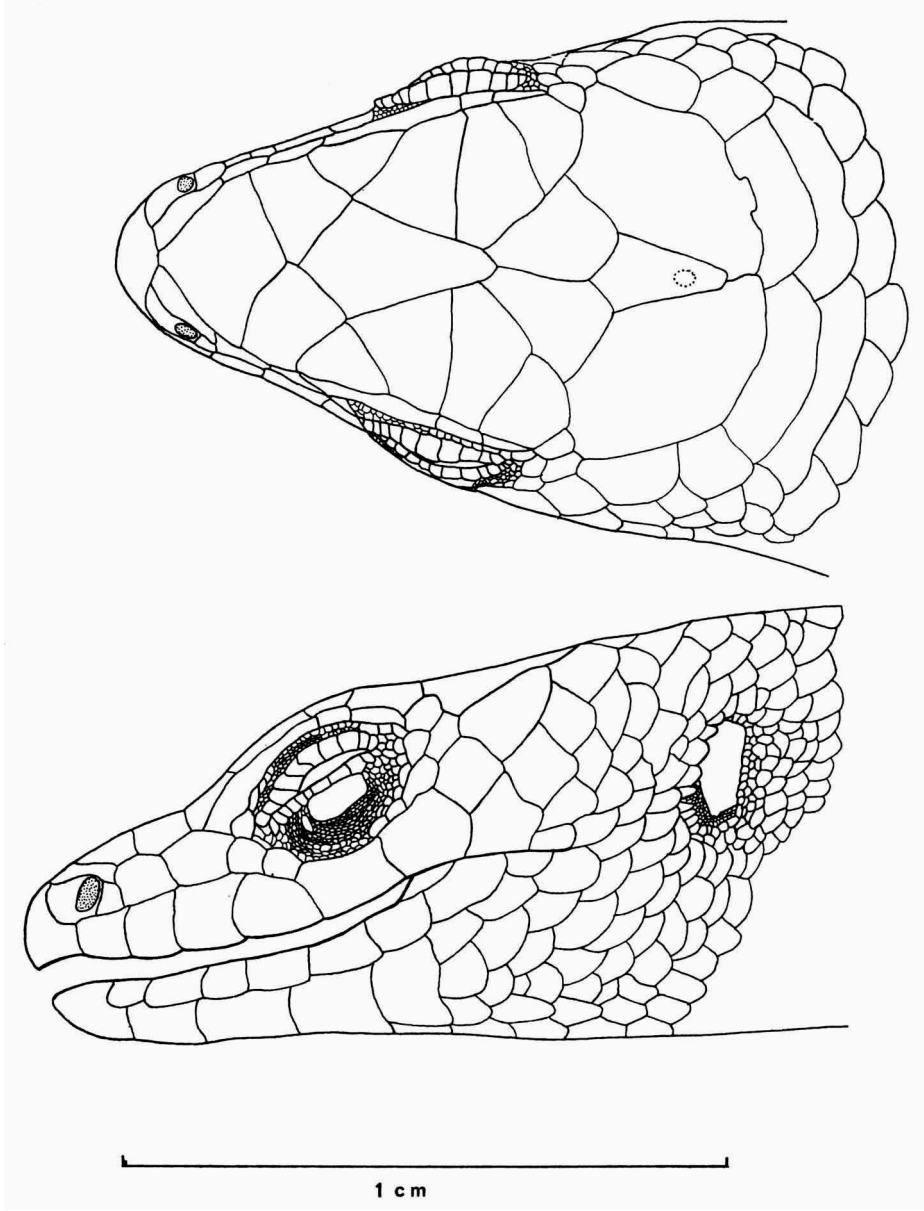

Fig. 1. *Mabuya affinis* (Gray); dorsal and lateral view of the head of ♂, RMNH 17353, Amedzofe.

character, they form a short suture behind the interparietal in 57 (68%) specimens, in 24 (29%) they do not touch each other, and in the remaining three specimens this area was damaged. A pair of transversely enlarged nuchals, three to four times as wide as long, posterior border with many (up to 14) indistinct keels. Four supraoculars, the first smallest, the second largest. Supraciliaries four to eight, mostly six or seven, in direct contact with the supraoculars. Two small scales, which might be termed supra-postoculars, between the fourth supraocular and the anterior supratemporal. Two supratemporals, the posterior one larger than the anterior one. Temporals few and large, the anterior one largest, the rest smaller; in four or five vertical rows between the postoculars and the ear-opening. Ear-opening large, vertically oval, anterior margin with two to five, mostly three small rounded lobules, posterior margin smooth; external auditory meatus moderately long, tympanum clearly visible.

All head scales smooth, except the posterior temporals which are slightly keeled.

Gulars and ventrals smooth, cycloid, imbricate, in longitudinal and obliquely transverse rows, ventrals larger than gulars. Collar absent. Forty-five to 61 (mean 53.8) scales along the median between the first pair of chin-shields and the preanals (figs. 3, 17). Scales on the nape hexagonal, much wider than long, imbricate, with three, four or five (rarely up to seven) keels. Scales on the side of the neck cycloid, smaller than the dorsals, imbricate, with three keels. Scales on the nape and on the side of the neck in longitudinal and obliquely transverse rows.

Dorsals and laterals identical; imbricate, mostly with three keels (but fairly regularly with five or even seven keels), hexagonal, slightly wider than long, in longitudinal and oblique series. Forty-five to 54 (mean 49.9) transverse rows of scales between the nuchals and the base of the tail (figs. 4, 18). No distinct boundary between the laterals and the ventrals. Total number of scales around midbody 28-32, usually 30-32 (fig. 19), most specimens having an even number. Preanal plate covered with scales identical with the ventrals, except the four median scales bordering the vent anteriorly, which are slightly enlarged.

Scales on the dorsal and lateral surfaces of the tail like the dorsals, except for the number of keels per scale. Posteriorly the number of keels per scale increases to a maximum of seven, though near the tip all scales are smooth. Under the tail one row of transversely enlarged, smooth, hexagonal, imbricate scales is present. The regenerated part of the tail is covered with smooth scales: one transversely enlarged vertebral row, one transversely enlarged row of subcaudals and one row of laterals on each side. Tail round in cross-section. Near the tip it is laterally compressed.

Scales on the limbs cycloid, imbricate, smaller than the dorsals, in longitudinal and obliquely transverse rows; smooth on the forelimbs, ventral and posterior surfaces of the hind limbs, tricarinate on the anterior and dorsal surfaces of the hind limbs. Twelve to 16, mostly 15-16 (mean 14.8) (figs. 5,16), single, smooth lamellae under the fourth finger; 16-22, mostly 18-20 (mean 18.6) (figs. 5, 16), single, smooth lamellae under the fourth toe; the fourth finger and toe only have a slightly serrated profile. Palms and soles covered with small, juxtaposed, slightly tubercular to flat scales, not forming longitudinal rows. Both fingers and toes are compressed.

Colour in life. Back brown, with dark-brown spots, often arranged in two pairs of longitudinal rows, head and neck may be reddish brown, flanks dark-brown, a wide, well-defined white, cream-coloured or yellow stripe from upper lip to groin is present in most specimens, but in quite a few this stripe is absent. Sides of head in males frequently orange, rarely so in females, this colour extends to the sides of the throat. Throat white, belly white in females, yellow to pale orange in males, ventral surface of tail grey in females, yellow or orange in males. Iris golden brown.

Colour in preservative. Two types may be distinguished, in one there is a distinct white stripe on the lower part of the flanks, in the other this stripe is missing. The majority of the specimens belongs to the type in which the stripe is present and this will be described first. There is no difference between the sexes regarding the presence or absence of the stripe. The back is brown with dark-brown spots restricted to the lateral part of some of the dorsal scales. Often these spots form four longitudinal rows, arranged in two pairs. A dark-brown, well-defined lateral band from just before the eye, via the eye, over the ear-opening to the groin. This lateral band also may consist of scales which have largely the same colour as the back, with dark-brown zones along their margins. Dorsally this band may be bordered by an indistinct lighter stripe or by a series of white spots. Ventrally the lateral band is bordered by a white stripe, one scale wide, occupying adjoining halves of two scales rows. This white stripe starts on the upper lip below the eye, passes through the ear-opening, over the insertion of the forelimb and ends in the groin. Both dorsally and ventrally it is bordered by a narrow black stripe half a scale wide. Anterior supralabials greyish to light-brown, posterior ones with ill-defined greyish or brownish mottling, sutures not darker. Infralabials may be immaculate, or black spots near the posterior and anterior margins may be present. Eyelids with a continuous white rim around. Belly white to creamish; throat white, occasionally a number of very small black spots is present, which may or may not be arranged in longitudinal rows. Upper surface of the limbs of the same colour as the back, sometimes with dark-brown and white spots.

The second type agrees mostly with the first, except that here both the dark-brown lateral band and the light lateral stripe are missing. The flanks are of the same colour as the back, turning greyish brown towards the belly, and gradually merging into the colour of the belly. On the side of head and neck an indication of the dark-brown lateral band still is present, sometimes as a short longitudinal band, sometimes only in the form of a few dark-brown scales. Between these two extreme types there are all possible intermediate forms linking them together.

A medium-sized lizard of normal build with well developed legs. Maximum snout-vent length in Ghanese females 76 mm, a female from Eseka, Cameroon was 81 mm and one from Schiffelinsville, Liberia 80 mm. The maximum snout-vent length recorded for Ghanese males was 76 mm, a value also attained by a male from Abidjan, Ivory Coast. Recently hatched juveniles have snout-vent lengths of 29-30 mm. When the limbs are laid along the body, the tip of the fourth toe reaches to near the elbow. The undamaged tail is 1.7-2.0 times as long as the snout-vent length in females, 2.0-2.2 times in males and 1.8-2.2 in juveniles.

Habitat. — Inhabits both savanna, forest and gardens. In the first type of habitat I always found it associated with water, where also trees and shrubs are concentrated, in the second type it was frequently found near water, but sometimes far away from it. In the third type of habitat it was present near artificial structures like walls. Specimens could be found on the buttresses of trees up to 2 m above the forest-floor and on the forest-floor itself among fallen leaves.

Natural history. — A diurnal species which was active between 9.30 a.m. and 6.00 p.m. Several times it was found during frog hunting after sunset, sleeping on branches overhanging water. Although this species is active throughout the day, it was only seen basking in the late afternoon. Recently hatched juveniles were found in April and May, but collecting did not take place with the same intensity throughout the year, so these data do not mean much. Pregnant females each containing 2 eggs were found in late March and early April, but again, no representative series of females collected throughout the year is available.

Range. — From Northern Angola along the West-African coast to Senegal (Grandison, 1956).

Remarks. — Under the heading *M. albilabris* I will discuss at length my decision to consider that species and the present one as separate, so here I only refer to that part of the present paper.

There has been a lot of confusion about the correct name of the species under discussion. Before 1887, when Boulenger's "Catalogue of Lizards" appeared, it was known under several names of which the best known were *M. raddoni* (Gray) and *M. blandingii* (Hallowell). Boulenger (1887) synonymised all these names and retained the name *raddoni* Gray for it. According to Loveridge (1936), acting on the authority of Mr. W. Wedgewood Bowen, Boulenger erroneously thought that both Gray's and Hallowell's papers appeared in 1845. However, it seems to be certain that Hallowell's paper appeared "on or before July 19, 1844". Consequently Loveridge (1936) changed the name of the present species into *M. blandingii* (Hallowell), a name which has been used by most authors (not by Manaças, 1951) since then. It seems unfortunate that another change in name has to take place now, but it seems to be inevitable.

In 1838 Gray published a short description of *Tiliqua affinis*, of which he had a single specimen of unknown origin before him. Boulenger (1887) listed this species separately and stated that it was near *M. raddoni* of which it differed "in the rather more elongate head, longer limbs, and the presence of five supraciliaries instead of six or seven". During a study of West-African skinks Miss A. G. C. Grandison of the British Museum of Natural History, examined the type of *affinis* (BM 1946.8.18.21/XIV 929) and concluded that it was conspecific with the nominal species *blandingii*. After studying the data she provided I completely agree with her and and I consequently synonymise *M. blandingii* (Hallowell) with *M. affinis* (Gray).

Mabuya albilabris (Hallowell)

Euprepes albilabris Hallowell, 1857: 50.
? *Euprepes frenatus* Hallowell, 1857: 49.
Euprepes aureogularis Müller, 1885: 707.
Mabuia raddoni: Boulenger, 1887: 165 (partly).
Mabuia albilabris: Boulenger, 1905: 184.
Mabuya raddoni: Schmidt, 1919: 534 (partly); Manaças, 1951: 60.
? *Mabuia Raddoni*: Chabanaud, 1921: 465 (partly).
Mabuya blandingii: Loveridge, 1936: 66 (partly).
Mabuya albilabris: Hoogmoed, 1973a: 262; Hoogmoed 1973b: 220.

Type locality. — Gaboon.

Material. —
GUINEA.
Ziéla: 1 ♂, coll. Lamotte, 1956-1957; 1 ex., coll. Lamotte, March 1957; 1 juv., MHNP 1951-90, leg. M. Lamotte.
Bossou: 1 ♀, MHNP 1951-92, 1 ♂, MHNP 1951-155, both leg. M. Lamotte.
Gbata: 1 ♀, MHNP 1951-95, leg. M. Lamotte.
Kéoulenta: 1 ♀, MHNP 1951-99. leg. M. Lamotte.
Yalanzou: 1 ♀, MHNP 1943-41, leg. M. Lamotte.
IVORY COAST.

Danané: 1 ex., BM 1926.9.24.16, leg. C. L. Collenette.
GHANA.
Bia Tributaries South Forest Reserve: 1 juv., RMNH 17317, SE. part, 20-V-1972, leg. M. S. Hoogmoed.
Ajufia: 1 ♀, 1 juv., RMNH 17318, 3.5 miles N., 21-V-1972, leg. M. S. Hoogmoed.
Sefwi Asempanaye: 1 juv., RMNH 17315, 9 miles W., 18-V-1972, 1 ♀, RMNH 17314, 5 miles W., 18-V-1972, both leg. M. S. Hoogmoed.
Sayerano: 3 ♂♂, 2 ♀♀, RMNH 17316, 19-V-1972, leg. M. S. Hoogmoed.
Between Baku and Suponso: 2 ♂♂, 2 ♀♀, RMNH 17313, 25-IV-1972, leg. M. S. Hoogmoed.
Tafo: 4 ♂♂, 3 ♀♀, 2 juvs., BM 1967.201, 203-210, leg. D. Leston.
Accra: 1 ex., BM 1954.1.4.98, leg. A. H. Booth; 1 juv., 1 ♂, NHMB 4429-30, 1884, leg. E. Mähly.
CAMEROON.
N'Kolbison (8 km W. Yaoundé): 1 ♂, RMNH 17319, 24-II-1964, leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.
Efulen: 1 ex., BM 1902.11.12.33, leg. G. L. Bates.
RIO MUNI.
Cape St. John (= Cabo de San Juan): 1 ex., 1 juv., BM 1904.2.12.6-7, leg. Martinez de la Escolera.
Evinayong: 1 ex., BM 1965.1422, 2 ex., BM 1965.1423-24, 1 mile N., 1 ex., BM 1965.1425, 1.5 miles N., all leg. J. Oates.
GABOON.
Gaboon: 1 ♀, NHMB 1164.
Benito River: 5 ex., BM 1901.6.26.3, 1902.11.12.16-29, leg. G. L. Bates.
Mitzii (= ? Mitzic): 1 ex., BM 1958.1.2.97., leg. Cambridge French West Africa Expedition.
Fernan(d) Vaz: 1 ex., BM 1906.3.30.53, leg. Fea.
CONGO (BRAZZAVILLE).
Congo: 1 ♀, NHMB 5676.

Diagnosis. — A medium-sized lizard with a moderately long tail. A pair of nuchals is present, the supranasals are usually separated, the prefrontals form a distinct suture in most specimens. Only one scale between the fourth supraocular and the anterior supratemporal. The posterior supratemporal is larger than the anterior one. Dorsals tricarinate. The number of lamellae under the fourth toe varies between 14 and 18, but mostly is 15 or 16. Under the fourth finger there are 11-15, mostly 11 or 12 lamellae. Brown above, flanks dark-brown, either ventrally bordered by a narrow white lateral line or not. Belly greenish-white, males with black spots on the throat. A light spot on the side of the neck in adult specimens.

Description. — Head short and wide, representing 22-25% of the snout-vent length, distinctly depressed, 1.8-2.4 times as long as deep, 1.4-1.7 times as long as wide. Rostral pentagonal, clearly visible from above, 1.5-2 times as wide as deep. A pair of small, rectangular supranasals narrowly separated from each other by the rostral and the frontonasal forming a suture; only

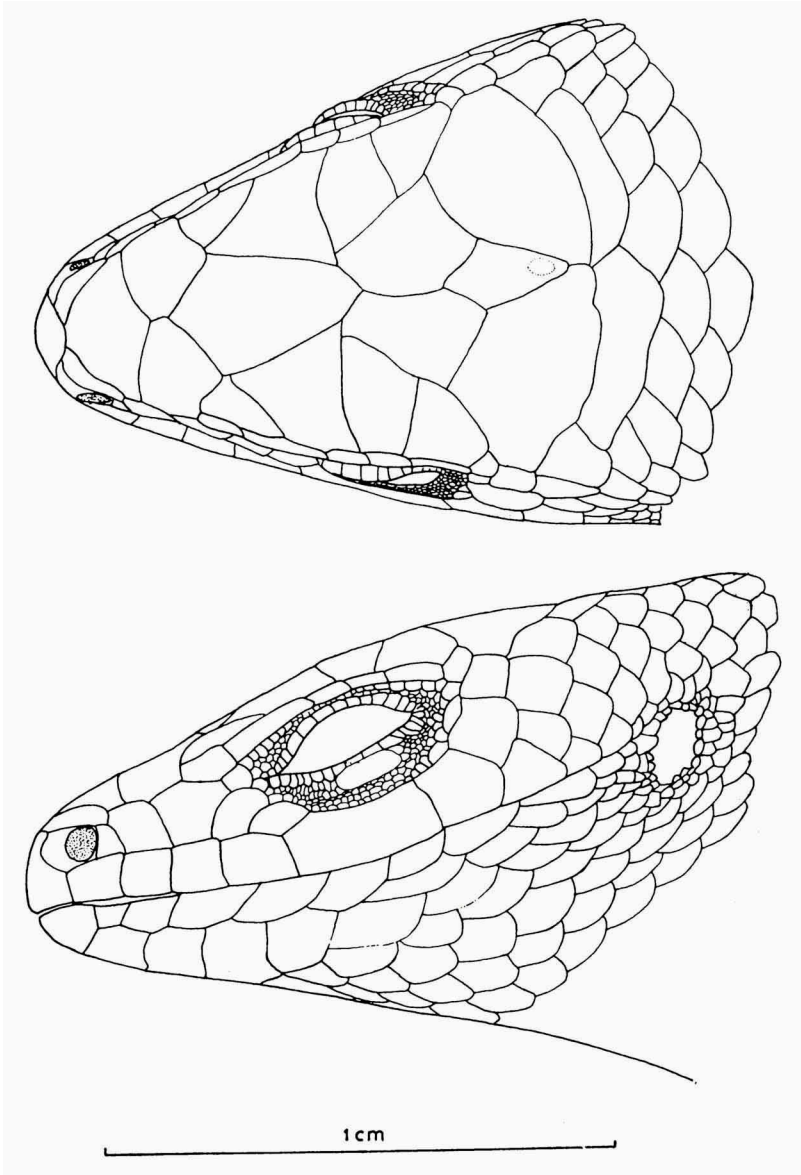

Fig. 2. *Mabuya albilabris* (Hallowell); dorsal and lateral view of the head of ♀, RMNH 17314, Sefwi Asempanaye.

in three out of 48 specimens examined the supranasals form a suture. Frontonasal large, irregularly hexagonal, approximately one and a half times as wide as long. A pair of irregularly pentagonal prefrontals, forming a longer (mostly) or shorter median suture, only in two out of 48 specimens the prefrontals were separated. Frontal elongate, rhomboidal, in adults longer than its distance to the tip of the snout and one and a half times as long as wide; usually it is in contact with the second supraocular only, but it may also touch the first and third supraocular. A pair of irregularly pentagonal frontoparietals, forming a long median suture. Interparietal rhomboidal, slightly longer than wide. Parietals irregularly shaped, wider than long, either forming a short suture behind the interparietal or not. A pair of transversely enlarged nuchals, more than three times as wide as long; posterior border with many (± 14) indistinct keels. Four supraoculars, the first smallest, the second largest. Supraciliaries five to eight, mostly

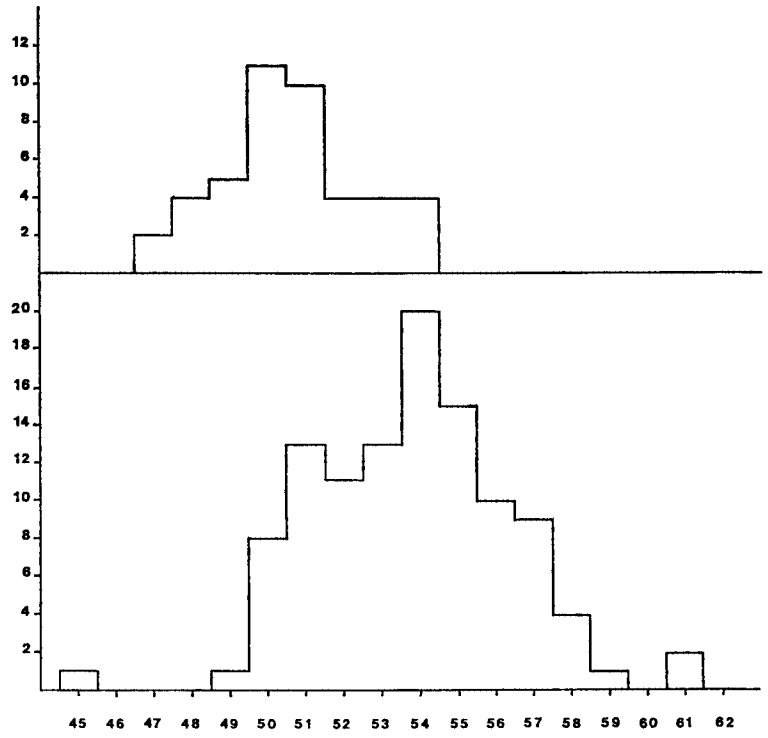

Fig. 3. Histograms showing the variation in the number of scales between the first pair of chin-shields and the preanals for *Mabuya affinis* (Gray) (lower figure) and for *M. albilabris* (Hallowell) (upper figure). The number of individuals showing a certain character state is on the ordinate, the number of scales is on the abscissa.

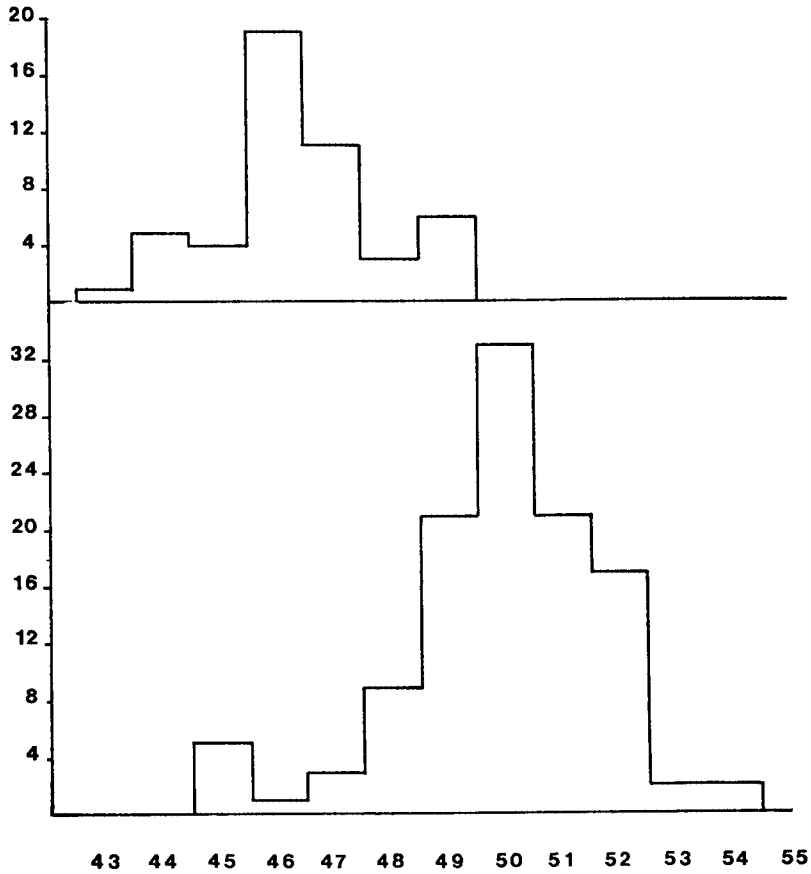

Fig. 4. Histograms showing the variation in the number of scales between the nuchals and the base of the tail for *Mabuya affinis* (Gray) (lower figure) and for *M. albilabris* (Hallowell) (upper figure). For further explanation see fig. 3.

six or seven, in direct contact with the supraoculars. Laterally the parietals are bordered by three scales, one small scale (suprapostocular) in contact with the fourth supraocular and two larger scales, the supratemporals. The posterior supratemporal is in contact with the nuchal and larger than the anterior supratemporal. Temporals few and large, decreasing in size posteriorly, in four or five vertical rows between the postoculars and the ear-opening. Ear-opening large, vertically oval; anterior margin with two or three small, rounded lobules, posterior margin smooth; external auditory meatus moderately long, tympanum well visible.

All head scales smooth, except the posterior temporals which are keeled.

Gulars and ventrals smooth, cycloid, imbricate, in longitudinal and obli-

quely transverse rows, ventrals larger than the gulars. Collar absent. Forty-seven to 54 (mean 50.6) scales between the first pair of chin-shields and the preanals (figs. 3, 17). Scales on the nape hexagonal, much wider than long, imbricate, with three, four or five keels. Scales on the side of the neck cycloid, smaller than the dorsals, imbricate, with three keels. Scales on the nape and on the side of the neck in longitudinal and oblique series.

Dorsals and laterals identical; imbricate, with three keels (rarely individual scales may have four or five), hexagonal, slightly longer than wide, in longitudinal and oblique series. No distinct boundary between the laterals and the ventrals. Total number of scales around midbody 27-32, mostly 28-30 (fig. 19), most specimens having an even number; 43-49 (mean 46.4) transverse rows of dorsals between the nuchals and the base of the tail (figs. 4, 18). Preanal plate covered with scales identical with the ventrals, except the four median scales bordering the vent anteriorly, which are slightly enlarged (= "preanals").

Scales on the dorsal and lateral surfaces of the tail like the dorsals. Posteriorly the number of keels per scale in the vertebral row, which consists of enlarged scales, may increase to a maximum of seven. Under the tail one row of transversely enlarged, smooth, hexagonal, imbricate scales is present. The regenerated part of the tail is covered with smooth scales: one transversely enlarged vertebral row, one transversely enlarged row of subcaudals and a row of laterals on each side. Tail round in cross-section. Near the tip it tends to be laterally compressed.

Scales on the limbs cycloid, imbricate, smaller than the dorsals, in longitudinal and in obliquely transverse series; smooth on the forelimbs, ventral and posterior surfaces of the hind limbs, tricarinate on the anterior and dorsal surfaces of the hind limbs. Eleven to 15, mostly 11-12 (mean 11.9) (figs. 5, 16), single lamellae under the fourth finger; 14-18, mostly 15-16 (mean 15.5) (figs. 5, 16), single lamellae under the fourth toe; the subdigital lamellae each form a raised knob, and thus the ventral surface of the fourth finger and toe show a serrated profile. Palms and soles covered with small, juxtaposed, distinctly tubercular scales, forming longitudinal rows. Both fingers and toes are compressed.

Colour in life. Back brown, flanks dark-brown, an ill-defined yellow stripe on the border of flanks and belly may or may not be present. From lips to insertion of forelimbs a wide yellow zone (in females) or a yellow spot in front of the forelimbs (in males). The belly and throat are greenish yellow in females, in males the throat is white with black spots, the belly is deep yellow. Iris dark-brown.

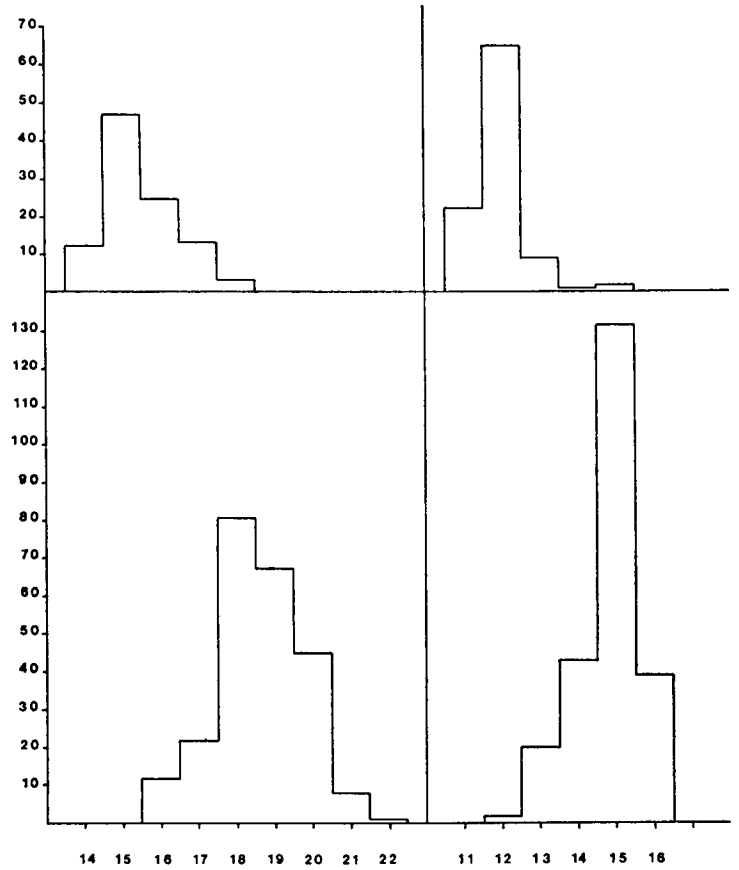

Fig. 5. Histograms showing the variation in the number of lamellae under the fourth toe (left) and under the fourth finger (right) for *Mabuya affinis* (Gray) (two lower figures) and for *M. albilabris* (Hallowell) (two upper figures). For further explanation see fig. 3.

Colour in preservative. Back brown with or without two longitudinal series of dark-brown spots running down the middle. A wide dark-brown band on the flank, from the anterior corner of the eye, over the ear-opening to the groin. In females and juveniles this band may be bordered dorsally by a narrow line or series of small cream-coloured spots. In juveniles and in females from the surroundings of Asempanaye in western Ghana, this band is bordered ventrally by a narrow white stripe from the upper lip via the ear, over the insertion of the forelimbs to the groin. In males this stripe is obscured and only more or less evident between the ear-opening and the base of the forelimb. The sutures between the supralabials may be black,

most infralabials bear a black spot near their posterior margin. Eyelids with a continuous white rim around. Ventral parts bluish white. Scales on sides of throat in males with black spots on their postero-lateral or posterior margin, forming longitudinal rows. The spotting seems to increase with age and invade the throat from the sides. In females it is more restricted. Upper surface of limbs of the same colour as the back, lower surface of the same colour as the belly.

A medium-sized lizard of normal build with well-developed legs. Maximum snout-vent length in Ghanese females 67 mm, in Ghanese males 64 mm. I measured specimens from outside Ghana, of which a male from Gaboon (BM 1901.6.26.3, 1902.11.12.16-20 (30)) was 71 mm. Of various specimens the sex could not be ascertained but several of them measured 73 mm. A female with a snout-vent length of 54 mm was already adult and contained mature eggs. Recently hatched juveniles have snout-vent lengths of 27-31 mm. When the limbs are laid along the body the fingers and toes overlap. The undamaged tail is 1.9-2.1 times as long as the snout-vent length in females, 2.0-2.1 times in males and 1.7-2.0 times in juveniles.

Habitat. — An inhabitant of the forest-floor in cocoa forest, where it may be found in the thick layer of large cocoa leaves covering the floor. Often it will be found between the buttresses of large trees, but I never saw one climbing a tree. An exception is formed by the juvenile RMNH 17315 which was found on the leaf of a fern 30 cm above the ground. The places where these lizards are found never are reached by bright sunlight, but only receive it in small, moving patches on the ground.

Natural history. — One female (RMNH 17316), collected May 19, with a snout-vent length of 54 mm, contained one mature egg. A recently hatched juvenile was collected on May 20, so there is not much that can be said of the reproductive cycle, except that this species seems to lay eggs.

Range. — The last author (Boulenger, 1905) to recognise *M. albilabris* only knew specimens from Cameroon, Gaboon and Rio Muni. The species is now known from Guinée, Ivory Coast, Ghana, Cameroon, Gaboon and Rio Muni. Probably it will also be found in the forested regions of Nigeria (fig. 6).

Remarks. — The description of this species by Hallowell in 1857 was based on one specimen from Gaboon. Since that year there has been a lot of confusion about the status of this species. Most authors, starting with Boulenger (1887), considered it synonymous with *Mabuya blandingii* (= *affinis*), but some doubt was cast on this opinion, when in 1905 Bou-

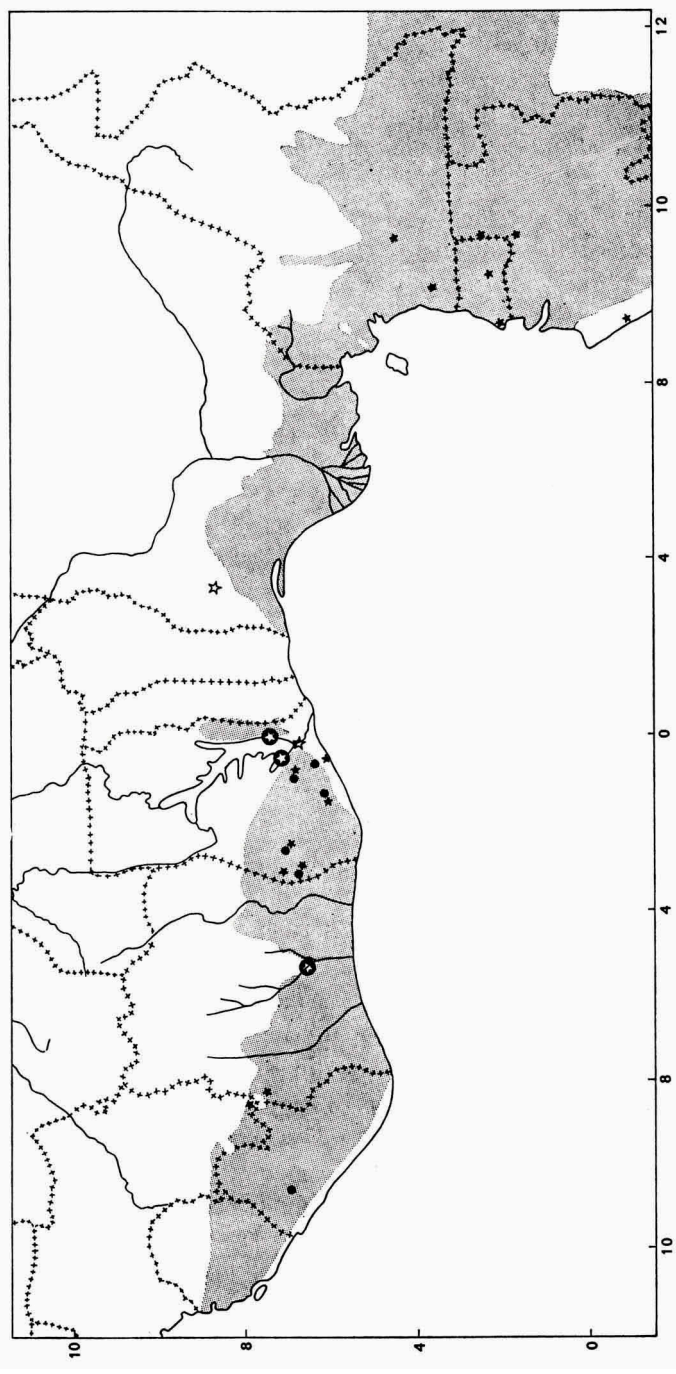

Fig. 6. Map of West-Africa showing the distribution of *Mabuya albilabris* (Hallowell) (black asterisks), *M. buettneri* Matschie (black dots with white asterisks inside), *M. polytropis occidentalis* nov. subspec. (black dots) and *M. rodenburgi* nov. spec. (open asterisks). The gray area represents rainforest.

lenger reconsidered his former decision and again revived *M. albilabris* from the synonymy after he had seen specimens recently collected in Benito, Cape St. John and Efulen in southern Cameroon.

His change of mind did not affect many other authors and most kept on considering *albilabris* a synonym of *blandingii* (= *affinis*). Chabanaud (1917) mentions both *albilabris* and *Raddoni* (= *affinis*) from Dahomey. The specimens he considered as *albilabris* turned out to belong to two different species: the females are *Mabuya perrotetii* (Duméril & Bibron), the male is *M. quinquetaeniata scharica* Sternfeld. Thus, we can disregard Chabanaud's record of *M. albilabris* from Dahomey. In 1921 this same author states that in ventral colouration and in the length of the suture between the prefrontals there are all possible transitions from the *Raddoni* (= *affinis*) type to the *albilabris* type, and he comes to the conclusion that either *albilabris* is a variety of *Raddoni* (= *affinis*), or two species are concerned which interbreed and of which the hybrids can not be identified with certainty. He did not dare to be as positive as Schmidt (1919), who considered *albilabris* again as a synonym of *blandingii* (= *affinis*). Schmidt based this opinion on a series of 19 specimens from the former Belgian Congo (now Zaïre) in which the prefrontals are separated in nine and form a suture in eleven specimens, and in which 18 specimens have the supranasals narrowly separated, whereas in two specimens they meet in a point. (N.B. It will be noted that Schmidt only mentions 19 specimens in his list of material, but when discussing certain character states the total of specimens sometimes attains 20, sometimes 21). The next author to discuss the *albilabris-blandingii* problem was Loveridge (1936), who, when studying material from the former French Congo (now Republic of Congo), Cameroon and Liberia, also came to the conclusion that there was no specific difference between the specimens in which the prefrontals form a suture and those in which they are separated. The most recent author dealing with *M. albilabris* and *M. affinis* is Manaças (1951). She is of the same opinion as Schmidt (1919) and Loveridge (1936) and considers *albilabris* and *affinis* not as distinct species, but at the same time she notices that specimens from "Guiné Francesca e doutras origens" (French Guinea and other localities), having the prefrontals in contact, also have bluish ventral parts. And it really is this combination that among other things is essential. Schmidt (1919) and Loveridge (1936) clearly attributed too much importance to the fact whether or not the prefrontals form a suture. As will be evident from the preceding description of *M. affinis,* there is considerable variation in this character and in itself it is not sufficient to separate *M. albilabris* and *M. affinis.* To achieve this goal one should take into account a complete array

of characters, which together ensure 100% certainty in identifying skinks of this complex. The most constant character is the number of scales between the fourth supraocular and the anterior supratemporal. In *albilabris* this always is one, no specimens were found with two scales. In *affinis* the number is nearly always two, only exceptionally it may be one.

Another important character in which the two species differ is the number of subdigital lamellae, low in *albilabris,* high in *affinis.* This is not a very clear-cut character because a certain amount of overlap occurs (Figs. 5, 16), but it is safe to say that specimens with 14 or 15 lamellae under the fourth toe and 11 or 12 lamellae under the fourth finger are *M. albilabris.*

Other useful characters can be found in the colour of both living and preserved specimens. In life *M. albilabris* shows a wide yellow zone from the lips to the insertion of the forelimbs or a yellow spot just in front of the forelimbs. In *M. affinis* there never is any yellow on the dorsal and lateral surfaces, at most the upper lips are orange. In *M. albilabris* the throat in males has black spots more or less clearly arranged in longitudinal rows. In *M. affinis* the throat is nearly always immaculately white. The ventral surface in preserved *M. albilabris* is bluish white, whereas in *M. affinis* it is pure white or yellowish white.

Also in ecology there is a difference, *M. albilabris* is found in forested areas only, where it keeps to the ground. *M. affinis* is associated with water and is found in the immediate surroundings of creeks and pools, either in the forest, on farmland or on the savanna. Moreover *M. affinis* does climb trees to a certain extent. I think that all characters discussed above are sufficient to warrant (after Boulenger) withdrawing *M. albilabris* again from the synonymy of *M. blandingii* and to consider the two as distinct species that on several places are found side by side. It might very well be that *Euprepes frenatus* from Liberia, described at the same time as *E. albilabris,* is a synonym of *albilabris,* but from the scanty data given by Hallowell it is not well possible to be sure about it. Unfortunately both the type of *albilabris* and that of *frenatus* seem to be lost (Schmidt, 1919; Loveridge, 1936; Malnate, 1971) so this assumption cannot be checked. I prefer to use the name *M. albilabris* instead of *M. frenatus,* though the second has page precedence over *albilabris,* because *albilabris* has been used several times and *frenatus* almost immediately was hidden in the synonymy of *blandingii,* from which it never again emerged. It seems useful to indicate a neotype for *M. albilabris* and for this I select a specimen in the British Museum (Natural History) from the Benito River in Gaboon (BM 1901.6.26.3), forming part of the material that caused Boulenger (1905) to revive

M. albilabris (Hallowell). The specimen is a male, which has a small tag, with the number 30 written on it, attached to it. The snout-vent length is 71 mm, the length of the tail is 134 mm, of which the last 37 mm are regenerated. It has 30 scales around midbody, 46 transverse rows of dorsals between the nuchals and the base of the tail, 51 scales between the first pair of chin-shields and the preanals; there are 12 lamellae under the fourth finger, 15 under the left and 16 under the right fourth toe. It has seven supralabials, seven supraciliaries and four supraoculars on each side. There is a pair of transversely enlarged nuchals. The prefrontals form a long suture, the supranasals are separated from each other. There are three scales between the fourth supraocular and the nuchal, one suprapostocular and two supratemporals. The throat bears black spots.

Mabuya buettneri Matschie

Mabuia büttneri: Matschie, 1893: 170.
Mabuya sudanensis Schmidt, 1919: 536.
Mabuya buettneri: Hoogmoed, 1973a; 258; Hoogmoed 1973b: 217.

Material. —
GHANA.
Ahamameti: 5 ♂ ♂, 3 ♀ ♀, BM 1972.846853, leg. D. Barry & B. Hughes.
Kpandu: 1 ♀, RMNH 17364, 16-I-1972, leg. W. F. Rodenburg.

Diagnosis. — A medium-sized lizard with long, slender body and limbs, fingers and toes just touching when limbs are laid along the body. Tail extremely long, up to four times the snout-vent length. A pair of nuchals is present, the supranasals are separated in most specimens, the prefrontals form a distinct suture in all specimens examined. There are two scales between the fourth supraocular and the anterior supratemporal. Dorsals tricarinate. The number of lamellae under the fourth toe varies between 15 and 19, but mostly is 16-17. Under the fourth finger there are 11-15, mostly 11-14, subdigital lamellae. Olive brown to light-brown above with large dark-brown spots arranged in longitudinal series. A narrow white line, bordered ventrally and dorsally by narrow dark-brown lines, from upper lip to just before the groin. Belly immaculate, yellowish white.

Description. — Head short and narrow, representing 19-20% of the snout-vent length in males, 17-19% in females, 2.3-2.6 times as long as deep, 1.8-2.0 times as long as wide. Rostral pentagonal, clearly visible from above, twice as wide as deep. A pair of small rectangular supranasals, in most specimens narrowly separated because rostral and frontonasal touch each other or form a suture, in two specimens they form a short suture. Frontonasal large, irregularly hexagonal, one and a half times to twice as

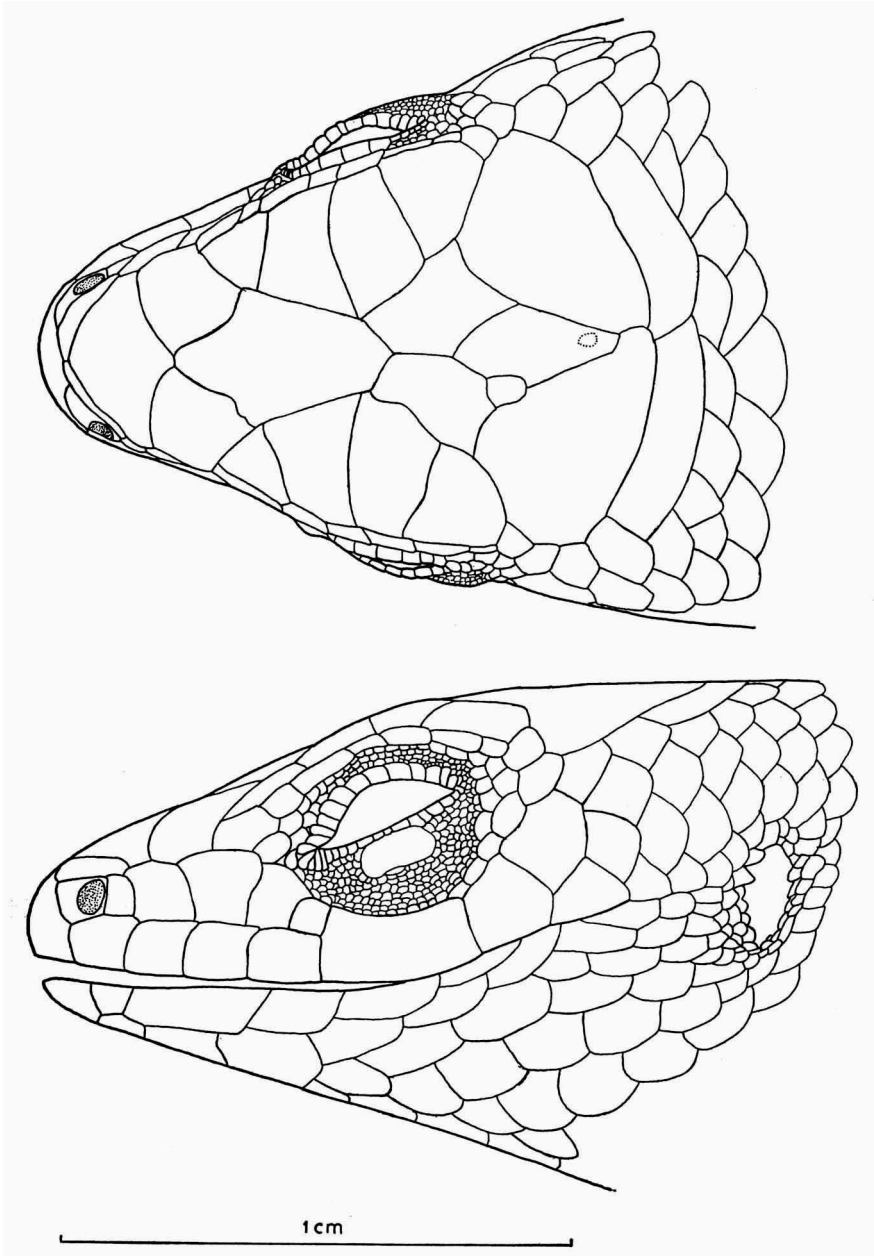

Fig. 7. *Mabuya buettneri* Matschie; dorsal and lateral view of the head of ♂, BM 1972.846, Ahamameti.

wide as long. A pair of pentagonal frontonasals, forming a long median suture. Frontal elongate rhomboidal, slightly longer than its distance to the tip of the snout and one and a half times as long as wide; it is in contact with the second and third supraoculars only. A pair of irregularly, elongate pentagonal frontoparietals, forming a long median suture. Interparietal rhomboidal, from one and a half times to nearly twice as long as wide. Parietals irregularly shaped, wider than long, in most specimens forming a short suture behind the interparietal. A pair of transversely enlarged nuchals, just over twice as wide as long; posterior border with about ten indistinct keels. Four supraoculars, the first smallest, the second largest. Supraciliaries four to six, mostly five; in direct contact with the supraoculars. Two small, subequal scales between the fourth supraocular and the anterior supratemporal. As they clearly form the uppermost scales in the two rows of postoculars, they could be termed suprapostoculars. Two supratemporals, the posterior one may be larger than or of the same size as the anterior one. Temporals few and large, a very large one anteriorly, posteriorly smaller and subequal, in five vertical rows between the postoculars and the ear-opening. Ear-opening large, obliquely oval, slanting posteriorly; anterior border with two to four, mostly three, pointed to rounded lobules, posterior margin smooth; external auditory meatus moderately long, tympanum clearly visible.

All head-scales smooth, except the temporals and supratemporals, which are keeled.

Gulars and ventrals smooth, cycloid, imbricate, in longitudinal and obliquely transverse rows; ventrals slightly larger than or as large as the gulars. Collar absent. Fifty three to 61 (mean 55.8) scales between the first pair of chin-shields and the preanals (fig. 17). Scales on the nape hexagonal, the anterior ones much wider than long, the posterior ones as wide as long, imbricate, the anterior ones with four to seven, the posterior ones with three keels. Scales on the side of the neck cycloid, smaller than the dorsals, imbricate, with three keels. Scales on the nape and on the side of the neck in longitudinal and oblique series.

Dorsals and laterals identical; imbricate, with three keels, rhomboidal, as wide as long, in longitudinal and obliquely transverse series. No distinct boundary between the laterals and the ventrals. Total number of scales around midbody 26, in one specimen (BM 1972.851) it is 28 (fig. 19). Fifty to 56 (mean 54.3) transverse rows of scales between the nuchals and the base of the tail (fig. 18). Preanal plate covered with scales identical with the ventrals, except the two median scales bordering the vent anteriorly, which are slightly enlarged.

Scales on the tail imbricate, on the dorsal and upper half of the lateral surface like the dorsals, but with five keels, towards the tip they become smooth. Scales on the lower half of the lateral surface of the tail like the ventrals but smaller. Under the tail a single row of scales, anteriorly identical with the scales on the lower half of the lateral surface, posteriorly the scales in this row are larger and become hexagonal, transversely enlarged, smooth and imbricate. The regenerated part of the tail is covered with smooth scales: a transversely enlarged vertebral row, one transversely enlarged row of subcaudals and one or two rows of laterals on each side. Tail round in cross-section, towards the tip it becomes compressed.

Scales on the limbs cycloid, imbricate, much smaller than the dorsals or the ventrals, in longitudinal and obliquely transverse series, smooth on most surfaces, with three keels on the upper surface of the forelimbs, on the anterior and upper surface of the thighs and on the upper surface of the lower legs. Eleven to 15, mostly 11-14 (mean 12.8) single, smooth lamellae under the fourth finger; 15-19, mostly 16-17 (mean 16.7) under the fourth toe (fig. 16). Palms and toes with flat, juxtaposed scales forming indistinct oblique rows. Both fingers and toes are compressed.

Colour in life: no data available.

Colour in preservative. Back olive brown to light-brown with four longitudinal rows of large dark-brown spots, two rows on each side of the vertebral column. The spots of two rows on each side may melt together, thus forming diabolo-shaped spots. The inner two lines are continued on the proximal part of the tail, the two outer lines vanish somewhere near the hind limbs. Colour of the flanks like that of the back or slightly darker, it may (rarely) or may not be separated from the dorsal colour by a dorsolateral line running from just before the insertion of the forelimbs to just before that of the hind limbs. This dorsolateral line consists of an indistinct upper series of white spots in the anterior part and a more or less continuous series of triangular (tips pointing downward) dark-brown spots a short distance below the white spots, but continuing to just before the insertion of the hind limbs. A narrow white line, less than one scale wide, from below the eye, via the lower part of the ear-opening, over the insertion of the forelimb to the groin. Dorsally and ventrally it is bordered by even narrower dark-brown lines. Ventral parts immaculate, yellowish white, the lower surface of the tail may be greyish. Dorsal surface of the limbs yellowish brown, always distinctly lighter than the back. An indistinct white line on the rim of the eyelids, which seems to be interrupted on the lower one.

A medium-sized lizard with long, slender body and limbs. Maximum

snout-vent length measured in females 81 mm, in males 69 mm. When the limbs are laid along the body, the fingers and toes just meet. The undamaged tail is 4.1 times as long as the snout-vent length in a male. Even regenerated tails may be three times as long as the snout-vent length.

Habitat. — I did not observe living specimens of this species myself, but for the Kpandu specimen (RMNH 17364) some scanty habitat notes are available, which follow in literal translation: "On piece of ground with rocks and vegetation of small bushes". More details on the habitat are given by Barbault (1971), who studied the productivity of this species in the surroundings of Lamto, Ivory Coast. There the species inhabits an open type of savanna alternated with patches of gallery forest and dry savanna forest. Schmidt (1919) gave a good description of the habitat in Zaïre and adjoining Sudan. Here the specimens live on the branches of stunted bushes "in plantations and cleared patches in the midst of brush". They seem to be chiefly arboreal, but nevertheless also may be found on the ground.

Natural history. — No data are available from Ghana, but Barbault (1971) extensively studied its life cycle in Ivory Coast. In several parts of its habitat near Lamto the entire population is virtually exterminated once a year by the fires that sweep the savanna in January. The population survives this catastrophe, because by that time the eggs, that have been laid in October to December, are ready to hatch. Thus, each year after the savanna-fires, the population is newly built by specimens hatching from eggs that survived the fires. Something similar might occur in certain parts of Ghana, but as in Lamto there are probably many spots not reached by the fire, where part of the old population may survive.

Range. — This species has been reported from Ivory Coast (Barbault, 1967, 1971), Togo (Matschie, 1891; Tornier, 1901) and Zaïre (Schmidt, 1919, as *Mabuya sudanensis*). This is the first time this species is recorded for Ghana (fig. 6).

Remarks. — The specimens from Zaïre, described by Schmidt (1919) as *M. sudanensis,* clearly belong to this species. The specimen from Bismarckburg, described by Matschie in 1891 as *Mabuia affinis,* seems to belong to *M. buettneri* as well. I came to this conclusion by comparing the data given by Matschie for the specimen he had before him, with the specimens that were available to me, and all characters, except the bright green back, fit *M. buettneri.*

Mabuya maculilabris maculilabris (Gray)

Euprepis maculilabris Gray, 1845: 114.
Euprepes maculilabris: F. Müller, 1882: 159; F. Müller, 1885: 706.
Euprepes albilabris F. Müller, 1885: 706.
Mabuya polytropis: Angel, Guibé & Lamotte, 1954: 376.
Mabuya m. maculilabris: Grandison, 1956: 235; Hoogmoed, 1973a: 261; Hoogmoed, 1973b: 220.

Material. —
LIBERIA.
Liberia: 1 ex., BM 1908.7.24.4, leg. A. McCloy.
Schiffelinsville: 1 ♂, 1 ♀, RMNH 17380, 1887, leg. J. Büttikofer & F. X. Stämpfli.
GUINEA.
Nion: 1 juv., MHNP 1943-37, leg. M. Lamotte.
Mount Nimba: 1 ♂, MHNP 1943-46, leg. M Lamotte.
IVORY COAST.
Abidjan: 1 ♂, RMNH 17381, June 1968, leg. W. J. Scheffers.
GHANA.
Sefwi Asempanaye: 1 ♀, RMNH 17397, 19-V-1972, leg. M. S. Hoogmoed.
Axim: 1 ♀, RMNH 17382, 4-V-1972, leg. M. S. Hoogmoed.
Boutry (= Butre): 2 ♂ ♂, 2 ♀ ♀, RMNH 17383, leg. H. S. Pel.
Foso: 1 juv., RMNH 17384, 8-V-1972, leg. M. S. Hoogmoed.
Breman Asikuma: 1 juv., RMNH 17385, 25-IV-1972, 1 ♀, RMNH 17386, 27-IV-1972, both leg. M. S. Hoogmoed; 1 ♀, RMNH 17387, 6-V-1972, leg. W. F. Rodenburg.
Christiansberg (= Accra): 1 ♀, NHMB 4425, 1884, leg. E. Mähly.
Kpandu: 1 juv., RMNH 17388, 18-III-1972, leg. M. S. Hoogmoed; 1 ♂, RMNH 17389, 30-X-1971, 1 juv., RMNH 17390, 19-V-1972, both leg. W. F. Rodenburg.
CAMEROON
Cameroon: 1 juv., NHMB 4473, leg. Passavant.
Bangwa (15 km NW. Banganté): 1 ♂, 1 ♀, 4 juvs., RMNH 17391, 30-IV-1964, leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.
Eseka: 1 ♂, RMNH 17392, December 1963, 1 juv., RMNH 17393, 30-I-1964, both leg. W. J. J. O. de Wilde & B. E. E de Wilde-Duyfjes.
N'Kolbison (8 km W. Yaoundé): 1 juv., RMNH 17394, 28-VI-1964, leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.
Melen (3 km SW. Yaoundé): 1 ♂, RMNH 17395, 1-VI-1964, leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.
Yaoundé: 1 ♂, RMNH 17396, 7-II-1964, leg. W. J. J. O. de Wilde & B. E. E. de Wilde-Duyfjes.

Diagnosis. — A medium-sized, heavily built lizard, with well developed limbs and a moderately long tail. A pair of nuchals is present, the supranasals are separated in most specimens, the prefrontals form a short suture in most specimens. There are two scales between the fourth supraocular and the anterior supratemporal. Dorsals with five to seven keels in adults. The number of lamellae under the fourth toe varies between 16 and 20, but mostly is 17-19. Under the fourth finger there are 12-17, mostly 14-16 subdigital lamellae. Light-brown above with or without dark-brown spots. A dorsolateral line of white spots from the supraciliaries to somewhere

between forelimb and hind limb. Flanks dark-brown. A white line from the second loreal, under the eye, under the ear-opening, over the insertion of the forelimb to the flank where it disappears. Subocular always with black or dark-brown areas along both its dorsal and ventral border; supralabials anterior to the subocular with black or dark-brown areas along their upper margin. A white rim along the upper eyelid, lower eyelid only with white areas near the corners of the eye, the central area is light- to dark-grey. Belly immaculately white, adult specimens may have irregularly arranged tiny brown spots on the throat.

Description. — Head short and wide, representing 23-25% of the snout-vent length in males, 19-25% in females and 23-28% in juveniles; distinctly depressed, 1.9-2.3 times as long as deep in adults, 1.9-2.7 times in juveniles; 1.4-1.7 times as long as wide. Rostral pentagonal, clearly visible from above, twice as wide as deep. A pair of narrow, elongate supranasals, forming a short suture in 8 specimens, in two specimens they meet in a point and in 20 they are completely separated. Frontonasal large, rhomboidal to hexagonal, as wide as long to one and a half times as wide as long. A pair of rectagular (when not forming a suture) or pentagonal (when forming a suture) prefrontals, forming a suture in most (21 out of 30) specimens. Frontal elongate rhomboidal, as long as or shorter than its distance to the tip of the snout; one and a half times as long as wide; in contact with the first, the second and the third supraocular, or with the second and third only. A pair of irregularly pentagonal frontoparietals forming a long median suture. Interparietal rhomboidal, from as long as wide to one and a half times as long as wide. Parietals irregularly shaped, wider than long, in most specimens forming a suture behind the interparietal. A pair of transversely enlarged nuchals, from just over twice as wide as long to two and a half times as wide as long; posterior border with 12 to 15 indistinct keels. Four supraoculars, the first smallest, the second largest. Supraciliaries four to seven, mostly five; in direct contact with the supraoculars. Laterally the parietals are bordered by four scales, of which the anterior two, the supra-postoculars, are small, subequal, and the posterior two, the supratemporals, are larger, the last one largest. Temporals few and large, a very large one anteriorly, posterior temporals smaller and subequal, in five vertical rows between the postoculars and the ear-opening. Ear-opening large, vertically oval; anterior border with two to five, mostly three to four, small, pointed asymmetrical lobules, posterior border smooth; external auditory meatus moderately long, tympanum clearly visible.

All head-scales smooth, except the posterior temporals which are slightly keeled.

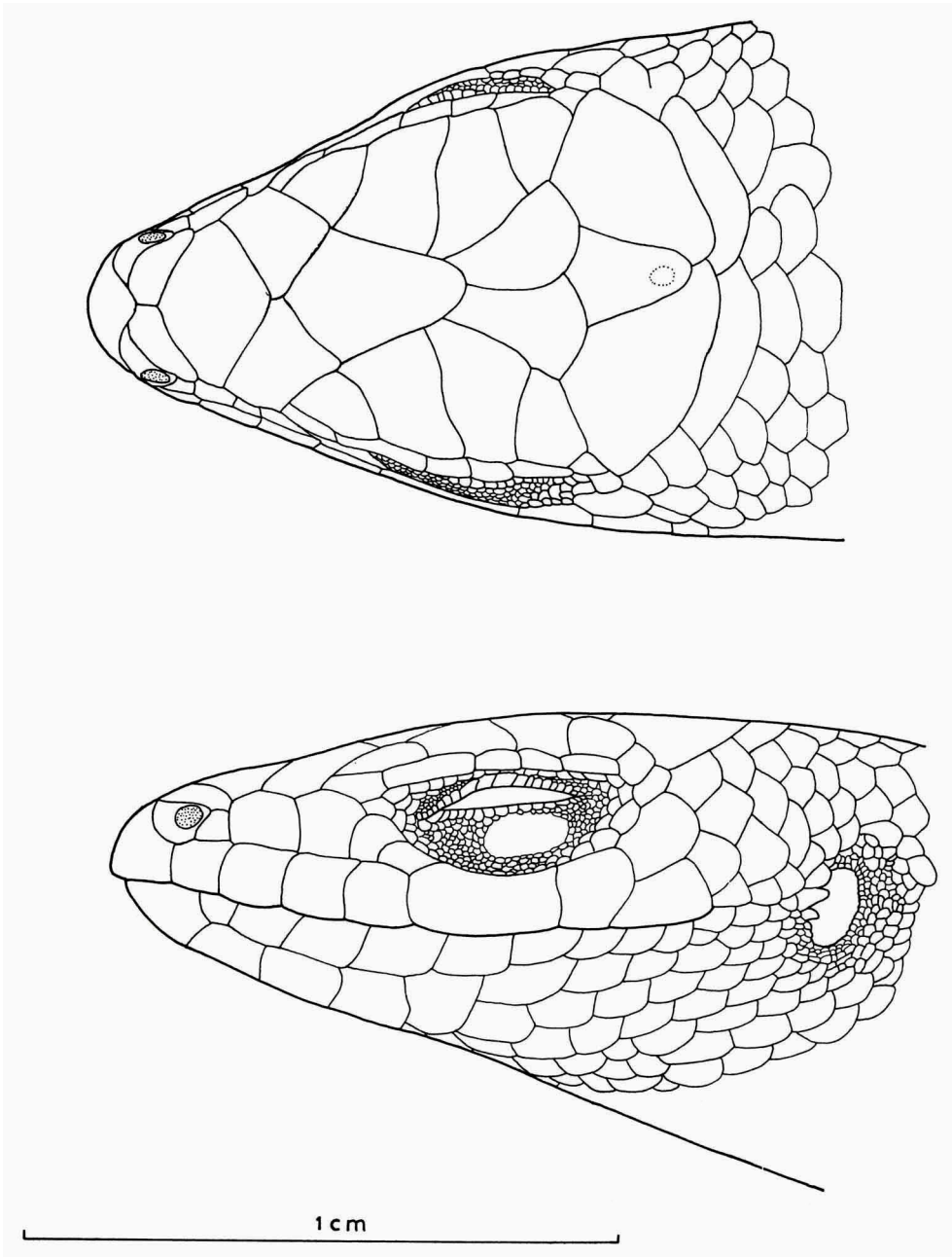

Fig. 8. *Mabuya m. maculilabris* (Gray); dorsal and lateral view of the head of ♀, RMNH 17387, Breman Asikuma.

Gulars and ventrals smooth, cycloid, imbricate, in longitudinal and obliquely transverse rows, ventrals slightly larger than the gulars. Collar absent. Fifty-three to 64 (mean 59.1) scales between the first pair of chin-shields and the preanals (fig. 17). Scales on the nape like the dorsals, except sometimes a few ones bordering the nuchals, which may be irregularly enlarged. Scales on the side of the neck of the same shape as those on the nape, but smaller. Scales on the nape and on the side of the neck in longitudinal and oblique series.

Dorsals and laterals identical, imbricate, hexagonal, wider than long, in longitudinal and obliquely transverse series; no distinct boundary between ventrals and laterals. The number of keels per scale varies considerably: in juveniles (26-40 mm) there are three, in subadult and some adult specimens (46-76 mm) five, in most adult specimens (64-88 mm) seven. Total number of scales around midbody 32-38, mostly 32-34, most specimens having an even number (fig. 19). Fifty-one to 62 (mean 54.5) transverse rows of scales between the nuchals and the base of the tail (fig. 18). Preanal plate covered with scales identical with the ventrals, except the row of scales bordering the vent anteriorly, which consists of enlarged scales.

Scales on the tail imbricate, on the dorsal surface like the dorsals, towards the tip a transversely enlarged vertebral row arises. Under the tail a transversely enlarged row of scales, from just behind the vent to the tip. Scales on the upper half of the lateral surface like the dorsals, keeled; on the lower half smooth, like the ventrals. Scales on the regenerated part of the tail smooth, the vertebral and subcaudal scale-rows are transversely enlarged, two rows of laterals on each side. Tail round in cross-section, towards the tip it becomes compressed.

Scales on the limbs cycloid (ventral parts) to rhomboidal (dorsal parts), imbricate, slightly smaller than the dorsals or the ventrals, in longitudinal and obliquely transverse series; smooth on most surfaces of the forelimbs, and the ventral surface of the hind limbs, with tree keels on the dorsal surface of the forelimbs and the remaining surfaces of the hind limbs. Twelve to 17, mostly 14 or 15 (mean 14.7), single, smooth, sometimes slightly swollen, lamellae under the fourth finger; 16-20, mostly 18-20 (mean 18.4), under the fourth toe (fig. 16). Palms and soles with irregularly arranged, rounded, flat, juxtaposed scales. Fingers and toes compressed.

Colour in life. Back brown, with or without dark-brown spots, flanks dark-brown. In juveniles a wide, lighter dorsolateral band with white spots is very evident, in adults it is less clear, though the white spots remain. A white lateral stripe from upper lip to groin in juveniles, to just behind

the insertion of the forelimbs in adults. A narrow yellow rim around the ear-opening. Throat yellow, belly pale yellow.

Colour in preservative. Back bronze-brown with dark-brown spots forming distinct or indistinct longitudinal series. When distinct they form two longitudinal rows on each side of the vertebral column. Towards the tail the spots of the two rows on the same side may melt together. The rows are continued on the tail. A wide dorsolateral band, lighter than the colour of the back, is especially apparent in juveniles and half-grown specimens. In adults it is less evident. It runs from the posterior corner of the eye and is continued on the tail. In this band a series of white spots is present, starting on the first supraciliary or even on the frontonasal, ending just before the insertion of the hind limbs. Anterior four supralabials each bearing a white spot, a brown zone along their dorsal margin, a pale greyish one along the ventral and part of the anterior margin. A white lateral band (1.5-2 scales wide) from the posterior loreal to the groin (juveniles) or to somewhere on the flanks (adults), passing under the eye, under the ear-opening and over the insertion of the forelimb. The upper half of the two scales between loreal and subocular black to dark-brown, lower half white. Fifth supralabial (or subocular) with a black to dark-brown dorsal rim and lighter brown ventral rim, leaving a white stripe on the central part. Upper part of the posterior supralabials black to dark-brown, lower part white. In juveniles this white lateral band is continued to the groins, on the flanks it is bordered ventrally by a dark-brown line. In adults this line has disappeared and so has the white lateral band; in most specimens the white band is distinct to just behind the insertion of the forelimb. In the largest adults it has been broken up in large white spots. Upper surface of limbs of the same colour as the back, with black and white spots. Ventral parts dirty white to pale yellow. A distinct white rim on the upper eyelid, lower eyelid only with white areas near the corners.

A medium-sized lizard, of heavy built, with well developed legs. Maximum snout-vent length measured for a male (RMNH 17395) 88 mm, for a female (RMNH 17391 b) 83 mm. Recently hatched juveniles are 23-26 mm. When the limbs are laid along the body there is a considerable overlap of forelimb and hind limb, the tip of the fourth toe reaching to between the wrist and the elbow. The undamaged tail is 1.9 times as long as the snout-vent length in adults; in juveniles it is 1.5-1.7 times as long.

Habitat. — This species seems to be restricted to forested regions or regions that until recently were forested. Most specimens in Ghana were collected near or even in human habitations: in gardens, in houses and on

porches. Only one specimen (RMNH 17397) was collected in a more or less natural habitat, viz., a cocoa forest where it was on the ground among leaves. From the labels attached to the RMNH specimens from Cameroon and Ivory Coast it is clear that in those countries it is also an inhabitant of human habitations. The same is true in Nigeria (Dunger, 1972b) and Zaïre (Schmidt, 1919). My observations in Ghana agree with those of Schmidt (1919) who assumed that this species was essentially a forest dweller, although not in virgin forest. In flagrant contradiction to this is Loveridge's (1957) opinion that this is chiefly a savanna species, a statement which certainly is not true for West-Africa.

Natural history. — This is a diurnal lizard, which was collected between 8.30 a.m. and 3.00 p.m. I have, however, no doubt that this species is active from sunrise to sunset. It was seen basking on several occasions. A female of 70 mm (RMNH 17383 d) contained four eggs. Recently hatched juveniles are known from the first half of May (Ghana) and from the end of January (Cameroon), but again it should be noticed that no representative collection for the entire year was available.

Range. — From Liberia eastwards to Ugunda and coastal Tanzania, south to Angola (see map 17, Schmidt, 1919). In Ghana the species seems to be restricted to the western rainforest and to the rainforest-island along the border with Togo.

Remarks. — The specimen from Mount Nimba, reported by Angel, Guibé and Lamotte (1954) under the name *Mabuya polytropis,* on closer examination proved to be a discoloured adult male in fairly bad condition, showing all essential characters of *M. m. maculilabris.*

The number of keels per scale increases with age, juvenile specimens only have three keels, when they grow older two more keels arise laterally of the original three keels and sometimes the number of keels may even rise to seven when two more keels develop near the lateral margins of the scales. This phenomenon has already been reported by Tornier (1901) and Chabanaud (1921).

Mabuya perrotetii (Duméril & Bibron)

Euprepes Perrotetii Duméril & Bibron, 1839: 669.
Euprepes sp. verwa m. E. frenatus F. Müller, 1885: 706.
Mabuia perroteti: Tornier, 1901: 82 (partly); L. Müller, 1910: 570.
Mabuia albilabris: Chabanaud, 1917: 93 (partly).
Mabuya perrotetii: Cansdale, 1951: 23; Cansdale, 1955: 67, 103; Hoogmoed, 1973a: 260; Hoogmoed 1973b: 218.

Material. —
GHANA.
Ghana: 1 ♂, NHMB 4474, 1884, leg. E. Mähly.
Sekondi: 1 ♀, RMNH 2464, leg. H. S. Pel.
Elmina: 1 ♂, RMNH 2462, leg. H S. Pel.
Kpandu: 1 ex., RMNH 17398, 17-III-1972, 6 ex., RMNH 17399, 22-III-1972, 1 ex., RMNH 17400, 24-III-1972, 2 ex., RMNH 17401, 26-III-1972, 1 ♀, RMNH 17402, 29-III-1972, 1 ex., RMNH 17403, 30-III-1972, 1 ♀, 1 ex., RMNH 17404, 31-III-1972, 1 ♀, RMNH 17405, 1-IV-1972, 1 ex., RMNH 17406, 1-IV-1972, 1 ♀, RMNH 17407, 3-IV-1972, all leg. M. S. Hoogmoed; 1 ♂, RMNH 17408, 19-IV-1971, 1 ♂, RMNH 17409, 30-IX-1971, 3 ex., RMNH 17410, 14/18-IV-1971, 1 ex., RMNH 17411, 20-IV-1971, all leg. W. F. Rodenburg.
Between Kpandu and Gbefi: 1 ♂, RMNH 17412, 7-IV-1972, leg. M. S. Hoogmoed.
DAHOMEY.
Agouagou: 2 ♀ ♀, 1 ex., MHNP 1917-62/64, leg. G. Bouet.
Porto Novo: 1 ♂, NHMB 4475, 1884, leg. E.. Mähly.

Diagnosis. — A large, heavily built lizard, with short thick limbs and a moderately long tail. A pair of transversely enlarged nuchals is absent, the parietals are posteriorly bordered by several slightly enlarged scales. Both the supranasals and the prefrontals form a median suture in all specimens. There are two scales between the fourth supraocular and the anterior supratemporal, the anterior one is small, the second one as large as the supratemporals, which are only slightly larger than the anteriormost scale. Dorsals tricarinate. The number of lamellae under the fourth toe varies between 15 and 21, but mostly is 16-18. Under the fourth finger there are 13-16, mostly 14-15 subdigital lamellae. Light-brown above, scales with or without dark-brown lateral edges, thus forming longitudinal stripes. A greyish to yellowish brown dorsolateral stripe, a dark-brown to orange lateral band with blue spots in it. Ventral parts immaculate, white. A white rim along the upper eyelid, lower eyelid either with a complete white rim, a white area near the posterior corner (mostly) or white areas near the posterior and the anterior corner of the eye.

Description. — Head short and deep, representing 19-22% of the snout-vent length in adults, 22-25% in juveniles and subadults; 1.6-2.0 times as long as deep in adults, 1.8-2.2 times in juveniles and subadults; 1.4-1.5 times as long as wide in adults, 1.4-1.6 times in juveniles and subadults. Rostral pentagonal, clearly visible from above, twice as wide as deep. A pair of narrow elongate supranasals, forming a median suture. Frontonasal large, irregularly hexagonal, one and a half times as wide as long. A pair of pentagonal (mostly) to quadrangular prefrontals, forming a long median suture. Frontal elongate rhomboidal, 1.3-2 times as long as wide, as long as or shorter than its distance to the snout tip; in contact with the first, second and

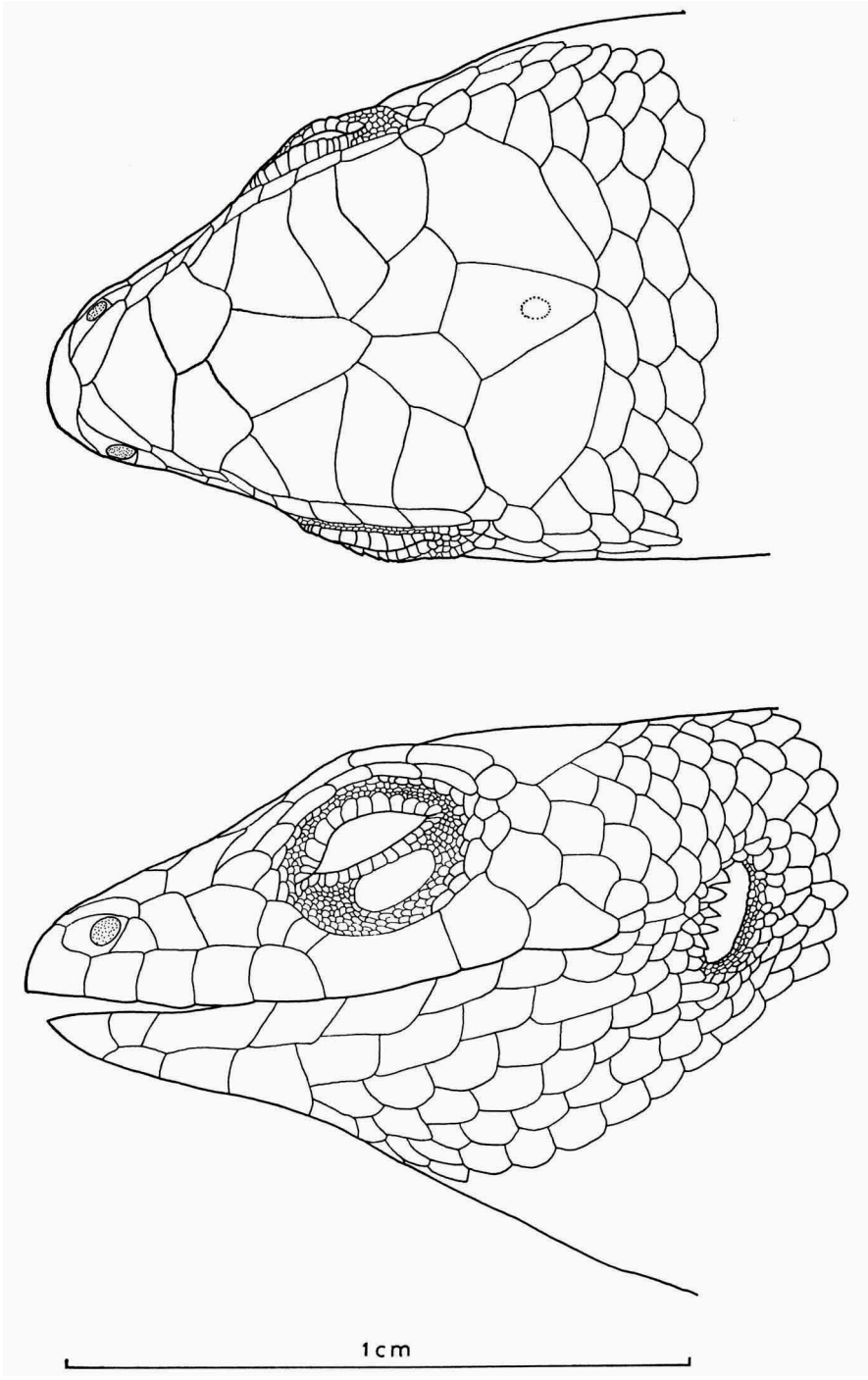

Fig. 9. *Mabuya perrotetii* (Duméril & Bibron); dorsal and lateral view of the head of lgr., RMNH 17400, Kpandu.

third supraocular or (more often) with the second and third only. A pair of irregularly pentagonal frontoparietals, forming a long median suture. Interparietal rhomboidal, 1.3-1.5 times as long as wide, always separating the parietals. Parietals irregularly shaped, wider than long, bordered posteriorly by a variable number of keeled nuchals, only slightly larger than the scales on the nape; occasionally two of these scales melt together to form a transversely enlarged nuchal, but never a pair of transversely enlarged nuchals is present. Four supraoculars, the first smallest, the second largest. Supraciliaries six, only rarely five or seven; in direct contact with the supraoculars. Laterally the parietals are bordered by four scales, of which the first is distinctly smaller than the others. Temporals few and large, a large one anteriorly, posteriorly decreasing in size, in six vertical rows between the postoculars and the ear-opening. Ear-opening large, narrow, obliquely oval, slanting posteriorly, anterior border with three to five, mostly four, large, pointed, symmetrical lobules; posterior border smooth; external auditory meatus long, tympanum clearly visible.

All head scales smooth, except the temporals which are slightly keeled.

Gulars and ventrals smooth, cycloid, imbricate, subequal, in longitudinal and obliquely transverse rows. Collar absent. Fifty-five to 63 (mean 59.8) scales between the first pair of chin-shields and the preanals (fig. 17). Scales on the nape hexagonal, wider than long, imbricate, slightly larger than the dorsals, with three keels. Scales on the side of the neck cycloid, imbricate, smaller than those on the nape, tricarinate. Scales on the nape and on the side of the neck in longitudinal and oblique series.

Dorsals and laterals identical, imbricate, hexagonal, wider than long, tricarinate, in longitudinal and obliquely transverse series, no distinct boundary between ventrals and laterals. Total number of scales around midbody is 32-36, mostly 32-34 (fig. 19), most specimens having an even number. Fifty to 54 (mean 51.9) transverse rows of scales between the parietals and the base of the tail (fig. 18). Preanal plate with scales similar to the ventrals, except the row of scales bordering the vent anteriorly, which consists of enlarged scales.

Scales on the tail imbricate, on the dorsal surface similar to the dorsals but smaller, towards the tip a row of transversely enlarged vertebral scales. Under the anterior part of the tail the scales are like the ventrals, farther posteriorly there is a row of transversely enlarged scales. On the regenerated part of the tail the scales are smooth, arranged as on the undamaged tail. Tail round in cross-section, hardly compressed towards the tip.

Scales on the limbs cycloid to rhomboidal or even hexagonal (dorsal parts of lower legs), imbricate, smaller than the dorsals or the ventrals, in

longitudinal and transverse series; tricarinate on the dorsal surfaces, smooth on the remaining surfaces. Thirteen to 16, mostly 14 or 15 (mean 14.2), single, smooth lamellae under the fourth finger; 15-21, mostly 16-18 (mean 17.1), under the fourth toe (fig. 16). Palms and soles with irregularly arranged, slightly tubercular, rounded, juxtaposed scales. Fingers and toes short, compressed.

Colour in life. Back light- or golden-brown, with or without dark-brown spots, a yellow-brown to creamish dorsolateral stripe. Flanks dark-brown with light-brown to white spots in subadults. In adult males the flanks are orange with light-blue spots. Adult females are like the subadults. In subadults the sides of the neck and the throat and the anterior part of the flanks may be orange with white spots. Ventral parts white, except for the underside of the tail which may be grey. Iris grey-brown.

Colour in preservative. Back light-brown, with or without longitudinal series of dark-brown spots. When present the spots are situated at the lateral edges of the scales. A greyish to yellowish brown dorsolateral stripe from the posterior corner of the eye on to the base of the tail where it peters out. A distinct, wide, dark-brown lateral band from the eye to the groin and continued less distinctly on the tail. In this band about three longitudinal rows of whitish spots, most prominent in adults. Anterior supralabials greyish to brownish, subocular with a narrow black line along its upper margin, bordered below by a slightly wider white line which is continued posteriorly as a series of spots to the ear-opening. Posterior supralabials with black upper tips and a central white spot. Ventral parts immaculate, white. A white rim along the upper eyelid, lower eyelid mostly with an interrupted white rim, but occasionally it is complete.

A large, heavily built lizard with well developed but fairly short legs. Maximum snout-vent length measured for a male (RMNH 17409) 146 mm, for a female (RMNH 17412) 144 mm. A recently hatched juvenile (RMNH 17399a) is 35 mm. When the limbs are laid along the body in large adults, the toes and fingers just meet, in subadults and in small adults, the tip of the fourth toe may reach to near the elbow. The undamaged tail is 1.6-1.8 times as long as the snout-vent length.

Habitat. — This species is very common in open places near human habitations, e.g., lawns. Although I did not find it in the actual savanna, this seems to be a savanna species (Schmidt, 1919; Dunger, 1972). Most specimens I collected, were found near houses on grass-fields with fairly tall grass, in the shrubbery bordering these grass-fields and on low concrete walls in open grass-land, surrounded by a dense vegetation of herbs.

One specimen was captured on a dirt road through a swampy area, that is to say during the rainy season. At the time when it was collected the area was completely dried out and was comparable in all regards to savanna, being covered with tall grass, reed, sedges and with scattered trees and bushes.

Natural history. — A diurnal lizard which was actively basking throughout the day, from early morning to late afternoon. A favourable haunt of this species in Kpandu were low concrete walls on which they were basking continuously. When disturbed they sought refuge in the herbs and grass surrounding these walls and under clothes put on the walls to dry. There is only one recently hatched juvenile available, which was captured March 22. At night this species was often found hiding under objects lying on the ground.

Range. — A northern species, occuring from Senegal in the west, along the West-African coast to northern Zaïre and Uganda.

Remarks. — In 1917 Chabanaud mentioned without comment *Mabuya albilabris* from Agouagou, Dahomey. Judging by this paper he possessed three females and one male. In 1921 the same author discussed the relationships between *Mabuia raddoni* (= *Mabuya affinis*) and *M. albilabris*. As his discussion made quite a reliable impression, I was rather astonished when I received the Agouagou specimens on loan from the Paris museum, and found them to belong to two species. The females belong to *Mabuya perrotetii* (Duméril & Bibron), the male belongs to *M. quinquetaeniata scharica* Sternfeld. This finding invalidates Chabanaud's record of *M. albilabris* for West-Africa, west of Cameroon. Tornier's (1901) opinion that *Mabuya perrotetii* and *M. blandingii* were respectively the adult and juvenile of one species which he called *M. perrotetii* has long since been refuted in a very satisfactory way by L. Müller (1901).

Mabuya polytropis Boulenger

Mabuia polytropis Boulenger, 1903: 433.

Mabuya polytropis occidentalis nov. subspec.

Mabuya polytropis: Hoogmoed, 1973a: 262; Hoogmoed 1973b: 220.

Holotype. — 1 ♀, RMNH 17419, Bia Tributaries South Forest Reserve, southeastern part, Western Region, Ghana, 20-V-1972, leg. M. S. Hoogmoed.

Paratypes. —
LIBERIA.
Soforé Place, St. Pauls River: 1 ♂, RMNH 17413, 2-VIII-1880, leg. J. Büttikofer & J. A. Sala.
GHANA.
Bia Tributaries South Forest Reserve: 1 ♂, 2 ♀ ♀, RMNH 17414, 20-V-1972, leg. M. S. Hoogmoed.
Sefwi Asempanaye, Krokosua Hills Forest Reserve: 1 juv., RMNH 17415, 7 miles N., 17-V-1972, 2 ♀ ♀, 1 juv., RMNH 17416, 16-V-1972, 2 juvs., RMNH 17417, 2 miles E., 22-V-1972, all leg. M. S. Hoogmoed.
Between Baku and Suponso, 1 mile W. of Baku: 3 ♀ ♀, RMNH 17418, 25-IV-1972, leg. M. S. Hoogmoed.
Tafo: 3 ex., BM 1967.211-213, leg. D. Leston.
Aburi: 1 ex., BM 1969-1580, leg. University College London Expedition.

Material of *Mabuya p. polytropis* Boulenger examined:

CAMEROON.
Assobam: 2 ♂ ♂, 1 ♀, BM 1909.7.9.1-3.
Efulen: 1 ♂, 2 ex., BM 1946.8.18.18-20, leg. G. L. Bates (Syntypes).
GABOON.
Benito River District: 1 ♀, BM 1901.8.1.14, leg. G. L. Bates (Holotype).
ZAÏRE.
Medje: 1 ♀ ♀, BM 1919.8.16.60-61.
FERNANDO POO.
Fernando Poo: 1 ex., BM 1904.7.23.17.

Diagnosis. — A robust lizard with well developed limbs and a moderately long tail. A pair of transversely enlarged nuchals, the supranasals are separated in all specimens, the prefrontals are separated in about half the specimens. There are two scales between the fourth supraocular and the anterior supratemporal. The number of lamellae under the fourth toe varies between 15 and 17, that under the fourth finger between 11 and 15.

Back olive brown with dark-brown, wavy, indistinct, obliquely transverse bands. A dorsolateral series of white, black-edged spots; a continuous dark-brown band on the flanks from eye to groin, bordered below by a more or less distinct white stripe. Ventral parts immaculate, greenish white. A white rim along upper and lower eyelid.

Description of the holotype. — Head short, representing 20% of the snout-vent length, 1.8 times as long as deep, 1.4 times as long as wide. Rostral pentagonal, clearly visible from above, 1.5 times as wide as deep. A pair of narrow, rectangular supranasals, widely separated by the rostral and frontonasal forming a suture. Frontonasal large, irregularly octagonal, only slightly wider than long. A pair of quadrangular prefrontals separated by the frontal and the frontonasal forming a suture. Frontal elongate, rhom-

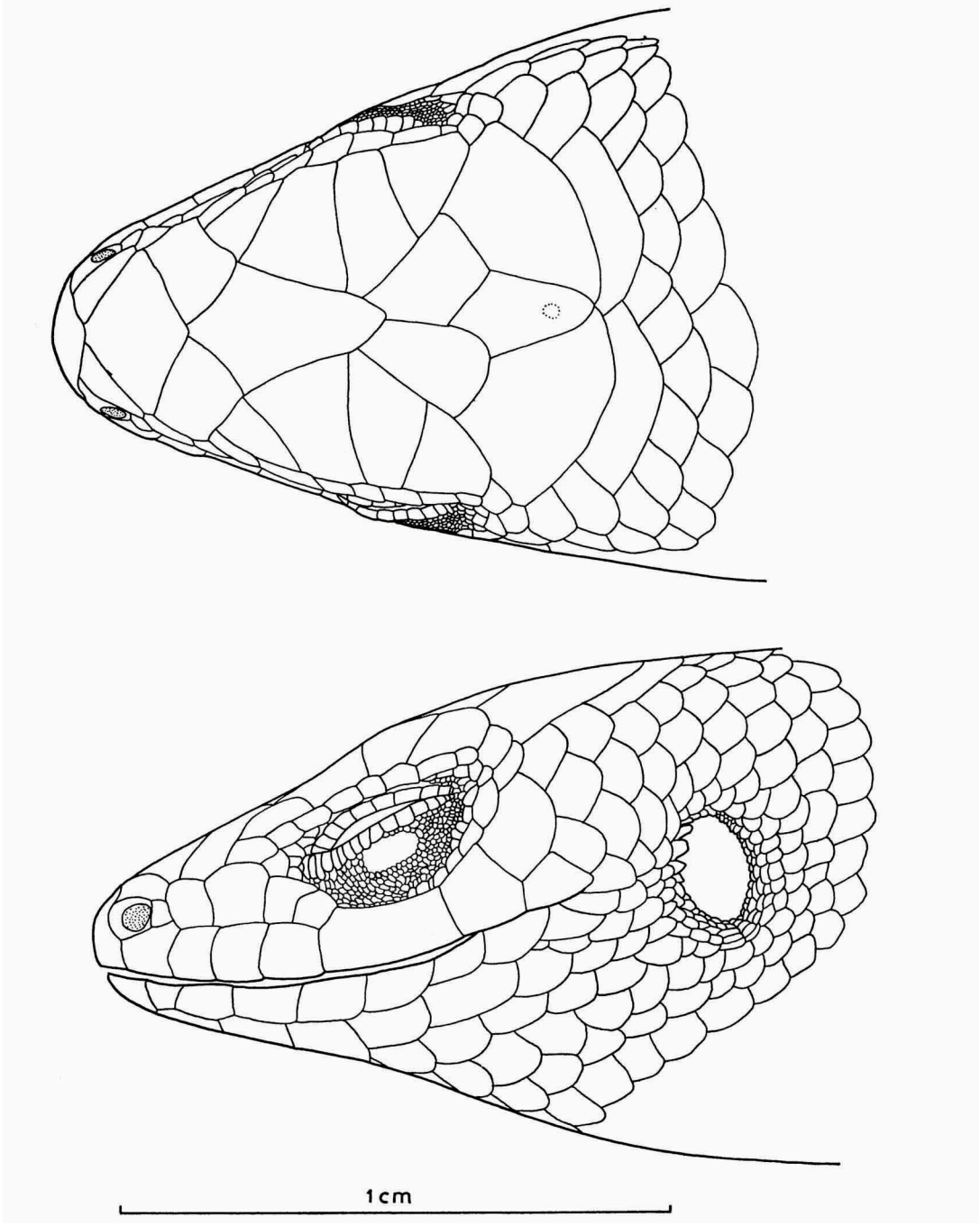

Fig. 10. *Mabuya polytropis occidentalis* nov. subspec.; dorsal and lateral view of the head of ♀, RMNH 17414a, Bia Tributaries South Forest Reserve.

boidal, nearly twice as long as wide, much longer than its distance to the tip of the snout; in contact with the second supraocular only. A pair of irregularly pentagonal frontoparietals, forming a long median suture. Interparietal rhomboidal, 1.6 times as long as wide, with a distinct, round, opaque area in its posterior part, covering the parietal eye. Parietals more or less trapezoid with rounded posterior margin, wider than long. A pair of transversely enlarged, narrow nuchals, 3.5 times as wide as long, posterior border with 14 (left) and 15 (right) distinct keels. Four supraoculars, the first smallest, the second very large. Supraciliaries six, the second very long, the sixth minute, in direct contact with the supraoculars. Laterally the parietals are bordered by four scales, two small anterior ones and two larger posterior ones (supratemporals). Nostril obliquely oval, in the posterior part of a single scale, well behind the suture between rostral and first supralabial. Nasal scale followed by a postnasal, two loreals and two scales that might be called preoculars. Supralabials seven, of which the fifth is largest and under the eye. Two rows of postoculars. Temporals few and large, a very large one anteriorly, posterior temporals smaller and subequal, five vertical rows between the postoculars and the ear-opening. Ear-opening small, vertically oval; anterior border with three small triangular lobules; posterior border smooth; external auditory meatus long, tympanum hardly visible.

Mental oval, twice as wide as long; postmental more or less rectangular, twice as wide as long. Two pairs of chin-shields, the anterior pair forming a median suture, the posterior pair separated by one scale. Eight infralabials, of which the first is minute.

All head-scales smooth, except the temporals and supratemporals.

Gulars and ventrals smooth, cycloid, imbricate, in longitudinal and in obliquely transverse rows, subequal. Collar absent. Fifty-three scales between the first pair of chin-shields and the preanals. Preanal plate covered with scales similar to the ventrals, except the row bordering the vent anteriorly, which consists of enlarged scales.

Scales on the nape shorter than the dorsals, further identical. Scales on the side of the neck imbricate, cycloid, in longitudinal and oblique rows, with three to five keels.

Dorsals and laterals identical, imbricate, hexagonal, 1.5 times as wide as long, in longitudinal and obliquely transverse series, no distinct boundary between ventrals and laterals. The number of keels per scale is seven (occasionally eight), the original three keels are very distinct, regularly spaced, whereas the supernumerary keels are shorter, less prominent and irregularly spaced. Total number of scales around midbody 32; 47 transverse rows of scales between the nuchals and the base of the tail.

Scales on the tail imbricate, on the dorsal surface similar to the dorsals, but towards the tip a transversely enlarged vertebral row arises; the scales in this row may have up to 11 keels. Under the tail a row of transversely enlarged, smooth scales. Tail round in cross-section, compressed near the tip.

Scales on the limbs cycloid (ventral parts) to hexagonal (dorsal parts), imbricate, smaller than the dorsals or the ventrals, in longitudinal and obliquely transverse rows; smooth on the ventral surfaces, with three keels on the dorsal surfaces. Fourteen (left) and fifteen (right) single, smooth lamellae under the fourth finger, 17 under the fourth toe. Palms and soles with slightly tubercular, somewhat imbricate scales, arranged in indistinct longitudinal and oblique rows. Fingers and toes compressed.

Colour in life. Belly yellow-green, back with dark transverse bands.

Colour in preservative. Back olive brown with vague, wavy, obliquely transverse dark-brown bands. A dorsolateral series of white, ventrally black-edged spots from the neck to the tail. Flanks with a dark-brown band from the neck to the groin, an interrupted white line from axilla to groin. Upper lip dark-grey. A black line from the second loreal under the eye to the tip of the sixth upper labial. Lower lip with black spots, side of neck with indistinct, oblique, black lines. Ventral parts immaculate, greenish white. A white rim around the eyelids. Limbs of the same colour as the back, with some lighter transverse bands.

Adult female, stoutly built, with a snouth-vent length of 83 mm. The tail is undamaged and measures 170 mm. When the limbs are laid along the body the tip of the fourth toe nearly reaches the axilla.

Variation in paratypes. — All paratypes essentially agree with the holotype, but of course there is some variation. The length of the head represents 20-23% of the snout-vent length in adults, 23-26% in juveniles, the head is 1.7-2.1 times as long as deep, 1.3-1.5 times as long as wide. Supranasals never forming a median suture. The frontonasal is rhomboidal, hexagonal, heptagonal or octagonal. Prefrontals separated in 11 specimens, only in four specimens there is a short median suture. Frontal always longer than its distance to the tip of the snout, mostly in contact with the second and third supraoculars, occasionally with the first, the second and the third or with the second only. Interparietal from 1.3-1.8 times as long as wide. Nuchals three to four times as wide as long, their posterior border with numerous (up to 16) keels. Supraciliaries six to eight. Anterior margin of ear-opening with two to five, mostly three, projecting lobules.

Fifty to 57 (mean 53.2) scales between the first pair of chin-shields and

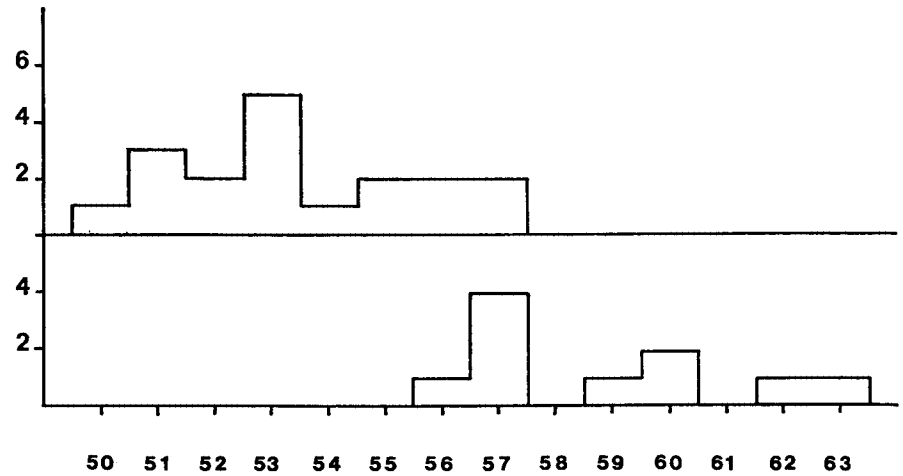

Fig. 11. Histograms showing the variation in the number of scales between the first pair of chin-shields and the preanals for *Mabuya p. polytropis* Boulenger (lower figure) and for *M. p. occidentalis* nov. subspec. (upper figure). For further explanation see fig. 3.

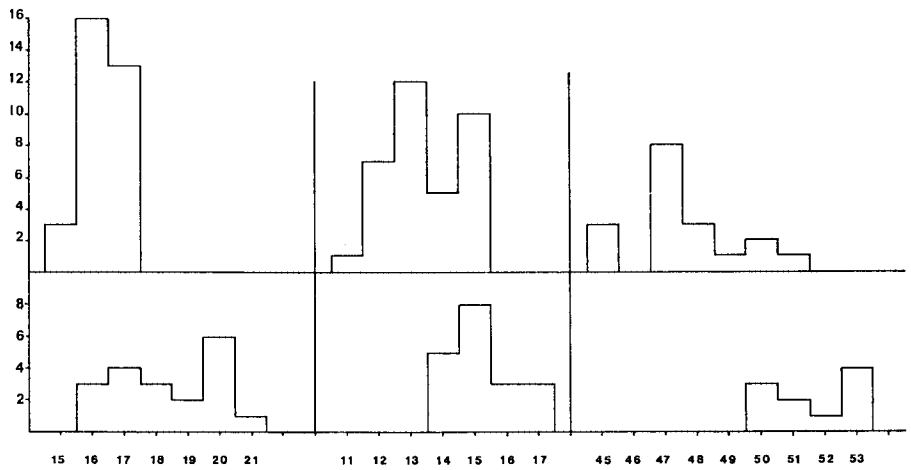

Fig. 12. Histograms showing the variation in the number of lamellae under the fourth toe (left), under the fourth finger (centre) and the number of scales between the nuchals and the base of the tail (right) for *Mabuya p. polytropis* Boulenger (three lower figures) and for *M. p. occidentalis* nov. subspec. (three upper figures). For further explanation see fig. 3.

the preanals (figs. 11, 17). Thirty to 32 scales around midbody (fig. 19); 45-51 (mean 47.5) transverse rows of dorsals between the nuchals and the base of the tail (figs. 12, 18). Dorsals in juveniles with three keels, in adults mostly with seven, but occasionally with up to ten keels. Number of lamellae under the fourth finger 11-15 (mean 13.5), under the fourth toe 15-17 (mean 16.3) (figs. 12, 16).

The pattern in all specimens is basically the same. In some the transverse bands on the back are more distinct than in others. The dorsolateral series of white spots may be more or less distinct. The lateral dark-brown band may start at the posterior corner of the eye or on the side of the neck. It tends to be more distinct in smaller specimens than in the large adults.

The largest male measures 70 mm, the largest female (the holotype) 83 mm. Recently hatched juveniles measure 35-39 mm. The length of the undamaged tail is 1.8-2.0 times the snout-vent length.

Habitat. — This form seems to be restricted to rainforest, where it is present on the forest floor between leaves, but mostly it can be found on the base of trees on buttresses, up to a height of four to five metres. I did not find this species in cocoafarms, where the vegetation does not seem to be dense enough.

Natural history. — A diurnal lizard which was captured between 9.30 a.m. and 4.45 p.m. It was seen basking several times. Recently hatched juveniles, showing an umbilical scar, were collected in May, but it should be kept in mind that all available specimens were collected in April and May, so this datum is merely an indication.

Range. — Only known from the western rain-forest in Ghana and from the St. Pauls River in Liberia. Undoubtedly it must be present throughout the area between these extremes and I think we can safely state that his species occurs in the West-African rain-forest, west of the Dahomey-gap (fig. 6).

Remarks. — In 1954, Angel, Guibé and Lamotte reported *Mabuya polytropis* Boulenger from Mount Nimba, but examination of the specimen showed it to belong to *M. m. maculilabris* (Gray).

The subspecies here described differs in a number of quantitative characters from the nominate subspecies which is endemic to Cameroon, Zaïre, Gaboon and Fernando Poo. One qualitative character is very evident, viz., the nature of the dark-brown lateral band. In *M. polytropis occidentalis* it is continuous from the posterior corner of the eye or from the side of the

neck to the groin, in *M. p. polytropis* on the flanks it breaks up into a series of vertically oval spots (L. Müller, 1910). Other important differences can be found in the condition of the prefrontals, which, in the nominate subspecies, form a median suture in nine out of ten specimens, while in the new subspecies there are only four out of 18 specimens showing this character. The same applies to the supranasals, which are never in contact in the new subspecies and are in contact along the median line in four out of ten specimens of the nominate subspecies. There are differences in the number of subdigital lamellae under the fourth finger and toe, in the number of scales around midbody, in the number of transverse rows of dorsals and in the number of scales between the first pair of chin-shields and the preanals. There are also indications that he nominate subspecies reaches a greater snout-vent length than the newly described subspecies, but of course this is fairly difficult to prove with relatively small series. The pertinent data are recapitulated in some diagrams (figs. 11, 12, 16, 17, 18, 19).

The data presented by Schmidt (1919) for 16 specimens of the nominate subspecies from the Ituri Forest agree with those I found for the specimens from more western localities. When, for instance, we add his data concerning the prefrontals to mine, we see that these scales form a suture in 22 out of 24 specimens (I only take 24 as a total, for two of the specimens seen by me (BM 1919.8.16.60-61) very probably formed part of Schmidt's series). We find similar data for the supranasals, the lamellae under the fourth toe, and the number of scales between the first pair of chin-shields and the preanals.

Etymology. — The subspecific name refers to the range occupied by this subspecies, which is restricted to the Liberia-Ghana rain-forest in West-Africa, and separated from the Congo basin rain-forest by the Dahomey-gap.

Mabuya quinquetaeniata scharica Sternfeld

Mabuia quinquetaeniata scharica Sternfeld, 1917: 436.
Mabuia albilabris: Chabanaud, 1917: 93 (partly).
Mabuya quinquetaeniata scharica: Cansdale, 1951: 22; Cansdale, 1955: 68, 103; Grandison, 1956: 237; Hoogmoed, 1973a: 259.
Mabuya quinquetaeniata sharica: Hoogmoed, 1973b: 218.

Material. —
GHANA.
Shai Hills: 1 ♀, RMNH 17420, 13-IV-1972, 1 ♀, RMNH 17421, 12-IV-1972, 1 juv., RMNH 17422, 15-IV-1972, all leg. M. S. Hoogmoed.
Between Kpandu and Torkor: 1 ♂, 2 ♀ ♀, 1 juv., RMNH 17423, 1-IV-1972, leg. M. S. Hoogmoed.
Kpandu: 2 juvs., RMNH 17424, 22-III-1972, 2 juvs., RMNH 17425, 26-III-1972, 1 ♂, 1 ♀, RMNH 17426, 27-III-1972, 1 juv., RMNH 17427, 28-III-1972, 1 juv., RMNH

17428, 1-IV-1972, all leg. M. S. Hoogmoed; 1 juv., RMNH 17429, 16-IV-1971, 1 juv., RMNH 17430, 6-V-1971, 1 juv., RMNH 17431, 21-V-1972, all leg. W. F. Rodenburg.
Biakpa: 2 juvs., RMNH 17432, 7-IV-1972, leg. M. S. Hoogmoed.
DAHOMEY.
Agouagou: 1 ♂, MHNP 1917-65, leg. G. Bouet.

Diagnosis. — A robust lizard with well developed limbs and a moderately long tail. A pair of transversely enlarged nuchals, the supranasals always form a median suture, the prefrontals nearly always form a median suture. There are two scales between the fourth supraocular and the anterior supratemporal. The number of lamellae under the fourth toe varies between 19 and 23, but mostly is 20-21, that under the fourth finger varies between 14 and 17, but mostly is 15 or 16. Juveniles and females black above with five white to cream-coloured longitudinal stripes on the back and on the flanks; tail blue. Adult males are light- to dark-brown above, without longitudinal stripes, side of head and neck black with a light-blue stripe on the upper lip and light-blue spots on the side of the neck and the anterior part of the flanks. Juveniles and females with immaculately white ventral parts; throat and breast in adult males black or white wih black spots, belly white to bluish grey. A white rim along the upper eyelid only.

Description. — Head length representing 23% of the snout-vent length in males, 22-25% in females and 24-28% in juveniles; 1.9-2.1 times as long as deep in adults, 2.0-2.4 times in juveniles; 1.4-1.5 times as long as wide in males, 1.5-1.6 times in females and 1.4-1.7 (mostly 1.6-1.7) times in juveniles. Rostral pentagonal, clearly visible from above, about twice as wide as deep. A pair of irregularly shaped elongate supranasals, always forming a median suture. Frontonasal large, hexagonal, 1.5-1.8 times as wide as long. A pair of pentagonal prefrontals, forming a median suture in 17 out of 21 specimens. Frontal elongate rhomboidal, 1.3-1.7 times as long as wide, mostly shorter than or as long as its distance to the tip of the snout, occasionally slightly longer; mostly in contact with the first, the second and the third supraocular, occasionally with the second and the third only. A pair of irregularly pentagonal frontoparietals, forming a long median suture. Interparietal elongate, rhomboidal, as long as wide or slightly longer. Parietals trapezoid with a convex posterior margin, wider than long, nearly always (20 out of 21 specimens) forming a short suture behind the interparietal. A pair of transversely enlarged nuchals, three to four times as wide as long, posterior border with 10-15 blunt keels. Four supraoculars, first and fourth subequal, smallest, second and third subequal largest. Supraciliaries four to six, mostly five, in direct contact with the supraoculars. Laterally the parietals are bordered by four scales, two small suprapost-

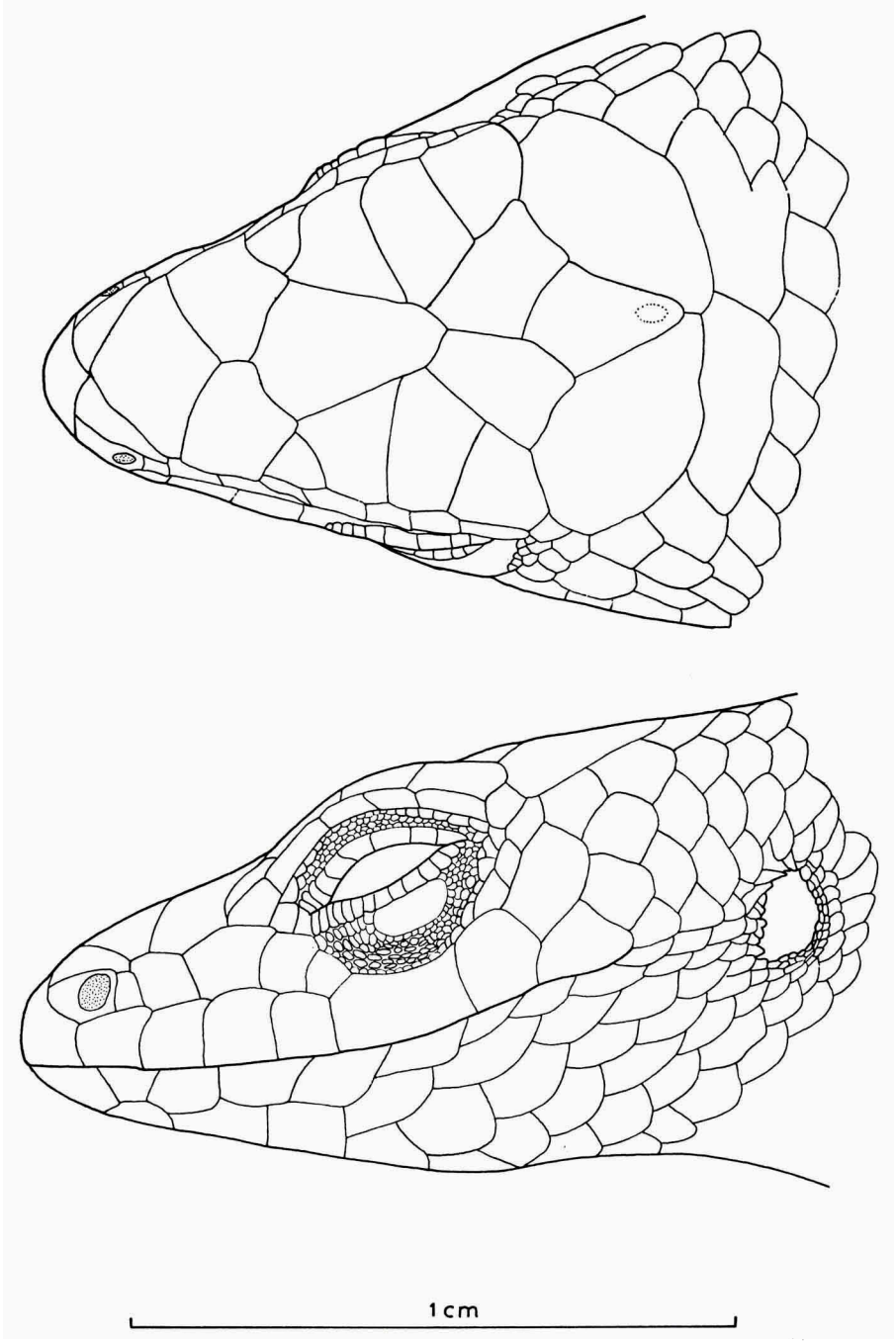

Fig. 13. *Mabuya quinquetaeniata scharica* Sternfeld; dorsal and lateral view of the head of juv., RMNH 17424b, Kpandu.

oculars and two large supratemporals. Temporals few and large, posteriorly decreasing in size, a large one anteriorly, in five vertical rows between the postoculars and the ear-opening. Ear-opening large, vertically oval; anterior border with two to five, mostly three to four, triangular lobules, of which the second one from above is distinctly larger than the rest; posterior border smooth; external auditory meatus moderately long, tympanum well visible.

All head scales smooth, except the temporals and the supratemporals, which are slightly keeled.

Gulars and ventrals smooth, cycloid, imbricate, subequal, in longitudinal and obliquely transverse rows. Collar absent. Fifty-six to 61 (mean 58.0) scales between the first pair of chin-shields and the preanals (fig. 17). Scales on the nape hexagonal, twice as wide as long, imbricate, slightly smaller than the dorsals, with three to five keels. Scales on the side of the neck cycloid, imbricate, smaller than those on the nape, with three keels. Scales on the nape and on the side of the neck in longitudinal and oblique series.

Dorsals and laterals identical, imbricate, hexagonal, wider than long, tricarinate, in longitudinal and obliquely transverse series, no distinct boundary between ventrals and laterals. Total number of scales around midbody 35-40 (fig. 19), most specimens having an even number. Forty-six to 49 (mean 47.2) transverse rows of scales between the nuchals and the base of the tail (fig. 18). Preanal plate with scales similar to the ventrals, except the row of scales bordering the vent anteriorly, which consists of enlarged scales.

Scales on the tail imbricate, on the dorsal surface similar to the dorsals, towards the tip the vertebral row becomes enlarged. Under the anterior part of the tail the scales are similar to the ventrals, but smaller, farther posteriorly the median row becomes transversely enlarged. On the regenerated part of the tail the scales are smooth, arranged as on the original tail. Tail round in cross-section, compressed towards the tip.

Scales on the limbs cycloid, smaller than the dorsals or ventrals, tricarinate on the dorsal surfaces, smooth on the ventral surfaces, in longitudinal and transverse series. Fourteen to 17, mostly 15 or 16 (mean 15.2), single lamellae under the fourth finger, smooth in adult males, tricarinate in females and juveniles; 19-23, mostly 20-22 (mean 20.7) single lamellae under the fourth toe (fig. 16), bicarinate in juveniles and females, bluntly unicarinate in males. Palms and soles with irregularly arranged, juxtaposed to slightly imbricate scales, spinose in juveniles and females, rounded in adult males. Fingers and toes compressed.

Sexual dichromatism present. Juveniles and females have a pattern strikingly different from that of adult males. In life the back in juveniles and females is black with golden yellow longitudinal stripes, gradually changing to blue on the tail, tip of tail completely blue. Ventral parts immaculately white. Adult males have a brown back on which a light-brown vertebral stripe, bordered by a red-brown band, is present on each side. Flanks grey-brown, in axillae and on border with belly grey. Side of head and neck black with white spots on the head, light-blue spots on the neck. Belly white, throat white with black spots or entirely jet-black, ventral surface of tail surface of tail yellow. Pupil in both sexes golden brown.

Colour in preservative. Juveniles with a black back and flanks, with five white to cream-coloured longitudinal stripes of equal width. Females have the back dark-brown, with five white (on the flanks) to cream-coloured (on the back) longitudinal stripes of equal width, bordered on both sides by black. A vertebral light stripe from the nuchals on to the base of the tail, where it vanishes. A dorsolateral stripe starting on the supraciliaries, continued on the tail. A lateral stripe starting on the anterior supralabials, passing through the ear-opening and over the insertion of the forelimb to the groin; behind the hind limb it is continued on the tail to near the tip, where it fuses with the dorsolateral stripe. The vertebral and dorsolateral light stripes are about half a scale wide and occupy adjoining parts of the scales in two scale rows. The lateral line is about as wide as a scale, the scales on the lower part of the flanks being smaller than the dorsals. The accompanying black stripes are half as wide as the light stripes. Posterior part of the thighs with two large white spots or a short, horizontal, white bar; lower legs with round white spots. Ventral parts immaculately white. The dorsal surface of the head in adult males is very dark brown, the back is uniform, dark- to reddish-brown. Side of head and neck black with an irregularly interrupted light-blue stripe from the anterior labials to the insertion of the forelimb. On the side of the neck, four to five short, vertical rows of light-blue scales. Scattered light-blue scales on the flanks. Some white or light-blue spots on the supraciliaries. Ventral parts white with some black-edged scales or black spots on the border of throat and chest. It may also occur that the entire chin, throat and chest are black, in which case the ventral surfaces of the forelimbs are spotted with black. A white rim along the upper eyelid only.

A medium-sized, stoutly built lizard, with well developed legs. Maximum snout-vent length measured 90 mm in males (RMNH 17426 b), 86 mm in females (RMNH 17423 c). Recently hatched juveniles measure between 28 and 35 mm. When the limbs are laid along the body the tip of the fourth

toe reaches from between the wrist and the elbow to the axilla. The undamaged tail is 1.5-1.7 times as long as the snout-vent length in juveniles. No adult specimens with complete tails were available.

Habitat. — A ground-dwelling lizard in more or less open places, both in or near human settlements or far away from these. This skink seems to prefer rocky surfaces, both in open, grassy savanna and on "kopjes" (hills) with an open savanna forest. In human settlements it can be found in gardens and in concrete gutters. It does not seem to climb trees.

Natural history. — A diurnal lizard which was active from sunrise to sunset. It was seen basking at several occasions. Several times this skink was found at night, hiding under vegetation overhanging the walls of concrete gutters. Recently hatched juveniles were collected in March and April, but here again it should be noticed that no representative collection for the entire year was available.

Range. — A wide-ranging species, from the Nile Delta in the north to the Cape in the south, from Senegal in the west to the East African coast. The present subspecies is restricted to West-Afrika south of the Sahara and west of the Ubangi and Shari Rivers.

Remarks. — The male specimen of *"Mabuia albilabris"* mentioned by Chabanaud (1917) proved to be a male *Mabuya quinquetaeniata scharica* Sternfeld (MP 17-65).

Mabuya rodenburgi nov. spec.

Holotype. — 1 ♀, RMNH 17570 a, Akosombo, Eastern Region, Ghana (6° 16' N 0° 04' E), 3-VI-1973, leg. W. F. Rodenburg.

Paratypes. — 1 ♀, RMNH 17434, Akosombo, Eastern Region, Ghana (6°16'N 0°04'E), 28-VII-1971, 2 juvs., RMNH 17447, Akosombo, Eastern Region, Ghana (6°16'N 0° 04'E), 18-III-1973, 4 ♀♀, 2 juvs., RMNH 17570 b-g, Akosombo, Eastern Region, Ghana (6°16'N 0°04'E), 3-VI-1973, all leg. W. F. Rodenburg; 1 ♀, BM 1973.661, Iseyin, Western State, Nigeria (8°N 3°40'E), 11-XI-1972, leg. R. C. Oldham.

Diagnosis. — A small, slender skink with short limbs. Head small and distinctly depressed. A pair of transversely enlarged nuchals is present, supranasals are separated, the prefrontals may be in contact. There are two scales between the fourth supraocular and the anterior supratemporal. The number of lamellae under the fourth toe varies between 19 and 23, that under the fourth finger from 14 to 17. Brown above, with distinctly lighter

vertebral and dorsolateral stripes; space in between the vertebral and dorsolateral stripes with black spots. An indistinct, greyish-white lateral stripe. Ventral parts dirty white. A white area around the ear-opening. Eyelids without a white rim, entirely white.

Description of the holotype. — Head small and very flattened, representing 20% of the snout-vent length, 2.3 times as long as deep, 1.6 times as long as wide Rostral pentagonal, clearly visible from above, one and a half time as wide as deep. A pair of narrow elongate supranasals, separated by the rostral and the frontonasal forming a suture. Frontonasal large, irregularly octagonal, 1.2 times as wide as long. A pair of quadrangular prefrontals, forming a short suture. Frontal elongate rhomboidal, 1.6 times as long as wide, as long as its distance to the tip of the snout; in contact with the second and the third supraocular. A pair of irregularly pentagonal frontoparietals, forming a long median suture. Interparietal elongate, rhomboidal, twice as long as wide, with a distinct, round, opaque area in its posterior part, covering the parietal eye. Parietals large, about as long as wide, forming a short suture behind the interparietal. One pair of transversely enlarged nuchals, slightly less than three times as wide as long, posterior border with 13 (left) and 14 (right) distinct keels. Four supraoculars, the first and fourth subequal, smallest, the second largest. Supraciliaries three on each side, the anterior one very long, in direct contact with the supraoculars. Between the fourth supraocular and the anterior supratemporal there are two scales. Anterior supratemporal very large, much larger than the second supratemporal which borders the nuchal. Nostril obliquely oval, in the posterior part of a single scale, just behind the suture between rostral and first supralabial. Nasal scale followed by a postnasal, two loreals and two scales that might be called preoculars. Supralabials eight, of which the fifth is largest and under the eye, the eighth is minute. Two rows of postoculars. Temporals few and large, decreasing in size posteriorly, six vertical rows between the postoculars and the ear-opening. Ear-opening large, oblique oval, slanting posteriorly; anterior border with five small, rounded lobules; posterior border smooth; external auditory meatus moderately long, tympanum well visible.

Mental roughly oval, nearly twice as wide as long; postmental pentagonal, twice as wide as long. Three pairs of chin-shields, the anterior pair forming a median suture, the posterior pairs separated by one, respectively three scales. Eight infralabials, of which the first is minute.

All ventral and dorsal head-scales smooth. Parietals with 10 (left, right parietal damaged) short, indistinct keels along the posterior border. Post-

oculars, temporals, supratemporals and the posterior two supralabials strongly keeled, with up to eight keels on the supratemporals.

Gulars and ventrals smooth, cycloid, imbricate, in longitudinal and obliquely transverse rows, subequal. Collar absent. Fifty-nine scales between the first pair of chin-shields and the preanals. Preanal plate covered with

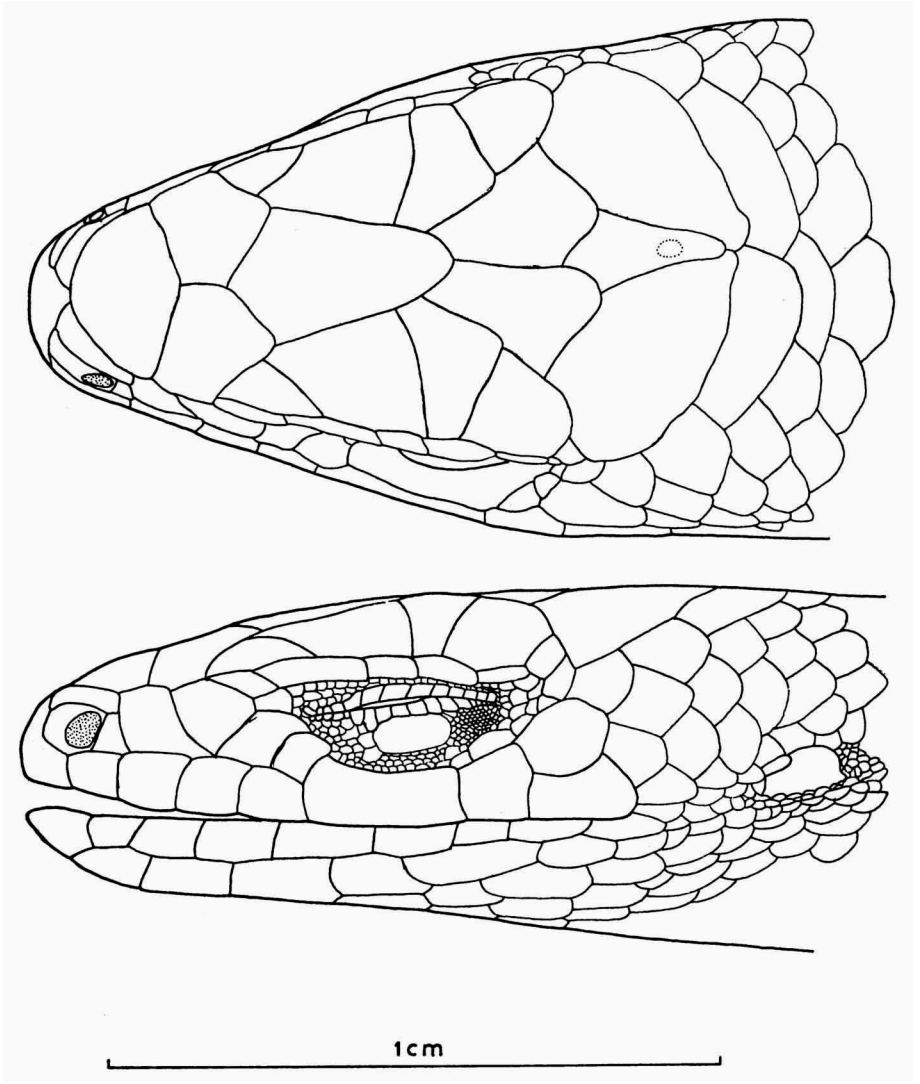

Fig. 14. *Mabuya rodenburgi* nov. spec.; dorsal and lateral view of the head of the holotype, ♀, RMNH 17570a, Akosombo.

scales similar to the ventrals, except the row bordering the vent anteriorly, which consists of enlarged scales.

Scales on the nape imbricate, hexagonal, more than twice as wide as long, with five keels Nuchals bordered by a pair of narrow, transversely enlarged scales. Scales on the side of the neck much smaller, imbricate, cycloid, with two (mostly) to three keels. Scales on the nape and on the side of the neck in longitudinal and oblique rows.

Dorsals and laterals identical, imbricate, hexagonal, slightly wider than long, with five keels, in longitudinal and obliquely transverse rows. Total number of scales around midbody 34; 61 transverse rows of scales between the nuchals and the base of the tail. No distinct boundary between ventrals and laterals.

Scales on the tail imbricate, on the dorsal surface similar to the dorsals, but only with three or four keels. Under the tail a row of transversely enlarged imbricate, smooth scales. Tail more or less quadrangular in cross-section, distinctly depressed.

Scales on the ventral surfaces of the limbs imbricate, cycloid, smooth, on the dorsal surfaces imbricate, hexagonal, with two keels on the hind limbs, with three keels on the forelimbs. Scales on the limbs in longitudinal and transverse series. Fourteen (left) or fifteen (right) single, smooth lamellae under the fourth finger, 21 (left) or 22 (right) under the fourth toe. Palms and soles with slightly tubercular, rounded, juxtaposed scales, arranged in indistinct longitudinal and oblique rows.

Colour in life. Anterior part of the back brown with four rows of black spots which merge into two bands after a short distance. Dorsolateral stripes gold-coloured. Vertebral stripe light-brown. Flanks grey-brown, a narrow, orange rim around the ear-opening, an orange band from axilla to groin. Chin and throat pale orange. Chest and belly greyish white, tail grey. Iris gold-coloured; tongue pink with a blue spot in front. A white line along the upper eyelid, lower eyelid with an interrupted white line.

Colour in preservative. A wide light-brown vertebral stripe from the nuchals on to the tail, bordered by two paravertebral series of dark-brown spots on each side. The paravertebral series of spots start just behind the nuchals as separate series, at the level of the forelimbs the spots become larger and form wide dark-brown bands, mottled with light-brown, on each side of the vertebral stripe. Dorsolateral stripes yellowish brown, from the supratemporals on to the tail. A dark-brown band on the flanks, from the ear-opening on to the tail. An indistinct greyish lateral stripe from axilla to groin. Upper lips whitish, mottled with brown; lower lips, chin-shields and gulars white, with small, brown spots. Remaining ventral surfaces

greyish to yellowish white, immaculate. Upper eyelid whitish, with an uninterrupted white line, lower eyelid with an interrupted white line. A narrow whitish area around the ear-opening.

An adult female, with slender, distinctly depressed body and short limbs. Snout-vent length 63.5 mm. The tail is wide and depressed, measuring 51 mm and regenerated from 34 mm. When the limbs are laid along the body fingers and toes touch.

Paratypes. — In all essential characters they agree with the holotype, but of course there is some variation, which is pointed out here. The head accounts for 20-28% of the snout-vent length and is proportionally slightly longer in juveniles than in adults; it is 2.2-2.8 times as long as deep and 1.5-1.7 times as long as wide. The nasals are separated in all specimens, the prefrontals form a short suture in five specimens, they are separated in the remaining five. The frontal is in contact with the first supraocular in nine specimens, separated from it in one. The parietals form a short suture behind the interparietal in seven out of nine Akosombo specimens. The number of supraciliaries varies from two to four, in eleven instances it is four, in seven it is three and twice two. When there are two or three supraciliaries the first one is very long; when there are four supraciliaries the second one is very long. All specimens have two scales between the fourth supraocular and the anterior supratemporal. The number of supralabials invariably is eight, with the fifth bordering the eye. There are three to five lobules along the anterior margin of the ear-opening. In the Nigerian specimen and in two of the Akosombo specimens there are only two pairs of chin-shields, the other specimens have three pairs. The number of infralabials can be seven (mostly) or eight. Fifty-nine to 71 (mean 66.2) scales between the first pair of chin-shields and the preanals (figs. 15, 17). Number of scales around midbody 34-36 (mean 35.5) (fig. 19). Sixty to 66 (mean 62) transverse rows of scales between the nuchals and the base of the tail (figs. 15, 18). There are 14-17 (mean 15.6) lamellae under the fourth finger, 19-23 (mean 21.3) under the fourth toe (figs. 15, 16).

Most specimens have some white spots on the temporal region. The two recently hatched juveniles have a distinct white band from the last supraciliary via the supratemporals to the nuchals; in larger specimens this band disappears.

The holotype is the largest female specimen. Two recently hatched juveniles measure 24 and 31 mm. No males are known, but I think there are too few specimens to draw the conclusion that we are dealing with a new unisexual species In two juveniles and in one adult the tail is not

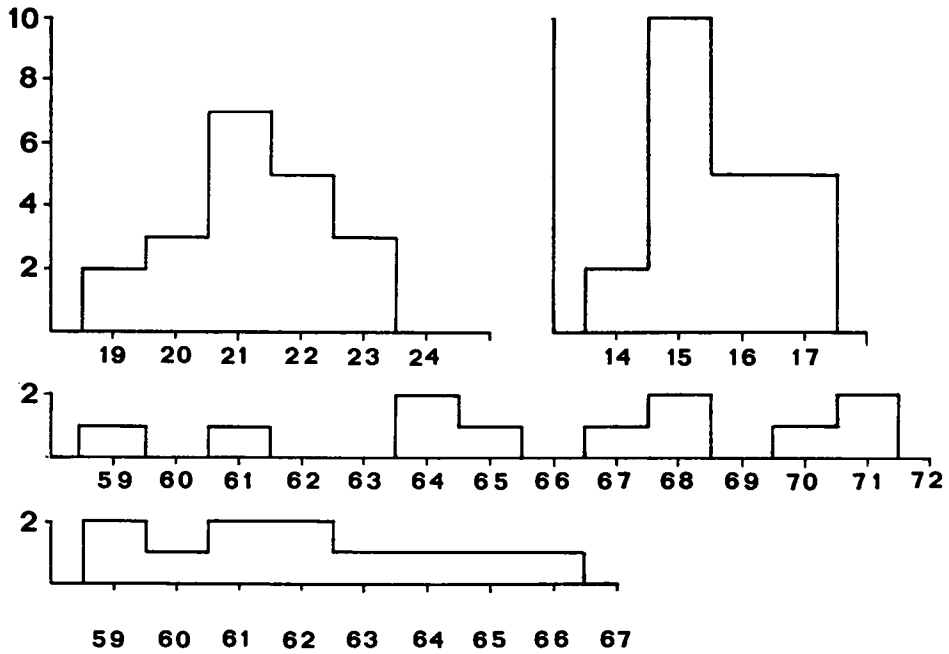

Fig. 15. Histograms showing the variation in the number of scales between the nuchals and the base of the tail (lower figure) and between the first pair of chin-shields and the preanals (centre), lamellae under the fourth toe (upper left) and under the fourth finger (upper right) for *Mabuya rodenburgi* nov. spec. For further explanation see fig. 3.

damaged, in the juveniles it is 1.7-2.0 times as long as the snout-vent length, in the adult female 1.6 times.

Habitat. — Most specimens from Akosombo (RMNH 17447, 17570) were found in stone gutters near a swimming pool in the centre of the village. One specimen (RMNH 17434) was found along a road in the village. The Nigerian paratype was found "under rotting vegetation that had been laid out on an exposed rock at the foot of a small inselberg" (Miss A. G. C. Grandison after Roy Parker, in litt.). From these scanty observations it might be concluded that this is a ground-dwelling skink in (rocky) savanna areas.

Natural history. — Recently hatched specimens were collected in Akosombo on March 18 and June 3, 1973. The Akosombo specimens on which more data are available all were collected between 12.00 a.m. and 4.00 p.m., while they were active. The lizards took sun-bathes near cracks in the

gutterwall and when pursued hid in those cracks (personnal communication by W. F. Rodenburg).

Range. — Only known from eastern Ghana (Akosombo) and western Nigeria (Iseyin). It may be expected to occur in Togo and Dahomey as well.

Etymology. — The species has been named after Mr. W. F. Rodenburg, the collector of the type series and my companion on many collecting trips in Ghana.

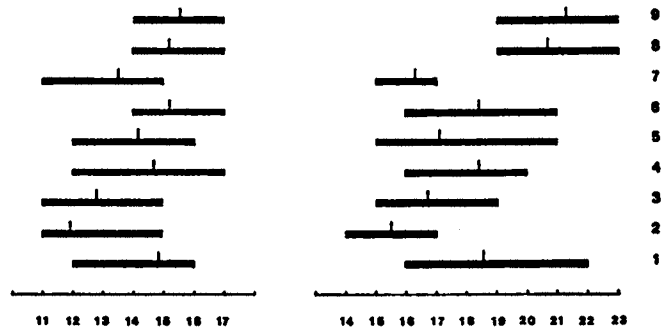

Fig. 16. Diagram showing the range of the number of lamellae under the fourth finger (left) and under the fourth toe (right) for West-African species of *Mabuya*. The mean is indicated by a short vertical bar. The numbers along the ordinate indicate the different species: 1 = *Mabuya affinis* (Gray), 2 = *M. albilabris* (Hallowell), 3 = *M. buettneri* Matschie, 4 = *M. m. maculilabris* (Gray), 5 = *M. perrotetii* (Duméril & Bibron), 6 = *M. p. polytropis* Boulenger, 7 = *M. polytropis occidentalis* nov. subspec., 8 = *M. quinquetaeniata scharica* Sternfeld, 9 = *M. rodenburgi* nov. spec.

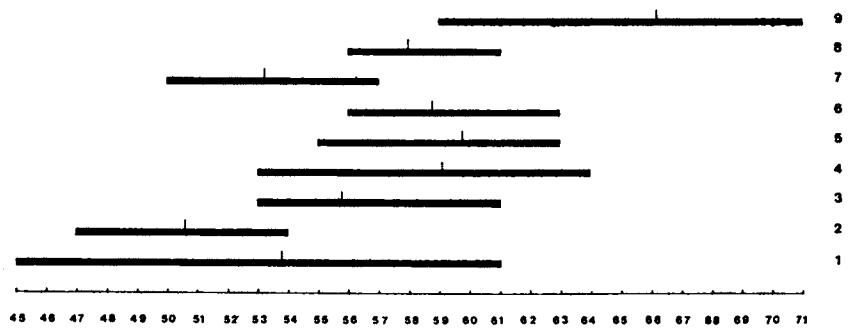

Fig. 17. Diagram showing the range of the number of scales between the first pair of chin-shields and the preanals for West-African species of *Mabuya*. For further explanation see fig. 16.

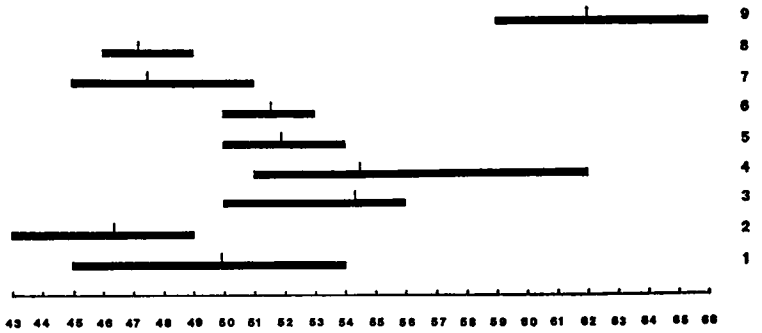

Fig. 18. Diagram showing the range of the number of scales between the nuchals and the base of the tail for West-African species of *Mabuya*. For further explanation see fig. 16.

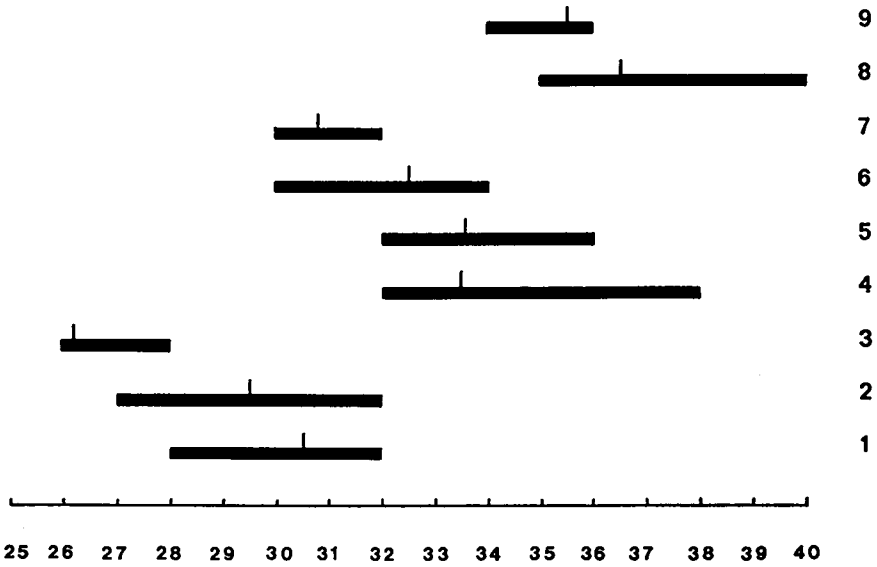

Fig. 19. Diagram showing the range of the number of scales around midbody for West-African species of *Mabuya*. For further explanation see fig. 16.

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Plate 1

Mabuya affinis (Gray). Figs. 1-2. Lateral and dorsal aspect of ♀, RMNH 17330, Ajufia. Figs. 3-5. Lateral, dorsal and ventral aspect of ♂, RMNH 17353, Amedzofe. × 1.

Plate 2

Mabuya albilabris (Hallowell). Fig. 1. Lateral aspect of ♂, RMNH 17313, between Baku and Suponso. Fig. 2. Lateral aspect of ♀, RMNH 17314, Sefwi Asempanaye. Fig. 3-4. Dorsal and ventral aspect of ♂, RMNH 17313, between Baku and Suponso. × 1.

Plate 3

Figs. 1-3. *Mabuya buettneri* Matschie; dorsal, lateral and ventral aspect of ♂, BM 1972.850, Ahamameti. Figs. 4-6. *Mabuya perrotetii* (Duméril & Bibron); dorsal, lateral and ventral aspect of hgr., RMNH 17403, Kpandu. × 1.

Plate 4

Figs. 1-3. *Mabuya m. maculilabris* (Gray); dorsal, lateral and ventral aspect of ♀, RMNH 17387, Breman Asikuma. Figs. 4-6. *Mabuya rodenburgi* nov. spec.; dorsal, lateral and ventral aspect of holotype ♀, RMNH 17570a, Akosombo. × 0.85.

Plate 5

Mabuya quinquetaeniata scharica Sternfeld. Figs. 1-3. Dorsal, lateral and ventral aspect of ♂, RMNH 17423b, Kpandu. Figs. 4-6. Dorsal, lateral and ventral aspect of ♀, RMNH 17423c, Kpandu. × 0.75.

Plate 6

Mabuya polytropis occidentalis nov. subspec. Figs. 1-3. Dorsal, lateral and ventral aspect of holotype ♀, RMNH 17419, Bia Tributaries South Forest Reserve. × 1.

ERRATA

M. S. Hoogmoed, 1974. Ghanese lizards of the genus *Mabuya* (Scincidae, Sauria, Reptilia). — Zoologische Verhandelingen, Leiden, 138: 1-62, 6 pls.

Unknown circumstances unfortunately have led to some interchanges of figures in the above paper, which might cause serious misunderstandings. Thus:

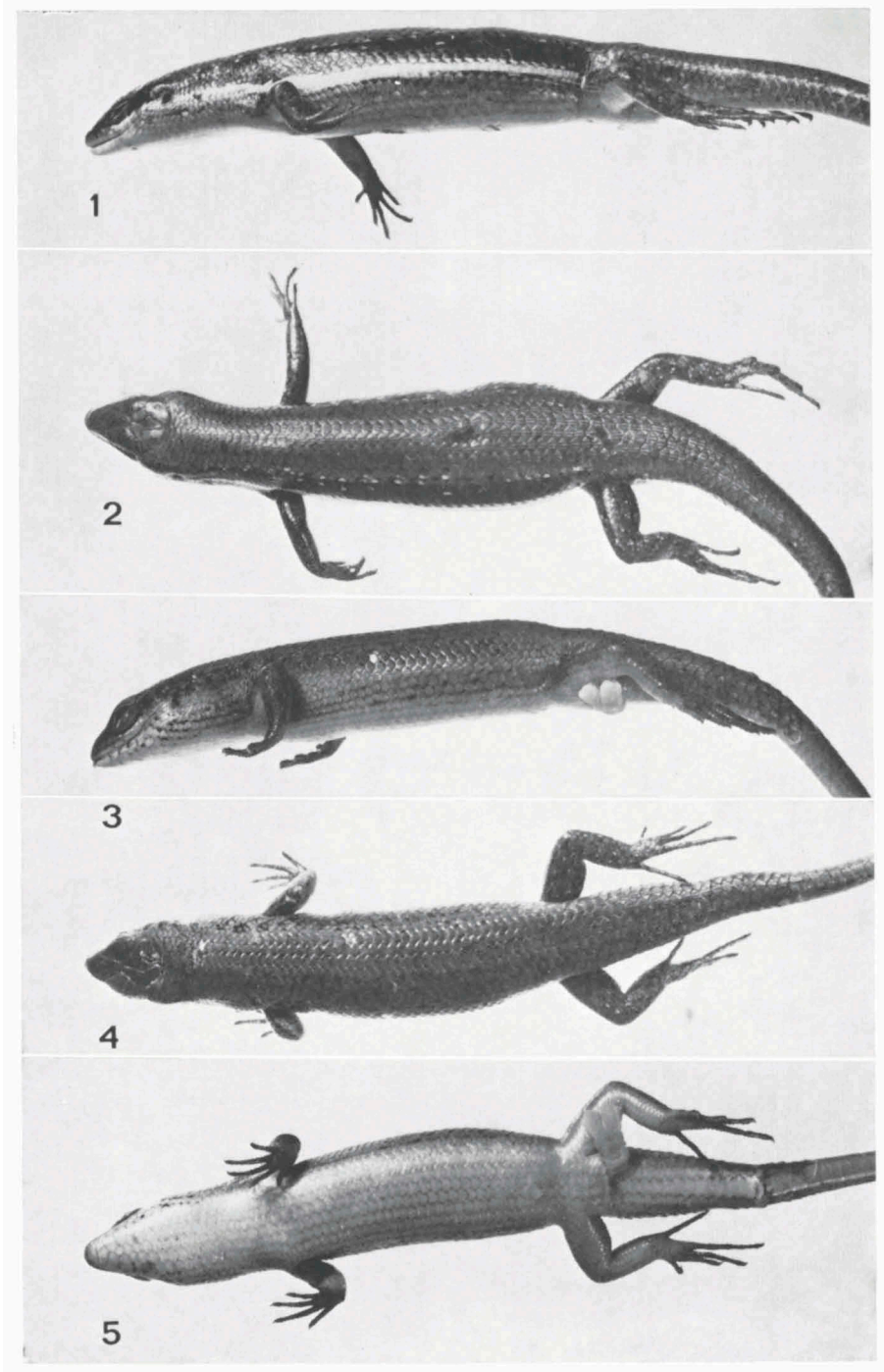
Fig. 1 (*"Mabuya affinis"*) actually represents Fig. 14. *Mabuya rodenburgi,*

Fig. 7 (*"Mabuya buettneri"*) actually represents Fig. 1. *Mabuya affinis,*

Fig. 8 (*"Mabuya m. maculilabris"*) actually represents Fig. 13. *Mabuya quinquetaeniata,*

Fig. 13 (*"Mabuya quinquetaeniata scharica"*) actually represents Fig. 8. *Mabuya m. maculilabris,*

Fig. 14. (*"Mabuya rodenburgi"*) actually represents Fig. 7. *Mabuya buettneri.*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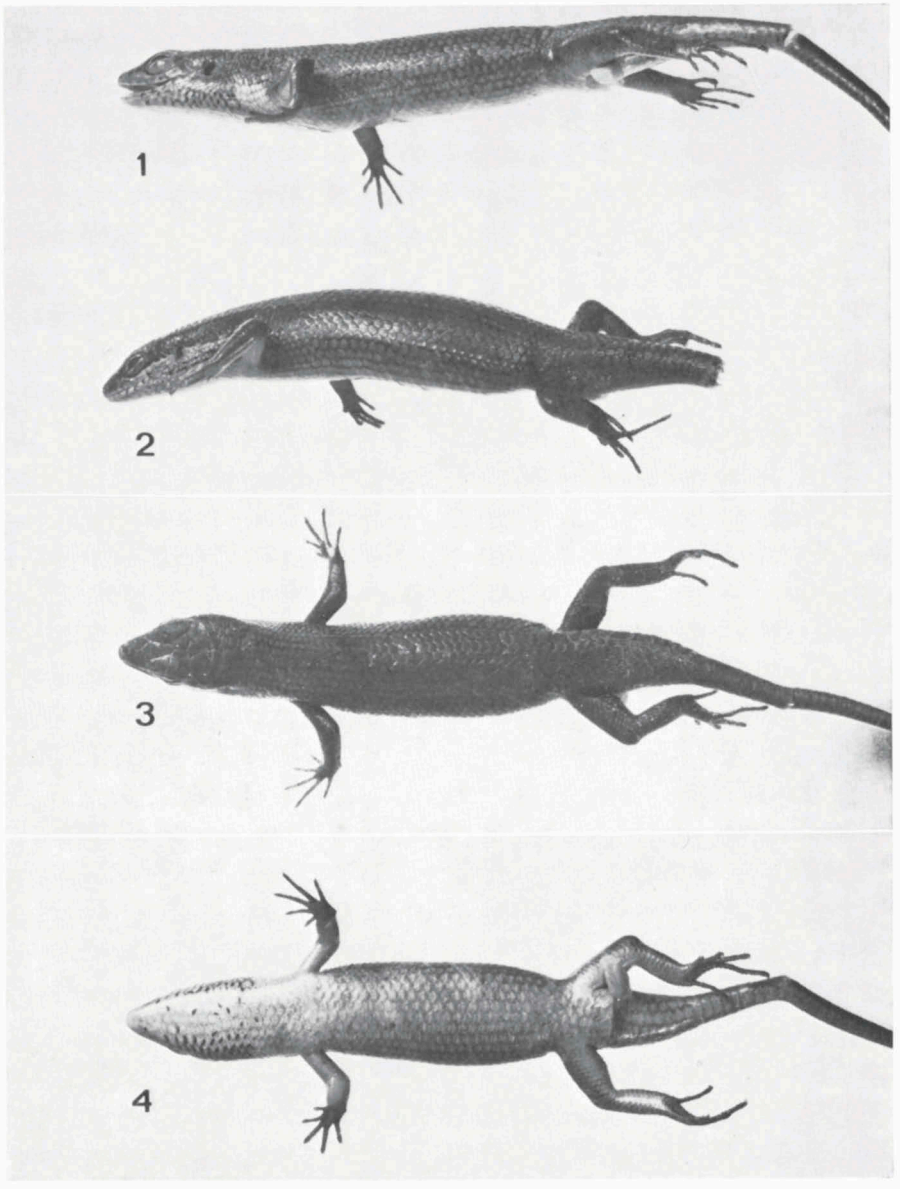
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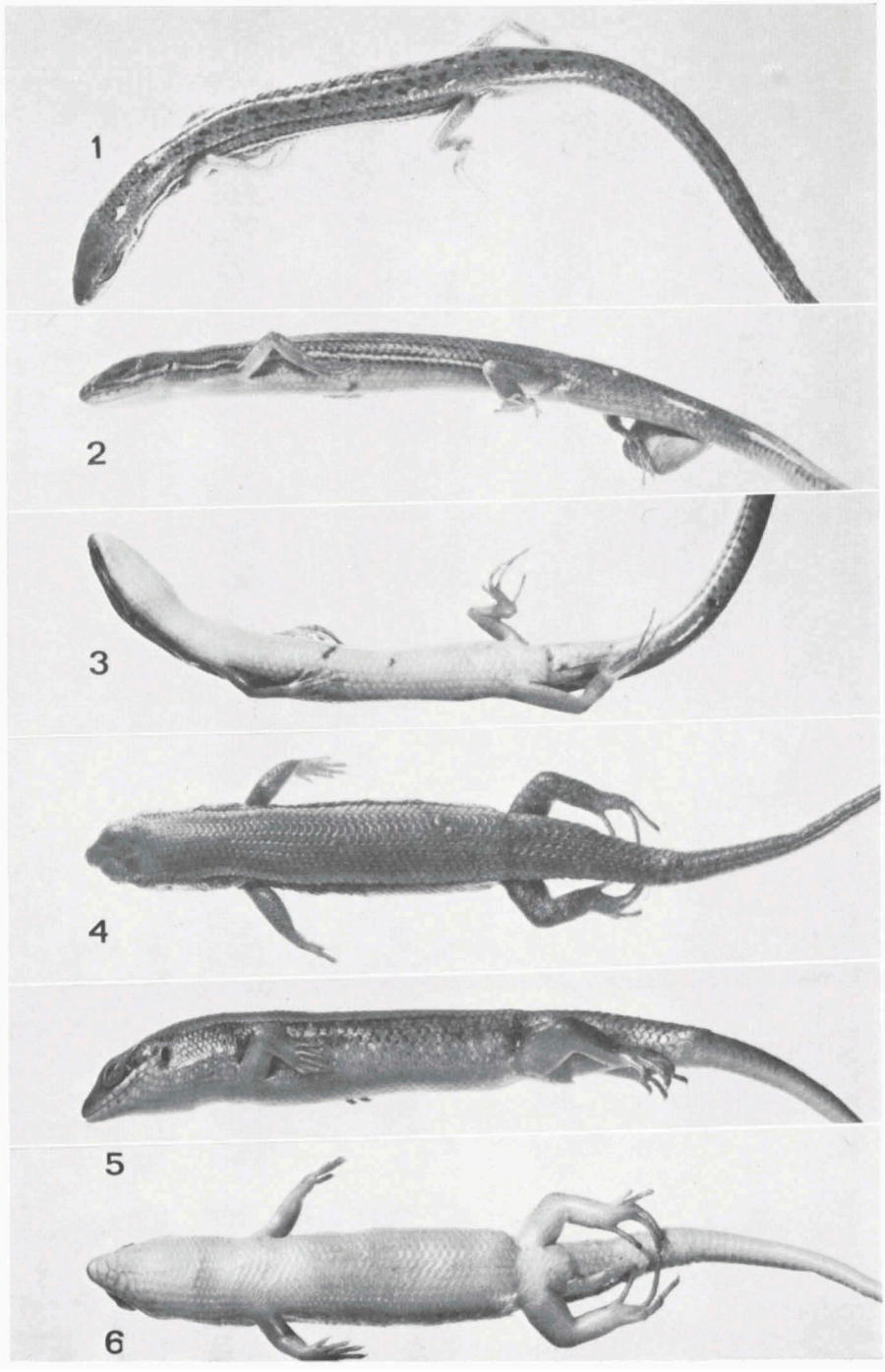
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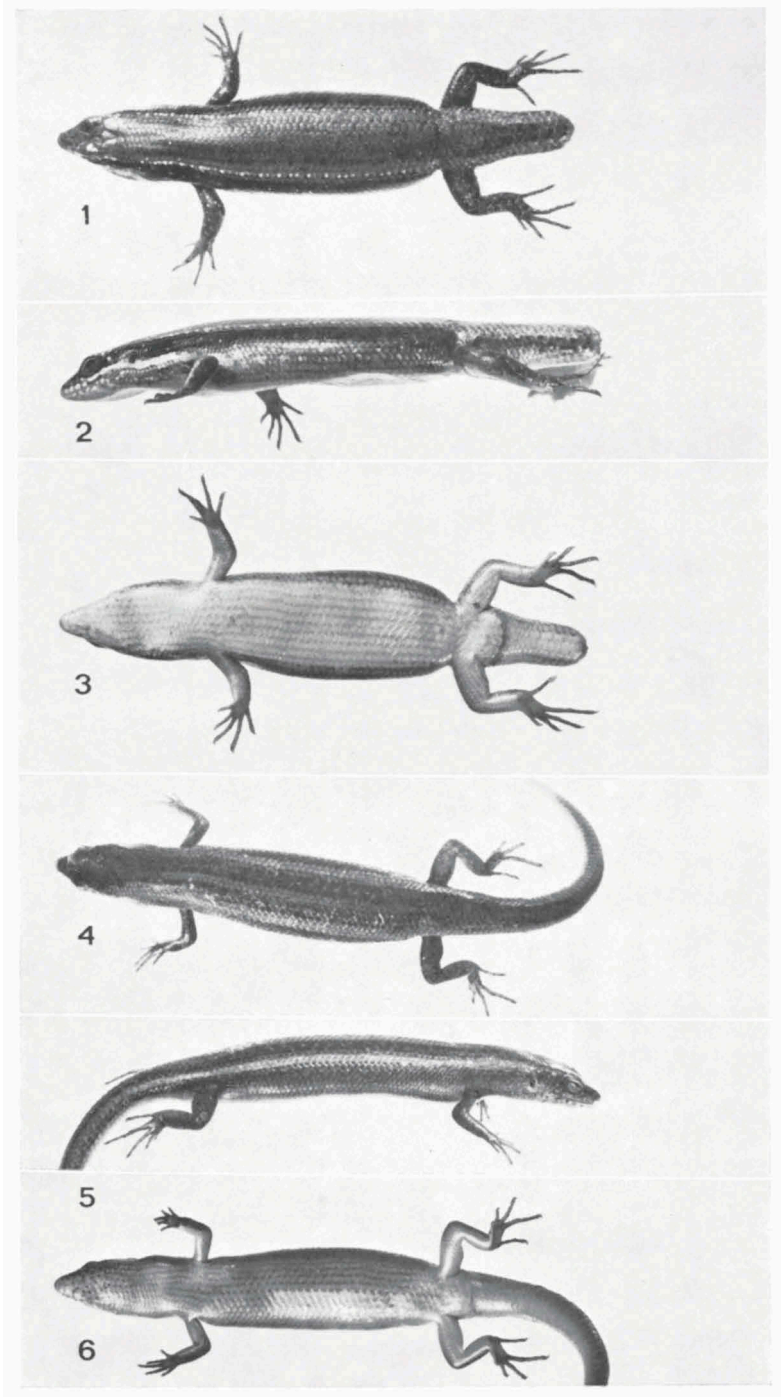
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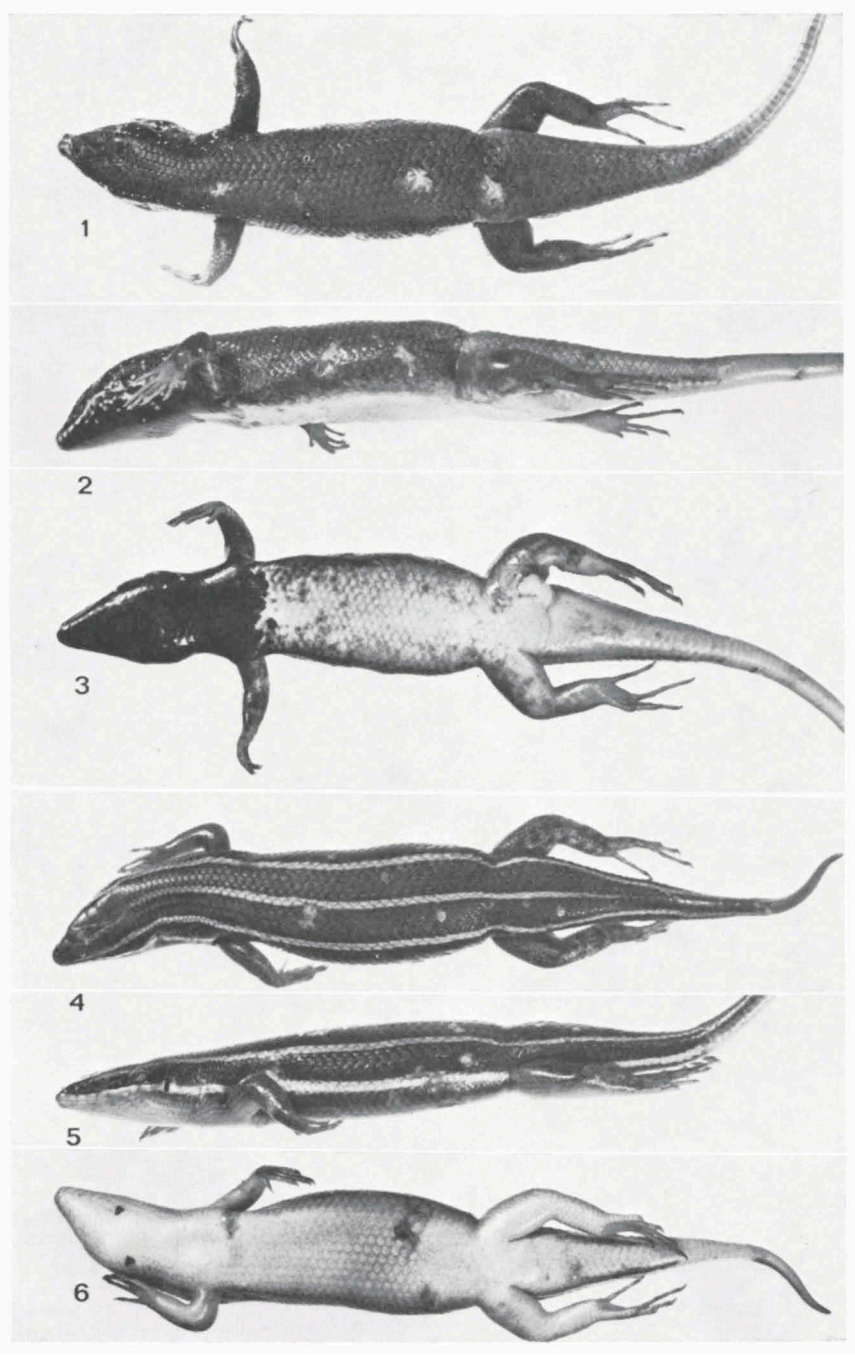
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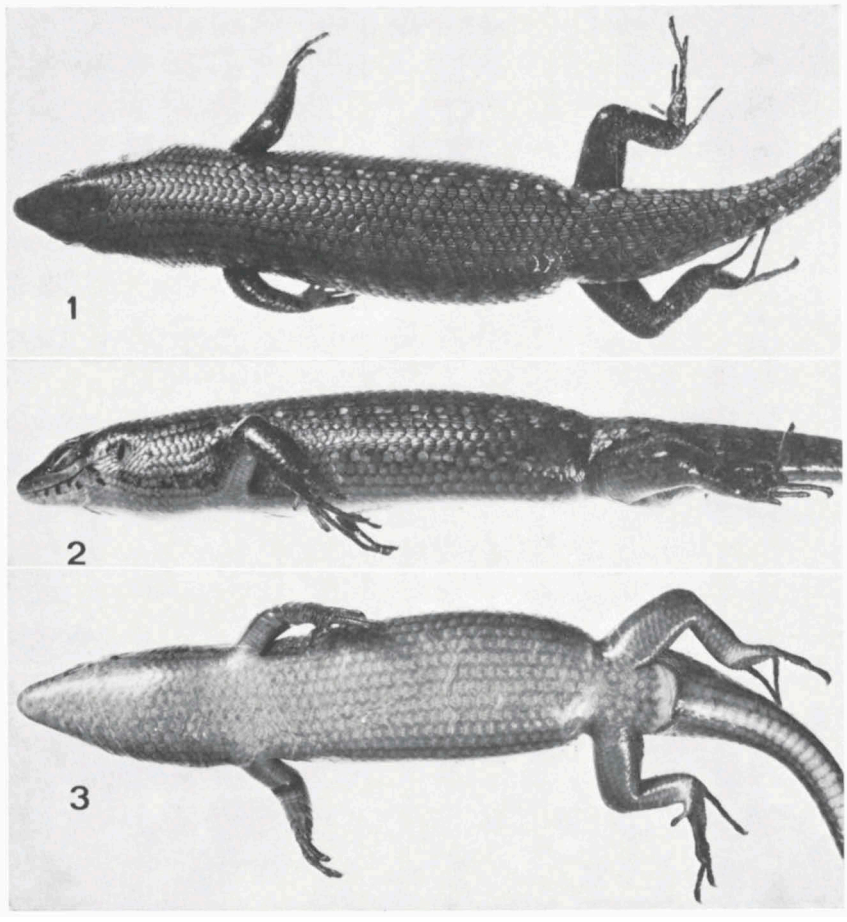
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