

A Key to the South African Species* of Geckonidae, Scincidae, Gerrhosauridae, and Lacertidae, together with some Notes on the Specific Characters and a Brief Summary of the Known Facts of their Distribution.

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THE following paper is based mainly on the extensive collections of the Transvaal Museum, but I am also greatly indebted to the authorities of all the other South African museums for the loan of material. The investigation was undertaken with two chief objects: (1) to ascertain the specific areas of distribution; (2) to define the limits of the various species. As regards the facts of distribution I have made use of all the records in the literature listed in Ann. Trans. Mus., Vol. 2, No. 1, p. 35 (for a complete bibliography see Roux in Zool. Jahr, 1907, XXV), but I have not thought it necessary to quote every record, nor the authority for all records, except in cases of particular importance. The distribution of reptiles which are confined to South Africa is very ill-known, chiefly because this group has received but little attention from local workers; in fact, so far as I know, only one extensive list of local reptiles has been published in South Africa (Ann. Natal Govt. Mus., Vol. 1, Part 3).

The question of the range of variation within a species could not be fully dealt with, mainly because of inadequacy of material, but there is sufficient evidence to show that South Africa has been credited with more reptiles than it really possesses, for in some cases so-called species are merely geographical varieties, whilst others represent nothing more than individual variations; the latter class must, of course, be abolished, but fairly well-marked geographical varieties may be entitled to stand for convenience sake, even though an occasional intermediate should appear.

The descriptions and keys employed here are mainly founded on those of the British Museum Catalogues.

GECKONIDAE.

I. CHONDRODACTYLUS.

Tubercles on supraorbital edge enlarged, separated from those on the other side by two (or only one) series of tubercles; the body covered dorsally with irregular flat granules and round keeled tubercles; horizontal diameter of eye equal to length of eleven or twelve scales on middle of belly.

Light grey-brown above, with five blackish angular transverse bands on the back, and sometimes round white spots on the sides of the body; a dark median longitudinal streak on the nape, and an oblique dark band from the eye towards the latter.

Differing from *angulifer* thus:—

C. angulifer Pet.

Tubercles on supraorbital edge scarcely enlarged, separated from those on the other side by three series of tubercles in the middle; enlarged

* For a key to the genera of the S. African lizards, see Annals Trans. Mus., vol. 2, No. 1, p. 38,

dorsal tubercles larger, more strongly keeled, subtriangular; horizontal diameter of eye equal to length of six or seven scales on middle of belly.

A blackish crescentic band concavity forwards, extending from shoulder to shoulder, and pairs of round whitish spots on the back.

* *C. weiri* Boul.

2. PTENOPUS.

Head and body with uniform small granules all over, a little larger on the belly; nostril between two nasals, the antero-inferior being larger and in contact with rostral and first labial; no chin shields. Pale above, with dark reddish-brown reticulations forming spots. *P. garrulus* Smith.

3. PHYLLODACTYLUS.

Digital expansion considerably wider than the digit. Nostril between the rostral and three small nasals, the first labial being cut off by the crescentic infra-posterior nasal. No regular chin shields, but small polygonal scales passing gradually into the minute granules of the gular region. Greyish or reddish-brown above, variegated with dark-brown.

P. porphyreus Daud.

Digital expansion scarcely wider than the digit. Nostril pierced between rostral, first labial, and three small nasals, which are generally granules. A row of small chin shields. Upper surfaces greyish-brown, usually with four or six dark-brown longitudinal lines on the back and tail, but sometimes with wavy transverse lines. *P. lineatus* Smith.

4. OEDURA.

Nostril between four or five scales, the upper largest and separated from its fellow by a granule; head with small round convex granules, largest on the snout; chin shields small and flat, passing gradually into the small granules of the throat.

Pale-brown above, mottled with darker transverse bands; tail with blackish transverse spots dorsally, and whitish annuli in the distal half.

O. nivaria Boul.

Nostril between the rostral and three nasals, the upper of which is large, and forms a suture with its fellow. No chin shields; head with uniform small round flat granules.

Greyish above, with small brown spots and transverse brown bands, five on the body and three on the tail. *O. africana* Boul.

5. HEMIDACTYLUS.

Digits free, the distal joints long. Dorsal surface of body with small granules and small irregularly scattered convex or subtriangular tubercles; tail with very small scales and large conical tubercles arranged in six longitudinal rows. Male with fifteen or more femoral pores on each side. Grey or light brown above, with dark spots or undulated cross bands.

H. mabowia Mor.

6. LYGODACTYLUS.

Mental broken by a continuation forwards of the line between lower labials and gulars on either side; four or five pairs of subdigital lamellae.

* See note on this species.

Brownish or olive, with darker variegations; a blackish lateral streak passing through the eye, generally broken up on the sides of the body; sometimes a pale dorso-lateral streak. *L. capensis* Smith.

Mental entire, not cut by a continuation forwards of the line between lower labials and gulars; three or four pairs of subdigital lamellae.

Olive above, with numerous small pale spots edged with black.

L. ocellatus Roux.

7. HOMOPHOLIS.

Head above and beneath minutely granulate; nostril between first labial and five small nasals; rostral subquadrangular; snout very convex, in length one and a quarter times diameter of orbit.

Body scales above and below equal, small, subhexagonal, imbricated. Grey, with dark-brown variegations above; a dark-brown band from behind the eye to a little beyond the scapula region. *H. wahlbergi* Smith.

Head with small granules, which are considerably larger on the snout; nostril between first labial and six scales, of which the two anterior are largest; snout equal in length to the orbit or scarcely longer; dorsal scales of body larger than the ventrals; rostral six sided, its upper side in contact with the anterior nasal and an internasal. Uniform greyish above.

H. macrolepis Boul.*

8. PACHYDACTYLUS.

SUBDIGITAL LAMELLAE 7-10.

Dorsally with flattened granular scales and some small keeled ones, intermixed with large strongly keeled scales, arranged in longitudinal series; head covered with small flattened convex or bluntly keeled scales, largest on the occiput; ear narrow vertical; eight to ten transverse lamellae below the digits. Brown or greyish above, back and tail with narrow, rather indistinct transverse dark-brown bands; a dark-brown line on each side of the head passing through the eye, and another from the nostril to the upper border of the orbit. *P. bibroni* Smith.

Similar to *bibroni* in colour and other general characters, but differing in that dorsal tubercles are quite flat, arranged in rather irregular longitudinal rows; across middle of back nineteen to twenty-one tubercles; across middle of belly forty-three to forty-five scales.

P. laevigatus Fisch.

Dorsally with minute granules, intermixed with large trihedral tubercles, forming eighteen longitudinal series; hinder part of head with minute granules, intermixed with oval smooth or obtusely keeled tubercles; naso-rostrals in contact; ear small, oval; six to nine subdigital lamellae. Dorsally with three broad dark-brown crossbands on the body; a dark-brown horseshoe-shaped streak round the back of the head, passing through the eyes. *P. fasciatus* Boul.

SUBDIGITAL LAMELLAE, 3-6.

Dorsal tubercles keeled (not conical).

Dorsally with very small granules and large keeled round or oval tubercles, symmetrically arranged; the granules of interocular region and

* This species may be a synonym of *wahlbergi*.

hinder part of the head intermixed with large round keeled tubercles; naso-rostrals in contact (sometimes separated in young or half-grown individuals); tail annulate, with alternating smooth scales and large feebly keeled tubercles or scales; five to six subdigital lamellae. Pale above, with dark-brown and whitish variegations; a dark-brown streak on each side of the head, passing through the eye. *P. capensis* Smith.

Similar to *capensis*, but differing in that naso-rostrals are not in contact; the first labial is pentagonal, as high or higher than broad, and it borders the nostril; the dorsal tubercles are arranged in more or less longitudinal rows, the scales of median row less convex and weaker-keeled than those laterally situated. Pale above, with five or six dark stripes across the back. *P. weberi* Roux.

Four to five subdigital lamellae; enlarged dorsal tubercles, rather small, keeled, but not symmetrically arranged; the interocular region and back of the head with only a few scattered, slightly enlarged granules; naso-rostrals separated by a granule; mental longer than broad. Pale above, irregularly spotted all over with dark-brown (affinis), or four broad brown transverse bars on the back, and a broad brown crescent-shaped band, bordering the head posteriorly (*formosus* s. st.). *P. formosus* Smith.

Four subdigital lamellae; dorsal tubercles feebly keeled and irregularly arranged; naso-rostrals separated; mental square, not narrowed posteriorly; outer part of femur and tibia with scattered oval strongly keeled large tubercles. Reddish-brown above; the back with five transverse, dentated, whitish, dark-brown-edged bands, much narrower than the interspaces between them. *P. mentomarginatus* Smith.

Dorsal tubercles conical or subconical.

Head covered with conical tubercles and small granules; body dorsally with small granules and large conical spinose tubercles, irregularly arranged; lower surfaces with granular subconical scales; naso-rostrals separated by a granule; four or five subdigital lamellae. Greyish-brown above, with four transverse dentated whitish bars on the back, which are narrower than the intervals; a whitish band from the mouth to the anterior crossbars. *P. rugosus* Smith.

Head scales smooth, flattened, not conical; dorsal surface of body with keeled subconical or conical tubercles and small granules; ventrally with smooth, flat, imbricated scales; naso-rostrals in contact; four or five subdigital lamellae. Head pale, bordered by a black band starting from the nostril, passing through the eye and round the occiput; this dark band bordered posteriorly by a pale one; the body is dark with two pale bands dorsally. *P. oshaughnessyi* Boul.

Dorsal tubercles distinct from granules only by their larger size.

A few conical tubercles on outer side of tibia; naso-rostrals rather widely separated; three or four subdigital lamellae. A broad dark-brown streak on the side of the head, passing through the eye and converging in a curve towards its fellow on the occiput; back with four longitudinal series of dark-brown spots, sometimes confluent into bands.

P. maculatus Gray.

Dorsal scales all equal.

Snout usually very short, hardly as long as diameter of orbit; naso-rostrals usually in contact; three subdigital lamellae; caudal scales three or four times as large as the granules of the back. Dorsally grey, with reddish-brown blackish-margined markings as follows: a spot on the nose and another on the forehead, a semicircular broad bar round the back of the head from eye to eye, and posteriorly directed angular broad bars on the back and tail.

P. mariquensis Smith.

Snout very short; naso-rostrals usually separated; four to five subdigital lamellae; caudal scales about twice as large as granules on the back. Grey or brown above, with small white dark-edged ocelli; a straight dark streak on the side of the head and neck, passing through the eye.

P. ocellatus Cuv.

Very like *ocellatus*, but differing in that the snout is longer and more pointed; the scales on the snout are three or four times as large as those on the back of head (scales of head and body subequal throughout in *ocellatus* and *mariquensis*). Brown above, spotted with blackish-brown; behind the eye a yellow band, blackish-edged above. *P. punctatus* Pet.

9. COLOPUS.

Nostril between three nasals, the anterior largest; dorsal scales uniformly granular; tips of fingers slightly dilated, of toes rather narrowed. Olive-green above, with large yellow darker-edged spots confluent into irregular crossbands on the back; a yellow median streak from snout to occiput.

C. wahlbergi Pet.

10. RHOPTROPUS.

No chin shields; ear-opening horizontal; mental and contiguous labials much elongated; ten or eleven upper and eight or nine lower labials; nostril in the centre of a swelling formed by three or four nasals. Yellowish or greenish-olive above, uniform, or with small scattered dark spots.

R. afer Pet.

Mental large, subtriangular, broader than long, in contact with two chin shields; nostril between the first labial and two nasals, the latter not swollen; ear opening oblique; seven upper and six lower labials. Grey above, with round, dark-edged whitish spots; a rather indistinct dark line on each side of the head, passing through the eye.

R. ocellatus Boul.

Three chin shields; seven upper and eight lower labials. Olive-green above, marbled with blackish; three small transverse black spots near the insertion of the thighs; limbs with reddish-brown chevron-shaped bands, the tail annulate with black.

* *R. braconnieri* Thom.

11. ELASMODACTYLUS.

Nostril between rostral, first labial, and three other small scales; thirteen subdigital lamellae on median toe of hind foot; terminal joint of toes superiorly with two enlarged scales, which protect the pouch of the very minute claws. Grey above, with traces of black spots, some of the larger tubercles being black; traces of transverse bands on the tail.

E. namaquensis Sclat.

* See note.

12. PALMATOGECKO.

The whole animal uniformly granulated; digits above and below densely covered with small uniform granules, without any trace of lamellae, the short free distal joint with a faint obtuse claw; eyelid distinct all round the eye; pupil vertical. *P. rangei* Anders.

NOTES ON THE SPECIFIC CHARACTERS OF CERTAIN SPECIES.

1. *Chondrodactylus*.—The swollen palms and soles are very characteristic, and individuals are of stout build, reaching a large size. *C. weiri* Boul. (P.Z.S., 1887, p. 340) is in my opinion of doubtful validity, for its separation from *C. angulifer* is based upon characters which are all very variable in *angulifer*; this applies to the degree of enlargement of the supraorbital scales, the number of scales between the supraorbitals, the size of the ventrals relative to the eye, and the degree of keeling of the dorsal scales.

The South African Museum has a good series of *C. angulifer* from Little Namaqualand and western Cape Province. In this series there are two or three individuals which have three series of scales between the supraorbitals, but they do not also combine the other characters of *C. weiri*, and in view of the fact that none of the Cape Province specimens have precisely that combination of variations which are said to separate off the Kalahari species, the identity of this latter must remain undecided until a large series of Kalahari specimens is available for examination.

2. *Lygodactylus ocellatus* Roux.—(Zool. Jahrb., 1907, p. 406.) This seems to be a distinct species; it is easily distinguished from *capensis* by the character of the mental as given in the key. According to Roux it also differs from *capensis* in that there are only two nasals, and the nostril abuts on the rostral, whereas in *capensis* there are three nasals, and the rostral is cut off from the nasal; but we have specimens of *capensis* which have precisely the condition described for *ocellatus*, and on the other hand all our specimens of *ocellatus* have three nasals.

The character of the subdigital lamellae, which in the original description of *ocellatus* is given as three pairs, is not altogether reliable, for our specimens have definitely four pairs, though the most distal pair is small.

Apparently the two species occur together, for we have two specimens representing each species taken at Waterval Onder (Dr. Gough) on the same date, and recorded together under one number.

3. *Homopholis*.—The validity of *H. macrolepis* Boul. is very doubtful. The points of difference from *H. wahlbergi* Smith, according to the descriptions given in the B. M. Catalogue, are: in *wahlbergi* ear opening very small and round, in *macrolepis* ear opening small, roundish, subtriangular, but in the original description of *wahlbergi* the ear opening is given as narrow, oblique, broadest below; in *wahlbergi*, nostril between the first upper labial and five small nasals; in *macrolepis*, nostril between the first labial and six scales, the two anterior of which are largest; whilst according to Smith's description of *wahlbergi* there is a relatively large nasal, situated antero-ventrally, and a smaller one just above it, no mention being made of the number of posterior nasals; in *wahlbergi*, tail covered

with small smooth irregular scales; in *macrolepis*, tail with imbricate scales on the upper surface, much smaller than on the lower; and in Smith's description the scales on the under surface of the tail are larger than those on the upper surface; and others as given in the preceding key. We have a series of about a dozen specimens of a *Homopholis* from the Zoutpansberg and Barberton Districts. These exhibit great variation in respect to the number and size of nasal and internasals.

Usually there are two comparatively large anterior nasals, the ventral one considerably the larger, but sometimes these are fused together; there may be one, two, three, four, or even more internasals, and there are three or four posterior nasals; the arrangement on one side is often not quite the same as on the other side. In large specimens the upper margin of the rostral is rounded, and the rostral may best be described as subquadrangular, but in younger individuals the rostral is often six-sided. This is a character of no specific importance.

As regards the granulation of the head, in most of our specimens the granules on the snout are appreciably larger than those on the back of the head, and this is the case to a greater or less extent in all the specimens I have seen of this genus.

On comparing our specimens with the co-type of *macrolepis* (in the South African Museum), and with specimens kindly lent me by the authorities of the Natal Government Museum and the Rhodesian Museum I have not been able to resolve this long series into two species, and am provisionally referring all to *wahlbergi*. The question of the validity of *macrolepis* cannot be absolutely decided until the types of the supposed two species can be compared with a series of specimens. Larger specimens of *Homopholis* sometimes have a pair of broad black dorso-lateral bands; this appears to be nothing more than a colour variation.

4. *Pachydactylus fasciatus* Boul.—The specimen in the South African Museum labelled as the co-type of this species has on most of the digits five or six subdigital lamellae, and on the median toe there are only seven; the original description cites nine lamellae under the dilated part of the median toes. In other respects this specimen agrees with the description of the species.

Pachydactylus capensis Smith.—This species is common in the Pretoria district. Young and half-grown individuals show considerable variation in the degree of keeling of the dorsal tubercles, but in all adult specimens that I have seen the dorsal tubercles are strongly keeled, and the scales on the snout, and the larger scales on the hinder part of the head, are also definitely keeled.

In adult specimens the naso-rostrals are in contact, but in young and half-grown individuals they are sometimes separated by granules; in no case does the first labial enter the nostril. Our largest specimen measures 57 mm. from snout to vent.

Pachydactylus weberi Roux.—This species I have not seen. It should be easy to distinguish from *P. capensis* by the character of the first labial. The colour pattern is of the same type as in *P. fasciatus* Boul., the thin stripes of *weberi* representing the darker borders of the broad bands of *fasciatus*.

According to the description they are to be distinguished by the character of the naso-rostrals, and by the number of subdigital lamellae a character which, as I have shown above, is variable in *fasciatus*. Unless the character of the first labial be found to show a constant difference in the two species this recently described form will have to be reduced to a variety of *fasciatus*.

Pachydactylus formosus Smith.—We have specimens from the Rustenburg District agreeing with the form described by Mr. Boulenger as *affinis* (Ann. Mag. Nat. Hist., 6, 2, 138), which more recently is united with *formosus* (Zool. Jahrb., 25, 410). Immature specimens of this species and of *capensis* may easily be confused together, especially as the naso-rostral character is only available in the adults.

In our specimens the head is flattened from above, the back is irregularly spotted with dark-brown, and there are traces of five or six thin white stripes across the back. A single specimen from Krabbefontein (Zoutpansberg District), which I refer with some doubt to this species, has the naso-rostrals united, but the dorsal tubercles of the back are numerous and disposed quite irregularly.

Pachydactylus mentomarginatus Smith.—This species was described from small specimens, which, as suggested in the B. M. Catalogue, are probably immature. The only character by which it can be distinguished from *P. formosus* is that of the mentum, as the scaling on the head, body, and limbs is precisely the same in the two species, and the type of coloration in *mentomarginatus* is common to very young individuals of *formosus*. The mentum in typical specimens of *formosus* from western Cape Province shows some variation, and though it is normally reduced posteriorly there are one or two specimens (in the South African Museum) where it is scarcely reduced behind, and such specimens might be referred to either of these two species. I suspect therefore that *mentomarginatus* will have to sink in *formosus*.

Pachydactylus rugosus Smith.—This is a very distinct species. The characteristic conical tubercles are particularly conical and high on the dorsal surface of the neck. In *P. formosus* s. str. there is some approach to this condition in the dorsal neck tubercles, but they are not so high nor so definitely conical as in *rugosus*. The colour markings in the two species are somewhat similar, but the white bands of *rugosus* are much broader than those of *formosus*.

Subconical ventral scales are not found in any other species of *Pachydactylus*.

Pachydactylus oshaughnessyi Boul.—Mr. Chubbs' specimens agree precisely with the figure given in the B. M. Catalogue. The dorsal tubercles, however, cannot be said to be definitely conical, and they show some approximation to the condition that obtains in *P. capensis*; from this species they are at once distinguished by their smooth flattened head scales and from other allies of *capensis* by their united naso-rostrals.

Pachydactylus maculatus Gray.—The type of colour pattern is very constant in the species, but the scaling varies somewhat. There is considerable variation in the degree of enlargement of the larger tubercles, some being subconical or even conical, and though usually the enlarged

tubercles are scattered, occasionally they are more numerous than the smaller ones. Sometimes the colours of the dorsal pattern are in vivid contrast; one such specimen (Port Elizabeth Museum) could be described as having a double row of rather large, dark, black-margined islets separated by whitish reticulations; just over the neck this whitish reticulation forms a cross.

Pachydactylus mariquensis Smith.—The Port Elizabeth Museum has a specimen of this species which is abnormal in several respects. The head is considerably more flattened than usual, and the snout is relatively long and not obtuse.

There are eight lower labials instead of six or seven as in normal specimens. The markings on the snout and forehead are normal, but the semi-circular band round the back of the head is incomplete behind (as in *maculatus*). The markings on the back are all reddish-brown, margined with black, but they are arranged as a narrow, irregular, broken, reticulately-marked lateral band, and a broader irregular dorso-lateral band, these bands expanding in places into large spots, which in the posterior region of the back coalesce into transverse bands.

The long and slender tail is transversely banded, the dark bands being narrower than the pale intervals.

Pachydactylus ocellatus Cuv.—Occasionally this species has, in addition to the small ocelli, some dark blotches or longitudinally elongated dark streaks dorsally. The dark streak on the side of the head is not curved posteriorly; on the snout it is bordered above by a white streak.

Pachydactylus punctatus Pet. Our specimen from Selati (Zoutpansberg District) has the naso-rostrals united; the back is covered with smooth, flat, imbricating scales.

5. *Rhoptropus*.—I have not seen any representative of this genus. The genus *Dactylchilikon* has been reduced as a synonym of *Rhoptropus* by Mr. Boulenger, but so far as I know the validity of the species (*braconnieri* Thom.) has not been questioned.

DISTRIBUTION OF THE SPECIES.

1. *Chondrodactylus angulifer* Pet.—This species is known from Bethany and from a locality between Aus and Bethany (Great Namaqualand), from Little Namaqualand, Touws River, Beaufort West and Kenhardt (South African Museum), from Malmesbury (Boettger), from Carnarvon (Albany Museum), and from the Karroo.

Chondrodactylus weiri Boul.—Recorded from the Kalahari.

2. *Ptenopus garrulus* Smith—This species is recorded from various localities in Great Namaqualand (Angra Pequena and between Aus and Bethany), and the South African Museum has specimens from Little Namaqualand and Little Bushmanland; Mr. F. A. Pym has taken the species at Modder River, near Kimberley, and Mr. F. W. Fitzsimons has this gecko from the immediate neighbourhood of Graaff-Reinet, which is the most southern record known to me.

3. *Phyllodactylus porphyreus* Daud.—Apparently this species in South Africa is confined to the western portions of Cape Province,* though it is

recorded also from Madagascar and Kamerun, and it is very closely allied to or perhaps identical with the Australian species, *P. marmoratus*. The Cape Province records are Knysna and Table Mountain (Roux), Tokai (Mr. L. Taylor), and Calvinia, Clanwilliam, and Little Namaqualand (South African Museum).

Phyllodactylus lineatus Smith.—The locality of the British Museum Catalogue is indefinitely Cape of Good Hope, and the only other record known to me is Buffel River, Laingsburg (Roux).

4. *Oedura nivaria* Boul.—(P.Z.S., 1894, p. 726.) This was first recorded from the highest point of the Drakensberg Range in north-western Natal; later records are Durban and Transvaal (Roux), and Pirie Forest, Kingwilliamstown (Pym).

Oedura africana Boul.—(Ann. Mag. N.H., 6, 2, p. 137.) Only known from Damaraland.

5. *Hemidactylus mabovia* Moreau.—This species occurs in tropical South America and throughout the tropical parts of Africa from West Africa and German East Africa southwards, extending also into Madagascar and the islands of the Gulf of Guinea. The most southern record known to me is M'seleni, Zululand. The Transvaal Museum has numerous specimens from the Barberton District (Louws Creek and Hectorspruit) and the species is recorded from the Zoutpansberg District. According to Roux it occurs in the Pretoria District. It occurs in Angola, but there are no records from German South-West Africa nor from the Orange Free State.

6. *Lygodactylus capensis* Smith.—This species extends from Gaboon, South Angola, Lake Tanganyika, and Mozambique southwards to Natal. Smith recorded it from "Kaffirland and the districts north of Cape Colony". Apart from this the only Cape Province records known to me are Kimberley (Miss Wilman) and Ghous, near Upington, and the species has not been taken in Eastern Cape Colony by the museums of that district. The records from Natal, Zululand, Orange Free State, Transvaal, and Rhodesia are numerous, but apparently the species has not been taken in German South-West Africa.

Lygodactylus ocellatus Roux.—Described from the Pretoria District. We have specimens from Waterval Onder (Barberton District), and from Doornkop, Witpoort, near Belfast (Middelburg District), taken by Messrs. R. Gerhardt and Langenhaim.

7. *Homopholis wahlbergi* Smith.—The species *H. macrolepis* Boul, doubtfully distinct from *wahlbergi*, was described from Delagoa Bay. Smith's locality for *wahlbergi* was "Kaffirland, the country to the eastward of Cape Colony". We have the species from Waterval Boven and Louws Creek (Barberton District), from Krabbefontein, Shilowane, and Woodbush (Zoutpansberg District), and from Palapye (Bechuanaland). The Rhodesian Museum has it from Matoppo Hills and from Gwanda, and the South African Museum has a record twenty miles east of Salisbury

* The term Cape Province is used in its present-day sense for the former Cape Colony; it must not be confused with the Cape Province of botanists.

(Mashonaland). Mr. Boulenger records it from Coguno (Portuguese East Africa), and from M'seleni (Zululand).

8. *Pachydactylus bibroni* Smith.—A widely distributed species, occurring in South Angola, German East Africa, and in most parts of South Africa. There are numerous records from the Transvaal, from Rhodesia, from German South-West Africa, from British Bechuanaland, from Orange Free State, and from Little Namaqualand, but there are none from Natal and Zululand, though to the north of this area the species occurs in Mozambique and Eastern Transvaal, whilst in a southerly direction it is known from Grahamstown and Colesberg (Albany Museum), and from Cradock and Karroo Hills, Witmoss (Port Elizabeth Museum). The other Cape Province records known to me are Clanwilliam, Calvinia, and Worcester (South African Museum), Prince Albert Road (Roux), and Belmont and Kimberley (Kimberley Museum).

Pachydactylus laevigatus Fischer.—Described from Aus in Great Namaqualand, and recorded also from Rehoboth and Kalahari Desert.

Pachydactylus fasciatus Boul.—Described from Namaqualand.

Pachydactylus weberi Roux.—Described from Klipfontein in Little Namaqualand.

Pachydactylus capensis Smith.—This species occurs in the Transvaal, British Bechuanaland, Orange Free State, Zululand, Natal, and Cape Province, with the exception of the southern coastal districts. The Cape Province records are Kimberley (Miss Wilman), Little Namaqualand, Richmond District, Middelburg District, Hanover District, and the South African Museum has specimens from Matjesfontein, Beaufort West, and Burghersdorp. Miss Wilman has the species from Mafeking.

I have seen no records from Rhodesia, but Roux records it from Rikatla, in Mozambique. The Transvaal records are Pretoria District, Johannesburg, Waterberg District, and Krabbefontein (Zoutpansberg District).

Pachydactylus formosus Smith.—The South African Museum has typical specimens of this species from Ceres, Calvinia, Clanwilliam, and Concordia (Little Namaqualand), and the variety described under the name of *P. affinis* Boul., occurs in the Rustenburg District and Krabbefontein (Zoutpansberg District), in Mashonaland and Matoppo Hills (South Rhodesia).

Pachydactylus mariquensis Smith.—This species occurs in British Namaqualand, and in the neighbourhood of Grahamstown (Albany Museum). The Port Elizabeth Museum has a specimen somewhat aberrant from Blue Cliff, Uitenhage.

Pachydactylus mentomarginatus Smith.—The locality of this species is not known; it is probably western Cape Province.

Pachydactylus rugosus Smith.—This species is common in British Namaqualand.

Pachydactylus oshaughnessyi Boul.—This is a Nyassaland species recently recorded by Mr. Chubb from Queque and from Gatooma in Rhodesia.

Pachydactylus maculatus Gray.—Common in eastern Cape Province, being known from Pondoland, Port Elizabeth, Kingwilliamstown, Grahamstown, Kowie River, Bashee River, Natal, and Zululand (junction of the

two Umfolosi Rivers). It occurs also in the Karroo, the South African Museum having specimens from Graaff-Reinet, Hanover District, Steynsburg, Beaufort West, and a solitary record from British Namaqualand. The Albany Museum has this species from Jansenville and from Helpmakaar, near Ladysmith.

Pachydactylus ocellatus Cuv.—In South Africa this species seems to be concentrated in south-west Cape Province, though the British Museum Catalogue has records from Benguella (it was taken also by Dr. Anson in Angola), and Ascension Island, and it has been taken in Damaraland by Wahlberg. The Cape Province records are Matjesfontein and Malmesbury (Roux), and Cape Division, Touws River, Worcester, Robertson, Swellendam, Bredasdorp, Prince Albert Poort, and Calvinia (South African Museum.)

Pachydactylus punctatus Pet.—Described from Mozambique. We have a specimen from Selati (Zoutpansberg District).

9. *Colopus wahlbergi* Pet.—Only known from Damaraland.

10. *Rhoptropus afer* Pet.—Recorded from South Angola, Hereroland, and Damaraland.

Rhoptropus ocellatus Boul.—Described from Capetown, and recorded from Little Namaqualand (Roux).

Rhoptropus braconnierei Thom.—Only known from Lake N'gami.

11. *Elasmodactylus namaquensis* Sclat.—Described from British Namaqualand.

12. *Palmatogecko rangei* Anders.—Described from Luderitzbucht, German South-West Africa (Jahrb. Nassau, ver. Nat., Wiesbaden, 1908).

SCINCIDAE.

MABUIA.

1. Scales on the soles of the feet not * spinose; suboculars not or scarcely narrowed inferiorly. 2.

Scales on the soles of feet sharply keeled and spinose; the subdigital lamellae strongly keeled. 7.

2. A single subocular, more or less enlarged. 4.

Two labials (five and six) of about equal size may be termed suboculars. 3.

3. Subdigital lamellae smooth; dorsals tricarinate; forty-two to forty-six scales round the body. Olive-brown above, with small darker and lighter spots; a more or less distinct lighter dorso-lateral band, and a black white-edged spot in the axilla. *M. stangeri* Gray.

Subdigital lamellae smooth; dorsals, five to seven carinate; thirty scales round the body; fronto-nasal separated from the frontal. Olive-above, a light lateral streak extending from upper lip to groin, edged above by a black band, and below by a black line. *M. depressa* Pet.

4. Parietals forming a suture * behind the interparietal. 5.

Parietals completely separated by the interparietal. 6.

* This character not absolutely constant.

5. Snout short, obtuse; subdigital lamellae smooth; two or three long pointed ear lobules; twenty-eight to thirty-two scales round the body; fronto-nasal in contact with frontal. Olive above, often with dark-brown longitudinal streaks or series of spots; a dark-brown lateral band, edged inferiorly by a whitish streak, beginning on the upper lip and passing through the ear.

M. homalocephala Wieg.

Snout rather elongated; three to five short, obtusely pointed ear lobules; subdigital lamellae smooth (perhaps occasionally uncarinate); thirty-six to forty-four scales round the body. Either pale-brown or olive above, each scale with a paler spot, the tail being pale yellow; or dark-brown above, with three yellowish white bands, the tail being blue.

M. quinquetaeniata Licht.

6. Scales on the anterior border of ear not differentiated; subdigital lamellae keeled or almost smooth; twenty-eight to thirty-six scales round the body; dorsals three carinate. Olive or brown above, with transverse dark-brown spots or bands, and three light bands along the back; ventrally whitish; sometimes uniformly olive-brown above.

M. trivittata Cuv.

Similar to *homalocephala* in scutellation and habit; three short and rounded ear lobules; thirty-six scales round the body. Olive above, with five black dorsal lines with a series of yellow dots between them; a yellow band on each side, edged below by a broad black band; lower surface metallic greenish-yellow.

M. gruetzneri Pet.

Two or three long pointed ear lobules; subdigital lamellae smooth; thirty scales round the body; dorsals three to five carinate; prefrontals in contact. Dark, with light-brown longitudinal streaks corresponding to the series of scales.

M. peringueyi Boul.

Two or three large, projecting, obtusely pointed ear lobules; subdigital lamellae sharply uncarinate; dorsal scales feebly keeled. Olive above, with three yellowish-white dark-edged dorsal streaks, and a whitish dark-edged lateral band from upper lip to the groin.

M. occidentalis Pet.

7. The adpressed hind limb not reaching the axilla. 8.

Adpressed hind limb reaching the axilla or beyond. 9.

8. Thirty to thirty-four scales round the body; three to five short-pointed ear lobules; dorsals three carinate; subdigital lamellae three carinate; subocular inferiorly reduced but not much so, the lower labial border being at least half the total length of the scute. Olive or brownish above, often with small dark-brown spots, which may be arranged in longitudinal or occasionally transverse bands, sometimes with small pale spots, and occasionally with two or three thin pale dorsal bands or streaks; a sharply defined whitish lateral streak, starting on upper lip and passing through the ear, almost invariably present.

† *M. varia* Pet.

Thirty-two to forty scales round the body; dorsals mostly three carinate (some few may be five carinate); subdigital lamellae one to three carinate; two to four short subtriangular ear lobules; subocular not reaching the lip, or if so much narrowed inferiorly (more so than in *varia*); fronto-nasal broader than long. Usually dark-brown above, with a pale

* This character not absolutely constant.

† See note on the distribution of this species.

spot on each scale (the spots arranged in longitudinal lines), and conspicuous pale dorso-lateral bands; the head with dark-brown reticulations or spots, and the throat (rarely also the whole ventral surface of body), with brown spots or reticulations; often a darker brown band, starting from the eye on the temples and sides of the neck, sometimes continued along the body as a lateral band, and sometimes an ill-defined pale band in the neck; occasionally uniformly pale-brown dorsally and laterally, and sometimes with four or five dark longitudinal bands or streaks dorsally.

* *M. striata* Pet.

Thirty-six to thirty-eight scales round the body; subocular not reaching the lip; three small triangular ear lobules; dorsals five carinate; sub-digital lamellae three carinate.

Bronzy-green above, with irregularly scattered black dots, an indistinct light dorso-lateral band, no light band on the flanks.

† *M. chimbana* Boul.

9. Head and body very strongly depressed; thirty-four to thirty-eight scales round the body; subdigital lamellae three carinate; dorsals five carinate; subocular not reaching the lip; two or three very small ear lobules; fronto-nasal about as long as broad. Usually uniformly blackish above, and likewise also the ventral surface; in immature specimens pale ventrally, and dorsally brown, with six longitudinal black bands.

M. sulcata Pet.

Twenty-eight to thirty-two scales round the body; dorsals three carinate; subocular not reaching the lip; subdigital lamellae strongly uncarinate or almost three carinate; three or four long lanceolate ear lobules; toes very long. Dark transverse bars on the back; two light lateral bands, the lower commencing below the eye and passing through the ear; a yellowish vertebral band, often indistinct.

M. acutilabris Pet.

LYGOSOMA.

Limbs short and weak, pendactyl; body much elongated; lower eyelid scaly; supranasals present; prefrontals small; frontal about as long as the fronto-parietals and parietal together, but not broader than the supraocular region; scales smooth or more or less carinate dorsally. Brown or rufous above, uniform, or each scale with a blackish dot or streak; the sides sometimes darker, with whitish brown-edged ocelli.

Lygosoma sundevalli Smith.

ABLEPHARUS.

Interparietal shield small; a single fronto-parietal shield of large size; eye surrounded sometimes incompletely by a circle of granules more or less uniform in size; five fingers and toes. Brown or olive above, uniform or with black spots, forming longitudinal lines; a pale dorso-lateral streak; lateral surfaces dark.

Ablepharus wahlbergi Smith.

† See also note on *M. varia*.

* See note on distribution of this species.

ACONTIAS.

1. *Snout obtusely rounded, projecting*; fourteen to twenty scales round middle of body; three supraoculars.

(a) First supraocular nearly as large as or even a trifle larger than the two others together; a single very large preanal plate. Olive brown above, yellow below; or yellow or pale-brown above, each dorsal scale with a dark-brown spot, which may unite to form six or eight longitudinal bands. *A. meleagris* L.

(b) First supraocular appreciably larger than the two others together. Uniform blackish. *A. plumbeus* Bian.

2. *Snout cuneiform, much depressed, flat inferiorly, and strongly projecting*; fourteen scales round the body; two supraoculars, or sometimes only one. *A. lineatus* Pet.

(a) Whitish, with black lines following the longitudinal series of scales. *lineatus* S. str.

(b) Brown, with a purplish band across the hinder part of each dorsal scale. *Var. grayi* Boul.

SCELOTES.

The limbs with five digits; twenty-two scales round the body; lower eyelid with an undivided transparent disk; interparietal broader than the frontal. Olive-brown above, each scale anteriorly edged with greenish-white; lower surface greenish-yellow. *S. capensis* Smith.

Limbs with three digits; eighteen scales round the body; third finger much shorter than second. Silvery grey above, each scale darker in the centre; a whitish black-edged lateral band, commencing on the snout and passing over the supraoculars. * *S. tridactylus* Boul.

Twenty scales round the body; third finger equal to the second. Olive-green. paler beneath. Scales dotted with black at the base. * *S. caffer* Pet.

Fore limbs absent; hind limb with two minute-clawed digits, or occasionally with only one claw; supranasal in contact with the first labial; lower eyelid transparent; eighteen scales round the middle of the body. Pale-brown above, the scales speckled with black; usually a dark-brown streak on each side of head, passing through the eye and continued along the side of the body as two lines of brown dots. *S. bipes* L.

Hind limb a bud-like rudiment, without claw; twenty scales round the middle of the body; supranasal separated from the first labial by a post-nasal (see note); lower eyelid scaly. Pale-brown above and on the sides; each scale with a dark-brown dot; belly brownish-white, immaculate. * *S. guentheri* Boul.

No trace of limbs externally; supranasal in contact with the first labial; four supraoculars, the three anterior ones subequal and in contact with the frontal; tail slightly longer than the body. Pale-brown, each scale with a dark-brown dot, which is very small on the back, large on the belly, largest on the sides. *S. inornatus* Smith.

* See note.

Three supraoculars, the first being largest; body subquadrangular; the scales transversely elongated. Back intermediate between greenish-white and pale flesh-red, with two longitudinal lines of closely set brownish-red dots; sides brownish-red; under parts much paler.

S. bicolor Smith.

HERPETOSAURA.

Limbs present, each with five digits; twenty-two scales round the body. Head darker than the body, the middle portions of the scutes almost black; suture lines paler-brown; the body brown, with longitudinally arranged black spots, largest on the sides of the body and on the tail; ventrally also with small black spots.

H. mira Roux.

Limbs absent; four supraoculars, the three anterior ones subequal; six supraciliaries; twenty scales round the body; frontal about twice as long as fronto-nasal; tail shorter than the body. Silvery or light-brown above, the sides and lower surfaces dark-brown or blackish; sometimes pale ventrally, and the pale dorsal area may have a darker broad median band.

H. anguina Boul.

Limbs absent; three supraoculars; five supraciliaries; first supraocular considerably bigger than the second or the third; frontal a little longer than the fronto-nasal. Pale in colour, with two or four series of black dots along the back, and four to six on the sides, sometimes forming by fusion a dark lateral band.

H. arenicola Pet.

SEPSINA.

Feet with five digits; limbs small, the posterior one equal in length to the distance between the base of anterior limb and the gape of the mouth, the anterior limb equal in length to three-fourths of its distance from the ear opening. Light-brown above, with black spots along the series of scales, more distinct laterally; a pale dorso-lateral streak, commencing on the snout.

S. weberi Roux.

Feet with three digits; limbs very small, fore limb hardly one-third the length of the hind limb. Fawn-brown above; four rows of scales on each side, with a dark line in the centre, forming interrupted streaks.

M. grammica Cope.

MELANOSEPS.

Three supraoculars, first largest; first upper labial largest, third entering the orbit; twenty-two scales round the middle of the body; tail about one-fifth the total length. Blackish-brown above and below, the scales edged with lighter brown.

M. ater Pet.

TYPHLACONTIAS.

Supranasal and fronto-nasal transversely elongated; four upper labials, the third entering the eye; a loreal present, also two minute preoculars; two supraoculars; two small postoculars, and two small widely separated prefrontals; eighteen scales round the body. Brown above, with a darker mid-dorsal band; ventrally yellowish-brown.

T. gracilis Roux.

REMARKS ON SPECIFIC CHARACTERS OF CERTAIN SPECIES.

M. homalocephala Wieg.—The British Museum Catalogue description for this species gives the dorsals as tricarinate, and this is the case in the Port Elizabeth Museum specimens, but in the specimens of the Natal Government Museum from M'seleni, Zululand, they are very strongly five or even seven carinate.

In these same specimens the subocular is quite twice the size of either the fourth or fifth upper labials; the British Museum Catalogue description represents this condition as unusual. The separation of the prefrontals seems to be fairly constant; out of a very long series of specimens I have found only one exception. In one other case the prefrontals and the fronto-nasal had completely fused together. Another almost invariable character is the union of the parietals, but rarely this also fails. As regards the colour markings, a very constant and perhaps invariable character is afforded by the white lateral streak, which is very like that of *M. varia* Pet. The dark-brown lateral band is sometimes very broad and distinct, and at other times reduced and ill-defined.

M. depressa Pet.—In view of the great variation exhibited by *M. homalocephala* this species may prove to be synonymous with the latter; the only satisfactory feature of distinction is that of the suboculars, which certainly present some degree of variation in *homalocephala*. Judging from the author's figure the species agrees fairly well with the Zululand variety of *M. homalocephala*.

M. peringueyi Boul.—Out of six specimens examined one had the prefrontals separated, and in another specimen (juvenile) the parietals formed a suture in the mid-line.

M. trivittata Cuv.—The condition of the head scutes is highly variable. The supranasals seem to be invariably in contact. The prefrontals usually do not form a median suture, at any rate in Transvaal specimens. Very rarely the parietals form a short suture behind; there is usually a pair of nuchals, which may or may not meet in the mid-line, and occasionally are broken up into scales. The subocular may be scarcely any bigger than the other labials, or more often it may be nearly twice the size of any one of the others. The first loreal may or may not reach the first upper labial. The subdigital lamellae are sharply unicarinate in young and half-grown specimens, but only bluntly keeled in adults. The scales of the sole are spinose in young, but in adults are not so, or only in slight degree. Colour markings are pretty constant, and the exceptions are mostly old females, which in some cases have no markings dorsally other than a faint ill-defined pale mid-dorsal band. Occasionally, however, young or half-grown specimens have this plain coloration.

In some specimens which have the normal colour pattern there is a trace of a more ventral pale lateral line, beginning on the upper lip, passing through the ear, and going as far as the hind limb, being most distinct in the neck region. The dorso-lateral bands may start over the eyes or more posteriorly in the neck. The majority of our specimens have either thirty-four or thirty-two scales round the body; the adpressed limbs only just meet, or fail to do so. Our largest specimens reach a length of 292 mm,

M. occidentalis Pet.—Resembles *trivittata* in general habit, but differs in respect to the character of the ear lobules, and it has no dark cross bands or spots on the back.

M. gruetzneri Pet.—This species was described from the Transvaal in 1869, and so far as I know has not been taken again, with one possible exception. In Zool. Jahrb., 1907, p. 431, Dr. Jean Roux records the species from the Pretoria District (Coll. Dr. Breyer), and remarking that the specimens do not altogether agree with the description given in the British Museum Catalogue, he enumerates the characters of the species as exhibited by those specimens. But the combination of characters therein cited seems to me to differ in no essential respect from those of *trivittata*, a species which is subject to much variation in almost all the characters ordinarily employed in specific description. The Transvaal Museum has a very long series of *trivittata* mabuias, collected from various parts of the Transvaal and of South Africa, but I have found it quite impossible to split up into two species the collection of mabuias which have the three pale longitudinal bands, and the numerous dark-brown transverse bands of *M. trivittata*.

M. striata Pet.—The condition of the subocular varies considerably; often it may be completely cut off from the lip, and at other times it encroaches thereon so much that the labial margin of this scute is about half the total length of the scute. The reduction of the subocular is relatively greatest in the adults, and especially in very large specimens. In old specimens of this species the adpressed limbs scarcely meet. As a general rule the prefrontals are separated, but occasionally they form a suture in the mid-line. The parietals may or may not form a suture behind. This is the common domestic lizard of Pretoria, being abundant in the immediate neighbourhood of houses. The house form does not reach the large size of the same species on the veld.

M. sulcata Pet.—This species much resembles *M. striata*; the two species are to be distinguished by the characters of the hind limb, the fronto-nasal scute, and the carination of the dorsal scales. But in a young specimen of *sulcata* from Bechuanaland (Albany Museum), marked with the six dark longitudinal stripes dorsally, the dorsal scales are only tricarinate, and in juvenile examples the character of the elongation of the hind limb is unavailable. An adult specimen from Victoria West (presented to the Albany Museum by Mr. P. D. Morris) has its dorsal scales tricarinate throughout, and the adpressed hind-limb barely reaches the axil. According to Bro. J. H. Power the black individuals are male and the striped ones female.

M. quinquaeniata Licht.—In a large series of specimens the parietals form a suture behind the interparietal, and only in one case are they separated by a small scale. But the prefrontals may or may not form a suture. The subdigital lamellae are invariably smooth. Colour: in younger specimens, blackish-brown above, with three yellowish-white longitudinal bands, the lateral band starting from over the eye; tail bluish. The adults vary considerably. The females are uniformly brown or olive brown above, with a white spot near the apex of each scale, with

or without a diffused brick-red patch at the side of the neck; the tail pale-yellow. The males have much the same coloration as in the young, but in addition many of the darker dorsal scales have pale spots.

M. varia Pet.—This is one of our smallest species of mabuia, the total length (British Museum Catalogue) being 165 mm. It resembles *M. homalocephala* in appearance, but is at once distinguished by the character of the spinose soles and sub-digital lamellae. From *M. striata*, with which it may be easily confused, it is usually distinguishable by means of the character of the subocular, but when this fails recourse must be made to the colour marking, and the white sharply defined continuous lateral streak of *varia* seems to be very constant, excepting in the very young.

In a single adult specimen of *Mabuia varia*, kindly lent by Mr. Fitzsimons, of the Port Elizabeth Museum, the white lateral streak is altogether wanting, and dorsally the colour is uniformly brown, except for some few small black spots.

It is almost impossible in some cases to distinguish between the very young specimens of the two species, for the young of *varia* may or may not have the characteristic white line of the species, though there is always at least a trace of it in the neck region; and in the young the subocular reaches the extreme limit of reduction, thus bringing it within the range of *striata*.

Moreover, the young of *striata*, like that of *varia*, may have a whitish lateral streak in the neck region, and pale dorso-lateral bands or streaks on the body, but it usually has also dark-brown spots or reticulations on the head, a character which is only rarely present in the young of *varia*, though it may occur more frequently in adults; as a rule the white lateral streak of a young *striata* is not so sharply defined nor so white as that of *varia*, whilst the pale dorso-lateral streaks of *varia* are not so broad nor so conspicuous as those of *striata*. Other characters which may be employed in doubtful cases are: the ear lobules in *varia* are longer and more pointed than those of *striata*; in *varia* the dorsal body scales are not so much transversely elongated as in *striata*; in *striata* the dorsal scales of the tail are considerably elongated transversely at a point quite near the base of the tail, whereas in *varia* the transverse elongation of the caudal scales commences more posteriorly, and is not so pronounced as in *striata*.

Lygosoma sundevalli Smith.—All the specimens I have seen have had completely smooth dorsal scales, and the colour is light-brown dorsally, the scales darker at the sutures; ventrally uniformly yellowish-white, and the sides also are without spots.

The head scutes do not vary much. A specimen from Windhoek (German South-West Africa) has the fifth and sixth upper labials as suboculars, whereas more usually it is the fourth and fifth.

Ablepharus wahlbergi Smith.—In life the ventral surfaces are pink; sometimes there is a fairly conspicuous white lateral streak, commencing on the upper lip and passing through the ear.

The scutellation of the head varies somewhat in specimens from the same locality; for instance, the frontal may form a broad suture with the fronto-nasal, or they may be completely separated by the meeting of the prefrontals in the mid-line,

A. meleagris L., and *A. plumbeus* Bian.—These two species are very closely allied, and it is not possible to distinguish them simply on scutellation characters. In adult specimens of *plumbeus* the first supraocular is appreciably longer than the second and third together, but in younger individuals this may not be the case, whilst on the other hand it occasionally happens that specimens of *meleagris* have precisely the same relations of the supraoculars as in *plumbeus*.

I have not found any constant difference in the numbers of the scaling; the number of ventrals in each case is about 150 or 155. The two species are best distinguished by the colour and by the general build, *plumbeus* being relatively stouter and shorter than *meleagris*, as shown by the following measurements in inches, expressing the relationship of the greatest breadth to the total length.

A. meleagris : $\frac{1}{8} - 8\frac{1}{2}$; $\frac{5}{16} - 9\frac{1}{16}$; $\frac{7}{8} - 9\frac{3}{4}$; $\frac{17}{8} - 11\frac{3}{8}$; $\frac{15}{8} - 11\frac{1}{8}$.

A. plumbeus : $\frac{7}{16} - 8$; $\frac{15}{16} - 17\frac{1}{4}$.

Acontias lineatus Pet., and *A. grayi* Boul.—I think the latter species is merely a colour variety of *A. lineatus*, for the structural characters on which *A. grayi* were founded prove to be highly variable, and afford no sound basis for separation from *lineatus*.

The South African Museum has a long series of *A. lineatus*, and typically coloured specimens show the following characters: usually the frontal is equal in length to the fronto-nasal, and is a little longer than the interparietal; sometimes the frontal is longer than the fronto-nasal, and often it is much longer than the interparietal; rarely the interparietal is longer than the fronto-nasal, and in one case the frontal and interparietal were fused together. The interparietal may be longitudinally elongated, or it may be as broad as long, and there may be either one or two supraoculars.

Usually the head is fuscous laterally, but sometimes it is infuscated dorsally on every scute; the dark lines on the body may be very thin or they may be thick. One specimen which in respect to the head characters agrees precisely with the original description, is uniformly brown on the dorsal surface of the body, and yellowish-white laterally and ventrally. The head is fuscous laterally, but pale dorsally, as in typical specimens of *lineatus*. There are two specimens which agree more or less completely with the description of *A. grayi*. One is brown and the other blue-black, the colour in each case being more pronounced dorsally, and both have the frontal longer than either the fronto-nasal or the interparietal. One of these specimens came along with two of *A. lineatus* S. str., from O'grabis (Namaqualand), from the same collector (A. L. Streuss). In view of this fact, and more especially that but for the colour character the above-mentioned two specimens of *A. grayi* would fit well in a series *A. lineatus*, I believe that these specimens should be considered as colour varieties of *lineatus*.

Acontias meleagris L., and *A. lineatus* Pet.—The Albany Museum has a long series of lineated specimens of *Acontias meleagris*. In this species the largest specimens are uniformly coloured, and have eighteen scales round the body; the smaller and middle-sized examples have usually eight,

occasionally ten, and sometimes only six dark longitudinal stripes dorsally, and in all these lineated specimens of *meleagris* there are fourteen scales round the middle of the body, and sixteen round the anterior two-fifths of the body.

The eastern Cape Province specimens of *lineatus* resemble the young of *meleagris* in nearly every respect—elongation of snout, form of head scutes, and scaling of the body—but differ in that there are only two (instead of three) supraoculars, and the dark lines are of almost uniform width, whereas in *meleagris* the innermost pair is broadest (broader than the pale interspace, which is not ordinarily the case in *lineatus*), and there is a successive diminution of width to the outermost pair.

In the collection of the Port Elizabeth Museum there are four specimens of *lineatus*, of which one is of normal coloration, but the other three which are more juvenile, are quite white, with no colour markings whatever. As in *meleagris* the frontal is much longer than the fronto-nasal or the interparietal, which latter scute is small; the frontal and fronto-nasal together are about equal to the rostral, and the mental projects back beyond the rostral; there are fourteen scales round the middle of the body, and sixteen in the first third of the total length; the smallest specimen is only four and a half inches long.

In all these specimens the snout is less projecting than in the more typical form of *lineatus* as found in western Cape Province, and it is just possible that they are merely the young of lineated *meleagris*, but I prefer to regard them as *lineatus*, for it seems to me that the character of the number of supraoculars is more reliable than the form of the snout. However, a lineated specimen of *meleagris* from Alicedale (Albany Museum) has only two supraoculars on the left side, and three on the right, and a Grahamstown specimen has the same abnormality. Our smallest specimen of *meleagris* is not lineated, and the length is only three and a quarter inches. From the same locality (Grahamstown), and sent to us at the same time, we have a lineated specimen eight inches long.

Scelotes.—I have not seen sufficient material of this genus to justify a revision of the specific characters, though doubtlessly this is much to be desired, as a number of the South African species were described from solitary specimens.

The key is drawn up almost entirely from the British Museum Catalogue.

S. bicolor Sm. ought to be rediscovered, as apparently the type and only known specimen is lost. It may even be a species of *Herpetosaura*, though this is not very probable, for *Herpetosaura* belongs to the eastern portion of the sub-continent.

S. inornatus Smith.—This species has a strong superficial resemblance to *Herpetosaura anguina*. They are to be distinguished by means of the generic character (palatine bones), by the colour, and perhaps by means of the ratio of the length of the body to that of the tail.

The description of the British Museum Catalogue cites: "Frontal not twice as long as the fronto-nasal", but in the specimen belonging to the Natal Government Museum the frontal is more than twice as long as the fronto-nasal.

S. caffer Pet., and *S. tridactylus* Boul.—I suspect that these two species will prove to be the same. In the collection of the South African Museum there are several specimens belonging to one or other of the two species. Two specimens agree entirely in coloration and other characters with *C. tridactylus*, but one of them has eighteen scales round the body, and the other, the larger specimen, has twenty scales.

Another specimen, exactly similar in the scutellation of the head, has twenty scales round the body, and all the scales are dotted with black at the base.

In each case the second finger is the longest, but in the last-mentioned specimen it only very slightly exceeds the third finger, and in the two former cases it may be stated as second finger slightly exceeding the third.

These several specimens appear to combine together the ascribed characteristic features of the two species.

S. guentheri Boul.—Of this species I have seen two specimens, one from Umfolosi, Zululand, and the other from Natal (Natal Government Museum). They differ from the type in the following respects: There is no postnasal, the supranasal being in contact with the first labial; the rudimentary hind limbs are devoid of claws, and the colour is laterally dark-brown, but brown dorsally and ventrally, each scale with a dark centre.

So in respect to the absence of a postnasal, the development of the hind limb, and the colour, these specimens approach *S. bipes* L., but they differ in the head scaling and in the snout. On the other hand they agree very well with *S. inornatus* but for the hind limb rudiment. According to the figures of the British Museum Catalogue *inornatus* has a pair of obliquely elongated temporal scales immediately posterior to each parietal, whilst *guentheri* has three temporals on either side, and they are scarcely larger than the ordinary dorsal scales; but our two specimens of *guentheri* agree with *inornatus* in this respect also. If this species in question really is *guentheri*—and it was identified as such by Mr. Boulenger in Ann. Natal Government Museum, Vol. 1, Part 3—the validity of *guentheri* is questionable, for the only recognizable difference from *inornatus* is that *guentheri* has a bud-like rudiment of a hind limb, varying in the degree of its development, whilst *inornatus* has no such rudiment.

The two specimens of *guentheri* have ninety-eight and one hundred ventral scales respectively; our single example of *inornatus* has ninety-five.

Herpetosaura anguina Boul.—There is a specimen in the South African Museum which is labelled the co-type of this species, and whilst agreeing fairly well with the description and figure given in the British Museum Catalogue, it differs appreciably in respect to the relative size and shape of the interparietal scute; this scute is longer than the frontal, and is acutely pointed posteriorly, whereas the figure given in the British Museum Catalogue represents the interparietal as being rather shorter than the frontal, and having a curved, almost semicircular, posterior margin. In a small series of specimens from Dumbrody (Uitenhage), the same condition obtains as in the co-type; this is also the case with the specimens of the Port Elizabeth Museum.

Another discrepancy in the above-mentioned figure is that two labials are suboculars, whereas in all the specimens I have seen only one labial enters the eye, and this agrees with the actual description of the species.

One specimen in the Port Elizabeth Museum collection is anomalous in possessing a pair of fronto-parietals, which are, however, widely separated; judging from this specimen it appears probable that the frontal of a normal *Herpetosaura* is formed by fusion of the fronto-parietals with the frontal proper.

DISTRIBUTION OF THE SPECIES.

Mabuia stangeri Gray.—A West African species, extending southwards into Damaraland.

Mabuia depressa Pet.—Described from Tette, Mozambique.

Mabuia homalocephala Wieg.—This species is recorded by Dr. Jean Roux from Rikatla (Mozambique). The Natal Government Museum has specimens from Indukuduku and M'seleni (Zululand); Mr. Pym has taken it at Kingwilliamstown; and the South African Museum has records from O'okiep (Namaqualand), from the Cape Division, from Knysna, and from Natal. Smith collected this species (*Euprepes smithii*) in "stony arid districts to the north-east of the Cape Colony." There are no records from the Transvaal, nor from the Orange Free State and central districts of the Cape Province.

Mabuia peringueyi Boul. (Ann. Mag. Nat. Hist., 1888, 6, 2, 139.)—The South African Museum has specimens from Damaraland and from O'okiep, Namaqualand.

Mabuia trivittata Cuv.—This is probably the commonest skink in South Africa. It is abundant in the Transvaal (Pretoria, Witwatersrand, Middelburg, Zoutpansberg, and Lydenburg Districts), Orange Free State, and Cape Province, at any rate as far east as East London (Transvaal Museum). There is no record north of the Limpopo, and none from Natal or Zululand. Miss Wilman has this species from Mochudi, and it occurs in Lesser Namaqualand and in Damaraland.

Mabuia occidentalis Pet.—This species occurs in South Angola, where, according to Bocage, it occupies the littoral zone. It is found in Hereroland, Damaraland, and Lesser Namaqualand. Dr. Jean Roux records it from Matjesfontein, Cape Province, and from the Rustenburg District of the Transvaal.

Mabuia guetzeri Pet.—Recorded in the British Museum Catalogue from Gerlachshoop, which is in the Middelburg District of the Transvaal. Dr. Jean Roux records it from the Pretoria District (see previous note).

Mabuia quinquetaeniata Licht.—This blue-tailed skink is a tropical species occurring in German East Africa and in Angola. Bocage states that it is found only in the littoral and intermediate zones of Angola, and this is probably the case also in South Africa.

It extends southwards in an easterly direction as far as the Transvaal and Zululand. Werner records it from Grahamstown, Cape Province, but I have seen no specimen from Cape Province, and neither specimen nor record

from German South-West Africa or Orange Free State. The most westerly record for South Africa is Shoshong, in Bechuanaland (Bocage). In the Transvaal it occurs in the Zoutpansberg and Barberton Districts.

Mabuia varia Pet.—Also a tropical species common in Angola and German East Africa. It occurs in every part of South Africa, with the possible exception of the south-west districts of Cape Province, though Smith's distribution for this species is the "whole of Southern Africa, but not so abundant within the boundaries of Cape Colony as beyond it".

I have seen no specimens nor certain records from the south-west districts. It is known from Lesser Namaqualand, from the Richmond district, and from Kingwilliamstown. (Pym). The Albany Museum has a specimen from Steytlerville.

Mabuia chimbana Boul.—A tropical species occurring in German East Africa and in south Angola, where, according to Bocage it lives on the high plateau and middle zones. I think this species does not occur in South Africa, but I include it on the authority of Sclater's list. According to Tornier (Zool. Jahrb., 1902, p. 586) it is merely a form of *M. striata*.

Mabuia striata Pet.—A tropical species occurring in Angola and German East Africa, whence it is diffused throughout South Africa, with the exception of the southern part of Cape Province. Dr. Jean Roux records it from Lesser Namaqualand, and the Kimberley Museum has the species from Belmont and from Kimberley. Smith's specimens came from the north-eastern districts of Cape Province.

Mabuia sulcata Pet.—This species is found on the high plateau and middle zone of south Angola. Fischer records it from Great Namaqualand, and Boettger from Neu Barmen, Hereroland. The South African Museum has specimens from Lesser Namaqualand, from the Prince Albert Division, the Cape Division, and from Matjesfontein, Cape Province. The Albany Museum has it from Jansenville and from Victoria West (Mr. P. D. Morris); Mr. Boulenger records it from the Richmond district, Cape Colony, and in the British Museum Catalogue the Karroo is given as locality. Bocage records it from Shoshong (Bechuanaland), and the Kimberley Museum has the species from Kimberley.

Mabuia acutilabris Pet.—This species occurs in the Congo and in Angola. It extends into Damaraland and Lesser Namaqualand.

Lygosoma sundevalli Smith.—A tropical species, occurring in Zanzibar and Uganda, and in Angola. According to Smith it occurs "in the country to the eastward of Cape Colony". In the British Museum Catalogue it is recorded from Natal and Mozambique. The Transvaal Museum has a specimen from Bandolierkop (Zoutpansberg District), from Hectorspruit (Barberton District), and I have taken it at Wonderboom, near Pretoria. The South African Museum has a specimen from Salisbury (Mashonaland), and Mr. Chubb records it from Bulawayo. We have it also from Windhoek (German South-West Africa), the South African Museum has a specimen from Damaraland, and the Albany Museum has the species from Serowe, Bechuanaland.

Ablepharus wahlbergi Smith.—A tropical species occurring in East Africa, Congo, and Angola. Bocage states that in Angola this species

occurs on the high plateau, and does not descend to the coastal regions. Smith recorded it from "the country to the eastward of Cape Colony". It is found in Zululand, Natal (Ladysmith and Durban), and in the Transvaal (Pretoria, Johannesburg, Warmbaths, Louws Creek, and Waterval Onder). I know of no records from any other part of South Africa.

Acontias meleagris Linn.—A species of wide distribution in South Africa, being recorded from Damaraland, Little Namaqualand, Cape Province, Transvaal, and Mashonaland. Roux records it also from Rikatla (Mozambique). The Cape Province records include all the coastal districts, the South African Museum having specimens from Umtata and Transkei, the most easterly records for the Cape Province with which I am acquainted, and in the same collections there are specimens from some of the interior districts, viz., Bedford, Worcester, and Robertson Divisions. The Transvaal Museum has specimens from Ventersdorp (Potchefstroom District), and from Irene (Pretoria District). The Albany Museum has this species from Palapye Road, Kalahari.

Acontias plumbeus Bianc.—This species occurs in Mozambique, Zululand, Transvaal, and probably eastern Cape Province. Roux records it from Shilouvane (Zoutpansberg District), and we have specimens from Hectorspruit, Barberton, and Louws Creek (Barberton District), and from Mbabane (Swaziland). The South African Museum has an immature specimen from East London, which I refer to this species. It appears to be confined to the coastal and low veld districts.

Acontias lineatus Pet.—This species is common in British Namaqualand and other western districts of Cape Province. Roux records it from Matjesfontein (Worcester district), and the British Museum Catalogue records a specimen from the Karroo. Of the eastern variety the Port Elizabeth Museum has a specimen from Port Elizabeth, and the Albany Museum has a number of specimens from the neighbourhood of Grahamstown. According to Matschie the species occurs at Haenertsburg (Zoutpansberg District), but this is the only Transvaal record known to me. Boettger has recorded this species from Angra Pequena and Hantam (Great Namaqualand).

Scelotes capensis Smith.—The locality given by Smith is the western coast of South Africa. Fischer records the species from Great Namaqualand.

Scelotes tridactylus Boul.—The locality of the original description is simply Cape of Good Hope. The South African Museum has specimens provisionally referred to this species from Bechuanaland, British Namaqualand, and Dunbrody (Uitenhage).

Scelotes caffer Pet.—Described from Kafiraria. Perhaps some or all of the records ascribed to tridactylus more correctly belong to this species. Smith says: "Most parts of southern Africa; found under stones or in loose soil near the roots of shrubs."

Scelotes bipes Lin.—Recorded by Mr. Boulenger from the neighbourhood of Capetown. The South African Museum has specimens from the Clanwilliam, Calvinia, and Cape Divisions, from Robben and Dassen Islands, and a colour variety from Delagoa Bay. The Natal Government

Museum has this species from Indukuduku (Zululand). Bocage records the species from Linokana (Marico District, Transvaal), but I suspect this record to be incorrect.

Scelotes guentheri Boul.—The locality of the type specimen is Port Natal. The Natal Government Museum has the species from Ubombo and Umfolosi (Zululand), and from Drakensberg (Natal), at an altitude of 6000 feet.

Scelotes inornatus Smith.—According to the describer, "arid situations in the interior of southern Africa". The British Museum Catalogue has a record from Port Natal, and the Natal Government Museum has the species from Kosi Bay (Zululand).

Scelotes bicolor Smith.—The only specimen on record was taken by the describer under a large stone on the side of a rocky ravine in Little Namaqualand.

Herpetosaura mira Roux.—Collected by Dr. Breyer in the Transvaal (Pretoria or Rustenburg District). (Zool. Jahrb., 1907, p. 435.)

Herpetosaura anquina Boul.—Described from the neighbourhood of Port Elizabeth. The Transvaal Museum has specimens from Dunbrody (Uitenhage), and there is a record from the Peddie coast in the South African Museum.

Herpetosaura arenicola Pet.—Described from Mozambique. Boulenger records it from Coguno (Portuguese East Africa), and from Delagoa Bay, and the Natal Government Museum has a series of specimens from M'seleni (Zululand).

Sepsina weberi Roux.—Described from Little Namaqualand (Steinkopf). (Zool. Jahrb., 1907, p. 437.)

Sepsina grammica Cope.—The locality of the describer is indefinite: south-west coast of Africa.

Typhlacontias gracilis Roux.—A species recently described from a single specimen taken in the Zambezi District (Rev. Suisse de Zool., 1907, p. 83).

Melanoseps ater Pet.—Recorded from the Zambezi River. It is known also from German East Africa (Tornier.)

GERRHOSAURIDAE.

GERRHOSAURUS.

Thirty-two to thirty-four transverse series of scales dorsally.

Fourteen to twenty longitudinal series of scales dorsally; ventrals in ten longitudinal series; tympanic shield narrow; prefrontals forming a long median suture.

(a) Fulvous-brown above.

G. major A. Dum. (S. str.)

(b) Pale brown above, with black spots, which become confluent posteriorly.

Var. grandis Boul.

Over fifty transverse series of scales dorsally.

Twenty-eight to thirty longitudinal series of scales dorsally; fourteen to sixteen longitudinal series of scales ventrally; dorsal shields three to

five carinate; tympanic shield large, crescentic, or triangular. Blackish-brown above, each scale with a small yellow spot or short streak; a yellowish dorso-lateral band sometimes present. *G. validus* Smith.

Twenty-two to twenty-four longitudinal series of scales dorsally; ten longitudinal series of scales ventrally; dorsal scales unicarinate; fronto-nasal in contact with rostral and frontal; tympanic shield large, crescentic. Brownish above, with squarish light spots; a light dark-edged dorso-lateral streak. *G. typicus* Smith.

Similar to *typicus*, but differing thus: only eight longitudinal series of scales ventrally; fronto-nasal not meeting rostral nor the frontal; no pale dorso-lateral streak. *G. auritus* Btgr.

Twenty to twenty-eight longitudinal series of scales dorsally; ventrals in eight longitudinal series. Tympanic shield narrow, usually band-like, not much enlarged. Brown or olive above, with a pale dark-edged dorso-lateral streak. *G. flavigularis* Wieg.

TETRADACTYLUS.

Limbs short, but well developed and pendactyl; ventrals in eight longitudinal series; nine to twelve femoral pores. Olive or reddish-brown above, the sides usually darker. *T. seps* L.

Limbs very short, tetradactyl; ventrals in six longitudinal series; four or five femoral pores. Olive above, with dark-brown longitudinal streaks. *T. tetradactylus* Lacep.

Limbs anteriorly two-fingered and clawed; posteriorly undivided and without claws; ventrals in eight longitudinal series; two femoral pores. Brown above; a thin dark line from the eye to the fore limb, and another dark line starting from the shoulder and going the whole length of the body and tail. *T. breyeri* Roux.

Limbs minute, undivided; ventrals in six longitudinal series; two or three femoral pores. Olive above, with dark-brown longitudinal lines. *T. africanus* Gray.

CORDYLOSAURUS.

Dorsal scales three to five carinate, in fifteen longitudinal and fifty-two to fifty-five transverse series; ventrals in eight longitudinal series. Pale-olive above, with three broad dark-brown longitudinal bands, which include a white dorso-lateral band on each side. *C. trivittatus* Pet.

Similar, but the dorsal scales not distinctly keeled; middle of the back yellowish-brown, more laterally checkered white and blackish-brown, the sides of the body dark-brown. *C. subtessellatus* Smith.

NOTES ON THE SPECIFIC CHARACTERS OF CERTAIN SPECIES.

Gerrhosaurus flavigularis Wieg.—In view of the great variability of the principal character on which the distinction between the two species was based, Tornier considers that *G. flavigularis* and *G. nigrolineatus* Hall are the same. Our series of *G. flavigularis* shows much variation in the relationship of the fronto-nasal to the neighbouring scutes; it is always shut off from the rostral, but it may form a broad or only a very narrow

suture with the frontal; or not infrequently the prefrontals may form a broad median suture. The tympanic shield also shows considerable variation, and occasionally may be relatively broad, but I have not seen any specimen where the breadth was as much as half the height. The colour marking is fairly constant, but in the largest specimens the pale dorso-lateral streak may be indistinct or absent. The breeding male has a bright brick-red coloration on either side of the cheeks and neck, extending along the lips and on to the mental scute.

Gerrhosaurus auritus Btgr.—I have not seen this species, but am inclined to suspect its validity, for the author distinguished it from *nigrolineatus* by the following characters: In *auritus* the tympanic shield is enlarged, being half as broad as high, which is not normally the case in *nigrolineatus*; in *auritus* there are eight temporal shields, whereas in Congo specimens of *nigrolineatus* there are eleven temporal shields; in *auritus* the scales of the outermost row of belly shields are as broad as those of the inner rows. Now the first-mentioned character is variable in *flavigularis*, the tympanic shield sometimes becoming almost as broad as is described for *auritus*; the second character is of no value, for our series of *flavigularis* shows variation from five to ten temporal scutes; the third character is also very variable in *flavigularis*, and although the outermost ventral scales are generally narrower than those of the inner series, this is less pronouncedly the case in larger specimens.

Gerrhosaurus validus Smith.—The degree of enlargement of the tympanic scale is highly variable, the free part sometimes forming an acute angle, and at other times being obtuse or broadly rounded at the apex; in the young it is narrow and bandlike. The anterior nasals form only a short median suture, and in one case (out of six) the fronto-nasal just meets the rostral. The young have many pale spots dorsally, whilst laterally there are a number of vertical pale streaks.

Gerrhosaurus major A. Dum. (synonym *G. grandis* Boul.)—The species from Ubombo (Zululand), described as *G. grandis* Boul. (Annals Natal Government Museum, Vol. 1, Part 3, 1908), occurs also in the Barberton District. We have two specimens, one from Kaapmuiden and the other from Malalane (W. Bolton). The description of the species, based on a solitary specimen, agrees entirely with that of *major* (a Zanzibar species), except as follows: Only fourteen longitudinal rows of scales dorsally, and with a cylindrical tail (but in the figure which accompanies the description sixteen longitudinal rows are represented, and apparently also the tail is slightly compressed laterally in its posterior half), whereas *major* is described as having eighteen or twenty rows of scales dorsally, and the tail slightly compressed in the posterior half. There is also a difference of coloration. Now our specimens, which agree precisely in coloration and general habitus with the figure and description of *grandis*, have the following characters: Eighteen longitudinal rows of scales dorsally in the larger specimen, and sixteen rows in the smaller specimen; in both specimens the tail is laterally compressed in the posterior half; in the younger specimen anteriorly also. It is evident therefore that our Barberton specimens agree exactly with *G. major* in the structural

characters, differing only in respect to coloration, and accordingly I refer these and the Ubombo specimen to that species, for the present distinguishing the South African form under the varietal name *grandis*, as there appears to be a definite colour difference.

Tetradactylus africanus Gray.—In this species the anterior limbs are very minute, sometimes indeed being altogether absent.

Tetradactylus breyeri Roux.—This is allied to *T. africanus*, but is apparently distinct. The distinguishing characters in addition to those given in the key are: Dorsals in twelve longitudinal and seventy transverse rows, whereas *T. africanus* is described as having fourteen longitudinal and sixty to sixty-two transverse rows.

Cordylosaurus trivittatus Pet.—In this species the degree of carination of the dorsal scales varies, sometimes being very pronounced and at other times not so.

Cordylosaurus subtessellatus Smith.—The South African Museum has a specimen without history which I refer to this species. In coloration it is uniformly brown all over. It is probable that this species will eventually prove to be a variety of *C. trivittatus*.

DISTRIBUTION.

Gerrhosaurus validus Smith.—This species was recorded by the describer from near the sources of the Orange River. We have it from Woodbush, and Chubb records it from the Matoppo Hills and Empandeni in Rhodesia. The British Museum Catalogue has a record from Tette (Mozambique), and Bocage states that it occurs in south Angola.

Gerrhosaurus major Dum.—The typical form is known from Zanzibar and German East Africa. The variety *grandis* Boul. was taken at Ubombo (Zululand), and we have it from Kaapmuiden and Malalane, Barberton District (W. Bolton).

Gerrhosaurus flavigularis Wieg.—A very widely distributed species, being known from every part of South Africa with the exception of Great Namaqualand, Little Namaqualand, and western Cape Province north of the coastal districts. The South African Museum has specimens from Rondebosch (Cape Division), Robertson, and Knysna; and in the eastern districts of Cape Province the species is abundant. Northwards the species extends through Central and East Africa as far as Sennar, and westward to Angola, the Congo, and Gaboon.

Gerrhosaurus typicus Smith.—Smith took his specimen on the sandy plains immediately to the south of the mouth of the Orange River. Roux also records the species from Little Namaqualand.

Gerrhosaurus auritus Boett.—Collected at Ondonga, in Ovampoland.

Tetradactylus breyeri Roux.—Collected by Dr. Breyer in the Transvaal. I have seen a specimen of this species from Umvoti, Natal (South African Museum), and the Transvaal Museum has it from Weenen County, Natal (Rev. N. Roberts).

Tetradactylus seps L.—This species has been several times recorded from Table Mountain and other localities in the Cape Division, and the

South African Museum has a specimen from Paarl; Roux records it from Knysna, and Smith stated that the species was "common in the grassy flats of the eastern districts of Cape Colony", but I think that it does not extend much beyond Knysna in an easterly direction, as the species has not been taken by the museums of eastern Cape Province.

Tetradactylus tetradactylus Lacep.—The South African Museum has records from the Cape Division, from Worcester, and from Robertson. Bocage has recorded it from Linokana (Transvaal), but I believe this to be an error (especially as he recorded *Scelotes bipes*, another Cape species, from the same locality), as no other worker has recorded this species from any other locality than south-west Cape Province.

Tetradactylus africanus Gray.—Bocage records this species from South Angola; the South African Museum has specimens from Namaqualand and from Natal, and the Natal Government Museum has it from Melmoth (Zululand).

Cordylosaurus trivittatus Pet.—The British Museum Catalogue cites Benguela, Damaraland, and Great Namaqualand; Bocage has it from south Angola; the South African Museum has specimens from Little Namaqualand, Clanwilliam, and Calvinia.

Cordylosaurus subtessellatus Smith.—Taken by the describer in Great Namaqualand.

LACERTIDAE.

EREMIAS.

VENTRALS IN SIX LONGITUDINAL SERIES; TWO LARGE SUPRAOCULARS, COMPLETELY SURROUNDED BY GRANULES.

Lower eyelid scaly; occipital absent or minute; a curved bandlike scale on the supero-anterior border of the ear. Liver-brown above (blackish in the young), with yellow spots and three longitudinal stripes, sometimes broken up into spots, the median stripe bifurcating on the nape. *E. lugubris* Smith.

VENTRALS IN TEN TO SIXTEEN LONGITUDINAL SERIES; SUPRAOCULARS USUALLY IN CONTACT WITH THE FRONTAL.

Lower eyelid with two large transparent scales; distance between loreal and first supraocular equal to or exceeding the length of the latter shield.

Ventrals in ten longitudinal series; dorsal scales smooth. Yellowish above, with five longitudinal dark-brown bands, the outer passing through the ear. *E. undata* Smith.

Ventrals in twelve or fourteen longitudinal series; dorsal scales keeled only on the hinder part of the body; scales on upper surface of tibia much larger than the dorsals; distance of loreal from first supraocular a little greater than length of the latter shield. Grey or brown above, with black and white ocelli, and sometimes a dark dorso-lateral band.

E. pulchella Gray.

Distinct from pulchella in that the dorsal scales are keeled from between

the shoulders; scales on upper surface of tibia scarcely larger than the posterior dorsals; distance of loreal from first supraocular usually much greater than length of latter shield. Supraoculars sometimes bordered entirely or nearly so with granules. Brownish above, often with four or six (with commencement of a seventh as a median dorsal streak) longitudinal blackish bands, each enclosing a series of pale spots; sometimes with irregularly arranged ocelli. *E. lineocellata* D.B.

Lower eyelid granular, or with a number of more or less transparent scales.

(1) *A curved bandlike scale on the supero-anterior border of the ear.* Ventrals in ten or twelve longitudinal series; lower eyelid transparent, with four or five plates of unequal size; distance between loreal and first supraocular equal to the length of the latter. Uniformly grey above, with some pale spots on the sides of the body. *E. inornata* Roux.

Ventrals in twelve longitudinal series; lower eyelid with a semi-transparent disk, formed of several scales; distance between loreal and first supraocular equal to or slightly less than the length of latter. Pale buff above, with four white streaks enclosed by five longitudinal blackish bands, the median one bifurcate on the nape; sometimes a series of whitish dots on the black bands. *E. namaquensis* D.B.

(2) *No bandlike scale on the supero-anterior border of ear.* Lower eyelid entirely granular; three large supraoculars; ventrals in twelve longitudinal series; occipital scale usually absent. Grey, with small black spots dorsally. *E. suborbitalis* Pet.

Lower eyelid with a semi-transparent disk formed of several small scales; ventrals in fourteen to sixteen longitudinal series; two or three small scales or granules between loreal and first supraocular; nasals feebly swollen; fronto-nasal separated from rostral; sixty-five to seventy-five scales across the middle of the back. Grey or brown above, with small or large black spots, sometimes forming three or four bands on the body, five on the nape, the bands extending on the head shields; round light spots along the black bands or among the black spots.

E. burchelli D.B.

Differing from *burchelli* thus: four or five granules between the loreal and the first supraocular; fronto-nasal usually in contact with rostral; the nasals swollen; about fifty to fifty-five scales across the middle of the back. Coppery-brown above, with black reticulations sometimes confined to the sides; sometimes a light or dark vertebral band bifurcating on the nape, and one or two light lateral bands; occasionally general colour is blackish, with pale bands and spots.

E. capensis Smith.

NUCRAS.

Addressed limbs overlapping; ventrals in twenty-seven to thirty-three transverse series; forty to sixty-two dorsal scales across the middle of the body; a few granules between the supraoculars and supraciliaries. Upper parts brownish, with or without dark and light longitudinal lines; the sides usually dark-brown, with white vertical bars or pale round spots arranged in longitudinal rows and occasionally forming continuous lines; lower surfaces white, immaculate. *N. tessellata* Smith.

Adressed limbs separated or only just meeting (in young overlapping); ventrals in thirty-three to thirty-seven transverse series; thirty-five to forty-three dorsal scales across the middle of the body; often no granules between the supraoculars and supracliarics, but sometimes several. Grey or brownish above, with large black spots, sometimes confluent into irregular transverse bands on the back; the black spots with round white ones in the centre; lips with vertical black bars; lower surfaces white, usually black-spotted in the adult. *N. delalandi* M. Edw.

TROPIDOSAURA.

Dorsal scales large, imbricate, strongly keeled; first supraocular largest, separated from loreal by a very small shield; nostril between two or three nasals; usually two superposed postnasals. Olive-brown above, with two dark and two light longitudinal streaks on each side; a more or less distinct dark vertebral streak. *T. montana* Gray.

ICHNOTROPIS.

Frontonasal longitudinally divided; subocular not reaching the lip; occipital wanting or small; forty-six to forty-eight scales round middle of body. Copper-brown above, with two or three longitudinal series of small black and white spots on each side; the white spots sometimes confluent into longitudinal streaks. *I. squamulosa* Pet.

Fronto-nasal single; subocular bordering the lip; an occipital present; thirty-five to forty scales round the middle of the body. Yellow or reddish-brown above, with three longitudinal series of black spots on each side, more or less confluent into longitudinal bands, separated by pale streaks; the lower black band extending along the upper lip, and the conspicuous lateral pale streak passing through the ear. *I. capensis* Smith.

Differing from *capensis* in possessing longer limbs and shorter body, the adressed hind limb reaching between the eye and ear; foot much longer than the head. Pale grey-brown above, tinged with orange laterally; a black streak along each side, starting from tip of snout and passing through the eye; another black streak along the upper lip, reaching only as far as the shoulder, and separated from the upper one by a white streak. *I. longipes* Boul.

SCAPTEIRA.

(A) *Snout conical; ventral plates of body arranged in straight longitudinal series.*

(1) *A bandlike supratemporal shield; lower nasal forming a suture with the rostral.* Fronto-nasal (sometimes two) separated from rostral by the nasals; forty-two to sixty scales across middle of body dorsally; dorsal scales keeled in front, and posteriorly strongly so.

Yellowish-brown or olive above, with longitudinal series of whitish black-edged ocelli or black spots, usually confluent into four longitudinal bands; young with light and dark bands, the vertebral light band bifurcating on the nape; a series of round light spots along the dark bands.

S. knoxi M. Ed.

Fronto-nasal in contact with rostral; dorsal scales smooth, granular, obtusely keeled posteriorly, seventy to seventy-five across the body

dorsally. Young are dark-brown, with five wide longitudinal white bands, the median bifurcating on the nape; adults with four longitudinal series of irregular black spots or reticulations, sometimes confluent into irregular bands, or indistinctly marked as in the young. *S. depressa* Merr.

(2) *Lower nasal separated from the rostral; no bandlike supratemporal shield.* Fronto-nasal separated from the rostral; three large supra-oculars; dorsal scales smooth between the shoulders, but obtusely keeled on the back; digits keeled inferiorly and strongly fringed laterally. Sandy-grey above, with blackish reticulations. *S. serripes* Pet.

(B) *Snout wedge-shaped; ventral plates forming oblique longitudinal series; lower nasal forming a suture with the rostral.*

Fronto-nasal not meeting the rostral; a lateral series of enlarged keeled scales on posterior part of the back forming a narrow band. Brown or orange above, a light dorso-lateral line and a broad dark-brown or red lateral band; the sides and limbs with white spots.

S. clenodactyla Smith.

Fronto-nasal forming a suture with the rostral; no lateral series of enlarged scales. Grey or sand-coloured above, with darker network enclosing round lighter spots.

S. cuneirostris Strauch.

NOTES ON CERTAIN SPECIES.

Eremias namaquensis and *inornata*.—The South African Museum has specimens from Steinkopf and Naroep which agree with the description of *inornata* (Zool. Jahrb., 1907, 427). It is closely allied to *namaquensis* and may be only a variety of that species.

A point of distinction between the two species, according to the description, is furnished by the number of ventral scales in a transverse row, but out of three specimens of *inornata* two had ten ventral scales and one specimen had twelve, whilst on the other hand, though *namaquensis* has usually twelve, occasionally specimens appear which have only ten, though in other respects they are perfectly typical. However, in the series which I examined, the following differences obtained: in *inornata* the eye scales are of large size, fewer in number, and more transparent than in *namaquensis*, where these scales can be described as only semi-transparent; the scales on the tibia are larger and more strongly keeled than in *namaquensis*; the first supraocular is relatively longer in *namaquensis*.

The specimens of *namaquensis* are very constant in coloration; I have only seen one variation, and this had only one pair of dark streaks dorsally.

Eremias pulchella and *E. lineocellata*.—It is often a matter of no small difficulty to decide between these closely allied species when the material comes from a locality remote from the home of the typical form. In typical specimens of *pulchella*, as found in Little Namaqualand, the scales on the anterior half of the dorsal surface show no trace of keeling, and posteriorly they are only obtusely keeled. The colour marking is either a black dorso-lateral band or four rows of ocelli or small spots dorsally. In other parts of Cape Province the dorsal scales of *pulchella* may be much more pronouncedly keeled, and in a Tulbagh Road specimen (South African

Museum), which I refer to this species, the dorsal scales are obtusely keeled almost up to the shoulders.

On the other hand *lineocellata*, especially in southern localities, may vary in the direction of *pulchella*. But again, I have seen one specimen of *Eremias*, probably referable to *lineocellata*—identity not quite certain, as the head was badly damaged—which had all the dorsal scales strongly keeled, commencing from the hinder part of the head. This specimen came from Mochudi (Miss Wilman). Besides the above-mentioned character, the proportions of the supraoculars provide a good but not absolute method of distinguishing the two species. To the specific distinctions cited in the key may be added: anterior supraocular longer than, equal to, or more than half the length of the second supraocular in *E. pulchella*, but not much more than half the length of the second supraocular, or at any rate not equalling the second in *E. lineocellata*. But very rarely there appears a specimen of *pulchella* where the supraoculars are entirely surrounded by granules, and I have seen an example of this species which had the first supraocular only about half the length of the second. In *E. lineocellata* there is much variation in the number and size of the granules between the anterior supraocular and the loreal.

Eremias burchelli and *E. capensis*.—These closely related species are easily distinguished by the character of the granules between the loreal and the first supraocular, and I believe by the number of scales in a transverse line dorsally; in *E. capensis* the fronto-nasal usually forms a suture with the rostral, but occasionally these two scutes are just separated. One specimen of *E. burchelli* has four white lines dorsally, the two median ones not fusing; another specimen also in the South African Museum has black reticulations, almost confluent into broad dorsal bands. In the collection of the Albany Museum there are three immature specimens of an *Eremias* which should probably be referred to *burchelli*. They agree together in many essential respects, and were taken by the same collector (B. J. Glanville), so that I believe they belong to one and the same species. Nevertheless, they exhibit certain differences which, if constant in a series of adult specimens, would be regarded as of specific importance. In one case the fronto-nasal meets the rostral, and the prefrontals form a median suture; in another case the rostral and fronto-nasal do not meet, and the prefrontals are separated by an azygos scale, and in the third case the fronto-nasal is cut off from the rostral, but forms a suture with the frontal. In the first case the condition of the scales between the loreal and the first supraocular is much as in *burchelli*, in the second case it more closely resembles *capensis*, and in the third case there is what might be described as an intermediate condition. The number of scales across the body dorsally is sixty to sixty-three, whereas according to the descriptions in the British Museum Catalogue *burchelli* has seventy to seventy-five and *capensis* has fifty to fifty-five. However, in a typical specimen of *burchelli* from Graaff-Reinet (Port Elizabeth Museum) there were sixty-five scales across the dorsal surface of the body. In the largest of the three specimens above mentioned the body is elongated, and the adpressed hind limb does not reach quite as far as the shoulder. The colour markings vary, and the only feature common to all three is a well-defined pale lateral streak,

commencing on the upper lip and passing through the ear. The Albany Museum has five specimens of *E. capensis* from Victoria West, presented by Mr. P. D. Morris. One of them has the supraoculars completely separated from the frontal by granules, and this specimen, which is of large size, has 57 scales across the body dorsally; the others have the dorsal scales varying in number from 52 to 54, and the supraoculars are in contact with the frontal. The colour characters of this series are: One large individual is light brown above with indefinite darker reticulations; the aberrant specimen first mentioned is brown with more pronounced dark reticulations, and has a median pale streak bifurcating at a little distance behind the shoulder, another thinner pale streak somewhat broken on the body starts from below the eye and goes to the tail, and a whitish band, starting from the upper lip, passes across the ear and ends at the base of the hind limb; the three half-grown specimens are blackish above with pale spots and whitish streaks, two of them being striped very much as in the last-mentioned individual, though in one case the lower lateral band is not marked out, whilst in the third example, instead of the bifurcating median band, there are two pale bands which converge a little posteriorly but do not fuse, and the lower lateral band is absent; in each of the four striped individuals there is a short anterior median pale streak starting from the occiput and ending in front of the bifurcation of the larger median band (just behind the shoulder in the aberrant half-grown specimen).

Nucras.—The two species of this genus are easily distinguishable in full-grown specimens by means of the relative proportions of body and limbs; in *tessellata* the body is relatively shorter, and the limbs, especially the posterior pair, longer than in *delalandi*; moreover, the characteristic colour markings of the two species are fairly constant. In young and half-grown specimens the determinations of the species may be a matter of some difficulty, for the body and limb proportions are more nearly alike, and the other structural characters may be of an intermediate nature, so that eventually the decision has to be based largely on the colour marking. In the specimens I have examined the scales of a transverse dorsal line were in *tessellata* usually more than fifty, but I have seen specimens with only forty-four, and the British Museum Catalogue cites forty to forty-eight. In *delalandi* they were usually from thirty-six to thirty-nine, but several specimens had as many as forty-three or even forty-four. As regards the character of the granules between the supraoculars and supraciliaries, they appear to be always present in *tessellata*, and in *delalandi* they are often absent, but not infrequently individuals appear which in other respects are typically *delalandi*, but are precisely like *tessellata* in respect to this character. The colour marking of *tessellata* is fairly constant, even in the young or half-grown specimens, but I am inclined to believe that this species may rarely be ocellated, somewhat as in *delalandi*, but this is on the evidence of a single specimen, which I refer with some slight doubt to this species. The specimen in question is one of two individuals which were collected by Mr. F. A. Pym, at Modder River, near Kimberley. One of these is *tessellata* of normal appearance, but the other has moderate-sized black spots—not ocelli—dorsally, arranged much as in *delalandi*. This latter specimen has thirty-two transverse

rows of ventrals, and it agrees with the other specimen in having forty-four scales across the body dorsally, and there is a row of granules between the supraoculars and supraciliaries. The adpressed limbs just meet, and the hind limbs are large and long; the fourth supraocular is broken up into granules, which sometimes occurs in *tessellata*, but I have not met with it in *delalandi*, and there is an indication of the commencement of the same process in the other specimen; on the other hand it is in general habit somewhat different from the other specimen, and from ordinary *tessellata*, being appreciably stouter in head and body.

Miss Wilman has taken several specimens of *tessellata* in the Kimberley neighbourhood. They are normal in colour marking, and the dorsal scales number forty-six and forty-nine respectively. Another very doubtful specimen of this genus came from Shilouwane (Zoutpansberg District). In general build it resembles *delalandi*, but differs in that the body is relatively shorter, so that the limbs just overlap. In colour it shows a resemblance to *delalandi*, but nevertheless it is quite distinct from the normal forms of that species; it is ocellated dorsally, the ocelli having white centre and black margins, but they are arranged, though not very definitely, in longitudinal lines, the ocelli themselves being longitudinally elongated anteriorly. There is a thin pale black-margined mid-dorsal line, interrupted in places, and the belly is uniformly white. There are only thirty-one transverse rows of ventrals, and there are forty-four scales across the middle of the back, whereas four specimens, of same size, and coming from adjacent localities in the Zoutpansberg District (viz., Haenertsburg and Great Letaba River), are typically *delalandi*, and have the ventral rows varying in number from thirty-three to thirty-five, and the scales of a transverse row dorsally, ranging from thirty-seven to forty. The tail is thick as in *delalandi*, but the foot is elongated, much as in *tessellata*, and there is a couple of granules between the supraoculars and supraciliaries. On the whole I think this should be regarded as an immature form of *delalandi*, a conclusion which is based upon the general habitus of the specimen.

A juvenile specimen of a *Nucras* from Grahamstown presents an unusual type of colour marking; the dorsal surface is blackish, with eight (parts of ten) thin yellow longitudinal lines, and there are no spots or transverse markings at the sides. There are thirty transverse rows of scales ventrally, and forty-three scales in a transverse row dorsally. There is on each side a row of four granules between the supraoculars and the supraciliaries. The adpressed limbs overlap, but not greatly so. This specimen I refer to *tessellata*.

It is evident from the above that the two species are very closely related, and in some cases the distinctive characters do not appear until the individual is fully adult.

Ichnotropis capensis Smith.—This lizard is common on the veld in the Pretoria neighbourhood. It exhibits a very considerable seasonable variation in colour, the sombre attire of the winter season being in marked contrast to the brilliant hues of breeding specimens. The life colours of a breeding pair, taken on 14th October, 1909, are as follows: The male reddish-brown above; a series of ill-defined and almost confluent black spots dorso-laterally; more laterally a broad black band, starting from

the end of the snout and passing through the eye above the ear and going down the tail; more ventrally another prominent black band, arising from the tip of the snout and passing along the upper lip, and to the shoulder, whence the band is continued along the flanks to the thighs as a brilliant vermilion-red streak; these three bands enclose two pale streaks, the more dorsal one being white, and the lower one bright yellow in the head and neck region; ventrally white, except in the lower lip, gular region, and neck, where there is a decided yellow tinge. The female is similar, but not so brightly coloured, the yellow colour being absent, and the black and red bands less brilliant than in the male. Apart from the colour the sexes can be distinguished by the fact that the base of the tail is swollen in the male, and the preanal scutes are fewer but much larger than those of the female.

DISTRIBUTION OF THE SPECIES.

Eremias undata Smith.—This species was recorded by Smith from the arid sandy flats between Capetown and Little Namaqualand. Boulenger records it from the Richmond District of Cape Colony, and Fischer from Great Namaqualand.

Eremias inornata Roux.—The locality of the discoverer is Orange River, Lesser Namaqualand, and the South African Museum has specimens from Steinkopf and Naroop.

Eremias lugubris Smith.—According to Smith this occurs "in the arid districts immediately beyond the northern boundary of Cape Colony". It occurs in the Kalahari, Hereroland, and, according to Bocage, in south Angola. Tornier records it with a query from German East Africa. The Albany Museum has specimens from Palapye Road. In South Africa this species appears to be confined to the western parts.

Eremias suborbitalis Pet.—This was described from Damaraland and Great Namaqualand, and recently Roux records it from Lesser Namaqualand and from Matjesfontein (Cape Province.)

Eremias namaquensis D.B.—Described from Great Namaqualand, and since recorded from south Angola, from Lesser Namaqualand, from Modder River (Bocage), from Beaufort West (South African Museum), and from Kaffraria (British Museum Catalogue).

Eremias pulchella Gray.—Recorded by Boettger from Damaraland and Great Namaqualand, by Smith from the west coast of Cape Province near the Orange River, and known from Lesser Namaqualand, the Karroo, and Richmond district of Cape Province.

The South African Museum has specimens from Clanwilliam Division, from Paarl, Tulbagh, Ceres, Matjesfontein, Prince Albert Division, Middelburg, and Aliwal North. The Kimberley Museum has this species from Victoria West, and the Albany Museum has it from Colesberg.

Eremias lineocellata D.B.—We have specimens of this species from the following localities in the Transvaal: Pretoria, Irene, Pietersburg, and Krabbefontein (Zoutpansberg District), and it is recorded by Boettger from the Middelburg District. The South African Museum has a specimen from Natal, but the species probably has a very limited distribution in

that Province, as this is the only known record. Miss Wilman has taken this species in the Kimberley neighbourhood and at Mochudi, and we have a specimen from Hanover (Cape Province). Also we have this species from Brandfort (Orange Free State) (A. K. Haagner), the only known record from that Province.

Eremias burchelli D.B.—The locality given by Smith is Karroo Flats, on the south-west coast of Africa, particularly Little Namaqualand, towards Orange River. Roux records it from Matjesfontein, the South African Museum has specimens from Clanwilliam and the Middelburg districts, the Port Elizabeth Museum has a record from Graaff-Reinet, the British Museum Catalogue cites Kaffraria, and Bocage records it from Modder River.

Eremias capensis Smith.—Smith's record was: "arid Karroo flats within Cape Colony, and of districts immediately beyond". Fischer states Great Namaqualand, Roux records it from Lesser Namaqualand, the South African Museum has a specimen from Matjesfontein, the Port Elizabeth Museum has it from Graaff-Reinet, and Miss Wilman has it from Victoria West.

Nucras tessellata Smith.—Of wide distribution in tropical and South Africa, being recorded by Bocage from the high plateau and intermediary zone of south Angola, by Boulenger from the south coast of Lake Victoria Nyanza, by Tornier from German East Africa, and by Peters from Mozambique. It extends southwards through Namaqualand, Rhodesia, Transvaal, Orange Free State, Zululand, and Natal, into Cape Province, but appears to be absent from the southern coastal districts.

According to Smith it is to be found throughout the districts on the western coast of South Africa, particularly Little Namaqualand. Boulenger records it from the Richmond district, the South African Museum has specimens from the Clanwilliam, Calvinia, Worcester, and Robertson districts, the Albany Museum has it from the Grahamstown neighbourhood and from Victoria West (P. D. Morris), and the Port Elizabeth Museum from Graaff-Reinet.

Nucras dclalandi M. Edw.—This species is common in the eastern coastal districts of Cape Province, Port Elizabeth, Uitenhage, East London, Grahamstown, and Kingwilliamstown. It occurs also in Pondoland, Natal, Zululand, and the Transvaal. There are no records from the south-western districts of Cape Province, nor from the interior districts, excepting Burghersdorp (South African Museum). In the British Museum Catalogue there is a record from Damaraland, but this is the only record from that district known to me. There are no records of this species north of the Limpopo, with the exception of one from Kakoma (German East Africa) (Tornier), but as the solitary specimen on which the record was based is juvenile it may perhaps belong to the other species.

Tropidosaura montana Gray.—The distribution cited by Smith is "eastern Cape Colony and Kaffraria". We have the species from Table Mountain (Mr. L. Taylor), and Mr. Pym has taken it in Pirie Forest, Kingwilliamstown.

Ichnotropis capensis Smith.—Recorded from north and south Angola, common in the Kalahari Desert and in certain districts of the Transvaal

(Pretoria, Zoutpansberg, and Rustenburg Districts), and recorded from M'seleni (Zululand). The South African Museum has a specimen from Delagoa Bay and one from the Matoppo Hills (Southern Rhodesia). The Kimberley Museum has it from Mochudi, where also occurs *I. squamulosa*.

Ichnotropis longipes Boul.—The species was described from a Mashonaland specimen (P.Z.S., 1902, 2, 17). Mr. Chubb's records from Bulawayo and Khami River are based on incorrect identifications.

Ichnotropis squamulosa Pet.—This is an East African species, being recorded from German East Africa and from Nyassaland. It is known from several localities in Rhodesia (Hunyain River and Southern Rhodesia), from the Zoutpansberg, Barberton, and Rustenburg Districts of the Transvaal, and we have it also from Schweizer Reneke (Bloemhof District). The South African Museum has a specimen from Delagoa Bay, and the Natal Government Museum records it from Kosi Bay (Zululand). Boettger records it from Rehoboth (German South-West Africa), Smith took it in the Kalahari Desert, and Miss Wilman has the species from Mochudi.

Scapteira knoxi, M. Edw.—According to Smith this inhabits "arid Karroo country within the boundaries of Cape Colony". It has been several times recorded from British Namaqualand. Roux has it from Matjesfontein, and the South African Museum has specimens from the Cape Flats, Calvinia, Clanwilliam, Hanover, and Middelburg Divisions of Cape Province. The British Museum Catalogue cites also Johanna, one of the Comoro Islands.

Scapteira depressa Merr.—Recorded from several localities (Angra Pequena, Aus), in Great Namaqualand, and the South African Museum has specimens from Port Nolloth and Steinkopf in Lesser Namaqualand.

Scapteira serripes Pet.—Recorded from Damaraland and Benguellá. The South African Museum has specimens from Lesser Namaqualand.

Scapteira clenodactyla Smith.—This species is known from Great Namaqualand, Little Namaqualand, and Beaufort West.

Scapteira cuneirostris Strauch.—Only known from Damaraland.

