

DESCRIPTIONS OF FIVE NEW LIZARDS FROM THE TRANSVAAL AND SOUTHERN RHODESIA.

By

V. FITZSIMONS, M.Sc.

(With six Text-figures).

Among recent additions to the Transvaal Museum collection are five presumably new forms of Lizards, which are described hereunder:—

Page.

GECKONIDAE.

<i>Pachydactylus capensis levyi</i> subsp. nov.	273
<i>Pachydactylus capensis vansoni</i> subsp. nov.	274

ZONURIDAE.

<i>Zonurus laevigatus</i> sp. nov.	276
---	-----

AMPHISBAENIDAE.

<i>Monopeltis granti transvaalensis</i> subsp. nov.	277
--	-----

LACERTIDAE.

<i>Lacerta rupicola</i> sp. nov.	278
---	-----

Pachydactylus capensis levyi subsp. nov.

Type: A half-grown ♂ (T.M. No. 14421) from Wankie, Southern Rhodesia, collected by B. Levy, January, 1931.

Description: Head oviform, a little broader than neck. Snout obtuse, distinctly longer than diameter of orbit. Ear opening small. Limbs moderate; digits only slightly expanded distally, with 4 to 5 lamellae inferiorly. Body depressed. Tail rounded and tapering to a point, about three-quarters length from snout to vent. Snout and upper parts of the head with large smooth flattened sub-hexagonal scales, subequal to enlarged tubercles on back. Naso-rostrals in contact. Rostral much broader than deep, not entering nostril. First labial separated from nostril. Eight to nine upper labials. Seven to eight lower labials. Symphysial about one and one-third times as long as broad; strongly tapering, with posterior width less than half anterior; slightly longer and distinctly wider than adjoining labials. Back granular, with irregularly arranged enlarged keeled subconical tubercles. Outer surfaces of limbs with subequal smooth imbricate scales and no tubercles; a median row of transversely enlarged scales under the digits. Gular scales

minute and granular; a few enlarged chin-shields adjoining labials 3-5; granules on throat enlarging gradually over neck and chest to the smooth sub-imbricate scales on belly, which are a little smaller than those on snout. Tail covered with strongly enlarged subequal imbricate scales, whose posterior borders are faintly serrated below.

Colour: Head greyish brown, encircled by a black band from nostril, through eye and round occiput and bordered behind by a pale whitish band arising at angle of jaw. Body black with two wide whitish transverse bands, narrowing considerably on sides; below greyish white with infusions of greyish brown along sides. Tail with four whitish cross-bands, which are less than half width of black interspaces, last two only, completely encircling tail.

Dimensions:—

Type ♂ (T.M. No. 14421).

Total length	...	47.7 mm.
Snout to vent	...	27.5 mm.
Tail	...	20.2 mm.

Remarks: In addition to the type there is in the Transvaal Museum collection a juvenile topotype collected by Mr. B. Levy, during March, 1932. This specimen, though somewhat bleached, agrees closely with the above description in all scale characters.

Discussion: The above form is closely allied to *P. o'shaughnessyi*, as described by Boulenger,* but may be readily distinguished therefrom on the following: Snout longer; scales on snout and head, smooth and flattened; symphyial larger, much wider than adjoining labials, distinctly narrowed posteriorly; outer surfaces of femur and tibia without tubercles; distinctive and well-defined colour markings. *Pachydactylus o'shaughnessyi* (non Boulenger) Hewitt,† recorded from Southern Rhodesia, I presume to be synonymous with *P. capensis levyi*.

Pachydactylus capensis vansoni subsp. nov.

Type: An adult ♂ (T.M. No. 14179) collected on the Zoutpansberg mountains between Entabeni and Lake Fundusi, by V. FitzSimons during November, 1931. Also two half-grown paratypes, T.M. Nos. 14249 and 14250) were collected near Entabeni at the same time by G. van Son.

Description: Head oviform, distinct from neck, almost as broad as long (.8 times); snout slightly longer than diameter of eye; ear opening small, oval and oblique; head and body depressed. Limbs moderate, digits short, dilated distally, with four lamellae inferiorly. Scales on head slightly convex, those on snout much enlarged; a few scattered enlarged tubercles on occiput, distinctly smaller than scales on snout. Naso-rostrals in contact. First labial well separated from nostril. Rostral much broader than deep. Seven upper and lower labials. Anterior labials adjoining mental much wider than latter, which is distinctly longer than broad, narrowing posteriorly to about half its anterior width.

* 1885, Cat. Liz. Brit. Mus., I, p. 204, pl. XVI, fig. 3.
 † 1910, Ann. Tvl. Mus., II, p. 80, and 1927, Rec. Alb. Mus., III, p. 399.

Upper parts with small granular scales, intermixed with large strongly keeled (almost trihedral) tubercles which are larger and more densely aggregated dorso-laterally. Below, scales on throat minute, becoming larger posteriorly over chest and abdomen; latter scales smooth, flattened, subimbricate and much larger than scales on snout. Tail round and tapering, segmented; covered above with small granular scales, alternating with transverse rows of large pointed keeled scales along distal edge of each segment; below, scales smooth, imbricate and much enlarged in median ventral line, being at least two to three times as large as abdominal scales.

Colour: Light greyish brown above, with dark brown irregularly shaped spots and blotches scattered over back; a distinct whitish streak from angle of jaws, completely encircling occiput posteriorly; traces of narrow whitish transverse streaks across anterior part of back, linked up by a median streak from back of occiput. Lips white; each labial with a dark brown spot. Below greyish white.

The more juvenile paratypes are brown above, with a series of 7-8 narrow black-edged whitish transverse bands on back between occiput and root of tail; similar bands on tail encircling latter completely on proximal half. Irregular whitish vermiculations on occiput; a whitish black-edged band across snout, just anterior to orbits.

Remarks: In the type the tail is regenerated, but from the paratypes, in both of which the tail is complete, we find it subequal to or slightly less than length from snout to vent. Except in the conspicuous colour markings, which evidently fade out in the adult, the paratypes agree closely with the type description.

Discussion: Allied to *P. c. formosus* and *P. c. affinis* with both of which it has characters in common. From the former it may be distinguished by the greater aggregation dorso-laterally of the enlarged strongly keeled dorsal scales, on the greater convexity of the head scales, the united naso-rostrals and the colour marking. From *affinis* by the smaller number of upper labials, the scaling on the back and tail, and colour markings.

Habits: Found under stones lying on the sunny slopes near the top of the Zoutpansberg Mountains at an altitude of about 6,000 feet above sea level. The two small specimens from Entabeni were each caught with a pair of eggs adhering to the anal region. These eggs averaged: Long diameter, 7 mm.; short diameter, 5.5 mm.

<i>Dimensions:—</i>	<i>Type.</i>	<i>Paratypes.</i>	
	♀ (No. 14179).	♀ (No. 14249).	♀ (No. 14250).
Total length	—	64.5 mm.	73.0 mm.
Snout—vent	48.0 mm.	33.0 mm.	37.0 mm.
*Length of head	12.2 mm.	8.3 mm.	9.5 mm.
Width of head	10.0 mm.	6.6 mm.	7.8 mm.
Tail	—	31.5 mm.	36.0 mm.

* Measured from ear opening to tip of snout.

Zonurus laevigatus sp. nov.

(Figs. 1-2.)

Type: An adult ♀ (T.M. No. 14229) collected at Entabeni, Zoutpansberg, by G. van Son, during November, 1931. A second specimen (T.M. 14230) was collected at the same time.

Description: Head triangular, distinctly longer than broad; upper head shields only slightly rugose, chiefly along median parietal region. Fronto-nasal as broad as long, in good contact with rostral and separating nasals; latter slightly swollen and in contact with rostral, fronto-nasal, loreal and first labial. Nostril pierced near infero-posterior margin of nasal. Prefrontals in contact, suture about half length of frontonasal. Frontal polygonal, slightly longer than broad. Anterior parietals distinctly broader than long and much smaller than posterior pair, which are almost square in shape. Interparietal present, pointed anteriorly, and rounded posteriorly, completely separating anterior parietals. Six occipital spines, obtusely pointed, inner pair slightly smaller than two outer pairs. Temporals large, rugose and keeled, posteriormost row with keels produced into low spines. Four supra-oculars, first longest, second widest. Orbits very strongly raised, forming a pronounced depression of frontal area of head. Four to five supra-ciliaries, first as long as or longer than second and third together. Lower eyelid scaly and opaque. A loreal and a preocular, latter almost twice as large as former. Three suborbitals, second bordering lip. Six upper labials, four anterior to second subocular, last two strongly keeled. Rostral six-sided, twice as long as deep. Mental large, five-sided. Six lower labials, fifth and sixth keeled, latter strongly so. A row of five chin-shields adjoining labials, first four large and smooth, fifth small and keeled. A single row of small irregular scales bordering chin-shields one to three. Gular scales small and slightly elongate anteriorly, becoming very small and almost granular posteriorly, before passing to the large flattened subimbricate scales on chest. Habit slender, with spinosity of scales much reduced. Dorsal scales large (except the two median longitudinal rows) and obtusely keeled above, more strongly keeled and spinose on flanks; in about 30 transverse rows of 18 scales each. Ventrals quadrangular and smooth, as broad as or broader than long in middle line, longer than broad towards the sides; two outer rows keeled; in 28 transverse rows of 14 scales each. A pair of large pre-anal scales, bordered in front and on sides by smaller irregular scales. Ten femoral pores on each side. Tail slightly shorter than head and body, with alternate whorls of small feebly keeled scales and large elongate more strongly keeled scales, which become spinose on sides.

Colour: Above, dark brown, with a few small scattered yellowish spots. Below slightly paler; throat with slight infuscations of darker.

Dimensions:—

	<i>Type</i> ♀ (T.M. No. 14229).	<i>Paratype</i> ♀ (No. 14230).
Total length	226.0 mm.	206.0 mm.
Head length	30.6 mm.	28.8 mm.
Head breadth	23.6 mm.	23.0 mm.
Head depth	12.2 mm.	12.0 mm.
Body	83.4 mm.	77.2 mm.
Forelimb	35.0 mm.	32.6 mm.
Hindlimb	48.0 mm.	45.3 mm.
Tail	110.0 mm.	100.0 mm.

Discussion: The above new species although obviously belonging to the mountain-frequenting group of Zonures (comprising *Z. warreni*, *Z. breyeri*, *Z. barbertonensis*, *Z. vandami*, etc.) may be readily distinguished therefrom on its much slighter build and pronounced reduction of the rugosity and spinosity of the scales generally. It appears to be most closely related to *Z. barbertonensis*, from which, however, it differs so markedly, that I consider it warrants distinct specific standing. It is of interest to note in relation to the localized distribution of these mountain Zonures, that a totally different form (*Z. barbertonensis depressus*) occurs on the same range of mountains at Newgate, only forty miles west of Entabeni, the type locality of *Z. laevigatus*.

Habits: Found under loose stones and in rock crevices on the mountain slopes near Entabeni at an altitude of between five and six thousand feet.

***Monopeltis granti transvaalensis* subsp. nov.**

(Figs. 3-5.)

Type: An adult specimen (T.M. 14354) collected at "Hope", between Nylstroom and Vaalwater, Waterberg District, northern Transvaal, by J. A. Venter, 5th February, 1932. In addition there is an adult paratype (T.M. 14353).

Description: A single large shield covering head, one and two-thirds as long as broad, with a cleft on each side in front of ocular, converging inwards and forwards, their length about equal to the distance between their anterior ends. Snout obtusely pointed, with a sharp horizontal edge and a distinct upward tilt. Rostral triangular, over twice as broad as long. Nasals in contact above the rostral. Ocular small, with eye faintly distinguishable near supero-posterior border. A pair of bandlike parietals (occipitals?) bordering head shield behind. Three upper labials, first smallest, second over twice as long as first, third largest. A moderate temporal in contact with large head shield, ocular, third labial and parietal (occipital?). Three lower labials, first two small, third very large. Symphysial four-sided and distinctly larger than adjacent labials: followed by a larger median heptagonal post-mental, one and a half times as broad as long, in contact with first and second labials and separating behind two pairs of smaller chin-shields, of which the inner are triangular, outer oblong and in contact with second and third labials; behind again is a transverse row of eight to nine smaller elongate scales. Six very large elongate pectoral shields; median pair largest, widening posteriorly and forming an angle anteriorly, longer than distance from tip of snout to posterior edge of parietals (as long as distance from snout to hind edge of first scale row on neck); outer pectorals by far the shortest, about three-fifths length of median pair. Four rows of scales on neck, posteriormost largest, each row separated by granules.

Three hundred and twenty-eight annuli on body and 26 on tail: an annulus about middle of body contains 32 segments, made up of 18

dorsal and 14 ventral segments; dorsal segments much longer than broad, narrower above than on sides; ventral segments much broader, median pair over one and a half times as broad as long; segments on tail larger than on body, two medial dorsal and ventral series much wider than rest; a total of 18 segments round middle of tail; end of tail abruptly truncate and terminating in a callous pad. Six pre-anal plates, inner pair largest, outer pair very small. No preanal pores.

Colour: Uniform vinaceous pink; large head shield dirty yellowish.

Dimensions:—

	Type	Paratype
	(T.M. No. 14354).	(T.M. No. 14353).
Snout to vent	455.0 mm.	452.0 mm.
Tail	50.0 mm.	51.0 mm.
Body diameter	9.0 mm.	8.2 mm.

Remarks: In the paratype we find 328 annuli on body and 29 on tail. In all other respects there is complete agreement with the type.

Discussion: *M. transvaalensis* shows affinities to both *M. welwitschii* Boc. from Angola in the west and *M. granti* Boul. from Beira in the East, and may to some extent be regarded as a connecting link between the two forms. It is, however, much more closely allied to the latter of which it has been made a subspecies, distinguishable on the following characters: snout more obtuse and up-turned; clefts on large head shield longer and directed more towards centre; parietals (occipitals?) wider and shorter; large median post-mental separating the two pairs of following chin-shields; median pectoral shields distinctly longer than head; greater number of annuli over body.

Lacerta rupicola sp. nov.

(Fig. 6.)

Type: A half-grown ♀ (T.M. No. 13989) from Lake Fundusi, Zoutpansberg, northern Transvaal, collected by the University of the Witwatersrand Expedition to Lake Fundusi, 11th July, 1931.

Description: Head and body very strongly depressed. Head moderate, about $4\frac{1}{3}$ times into length from snout to vent; $1\frac{1}{2}$ times as long as broad; depth equals distance from anterior corner of eye to tip of snout, or from hind edge of eye to upper corner of tympanum; occipital region flat; snout pointed, slightly longer than post-ocular part of head. Neck slightly narrower than head. Adpressed hind limb reaches armpit. Foot distinctly longer than head. Tail cylindrical, about $1\frac{2}{5}$ times as long as head and body.

Nostril pierced between the nasal, two post-nasals and the first labial. Nasals forming a suture behind rostral. Fronto-nasal much broader than long. Frontal slightly less than its distance from end of snout, a little wider in front than behind, about $1\frac{2}{5}$ as long as broad, posterior width slightly less than width of major supraoculars. Parietals about $1\frac{1}{2}$ times as long as broad, outer border straight, forming good contact in front with fourth supraocular, separated from post-oculars. Four supraoculars, first smallest and separated from frontal;

of the two major supraoculars, the first is the longer. Six supraciliaries, suture between first and second slightly oblique. A series of 8-10 granules separating supraciliaries and major supraoculars. A parietal foramen present in anterior half of interparietal. Occipital in contact with interparietal, separating parietals; slightly wider posteriorly than interparietal and a little over half as long.

Rostral not entering nostril. Two post-nasals, a single loreal and preocular. Five labials anterior to subocular, whose lower border is slightly shorter than upper. Lower eyelid with vertically enlarged quadrangular scales in the middle. Temple covered with granular scales, smaller than dorsals. An elongate tympanic shield, set at an angle of 45° to the perpendicular axis. An elongate upper temporal followed by three smaller scales. No masseteric shield. Two to three postoculars. Ear opening large. No pterygoid teeth.

Twenty-five gular scales in a straight line between the symphysis of the chin-shields and the median collar-plate; scales anterior to gular fold, which is well-marked, elongate and set slightly at an angle to median line; posterior to gular fold scales smaller and more or less rounded, enlarging again towards collar, which is composed of seven large plates, with posterior edge serrated. Dorsal scales hexagonal, keeled and subimbricate; lateral scales smaller and feebly keeled diagonally; thirty-six scales across middle of body. Ventral plates large, overlapping and more or less detached from each other along posterior border; in 6 longitudinal and 26 transverse series; second longitudinal series from median line twice as broad as long, much broader than the others; an outermost row of much smaller plates intermediate between true laterals and ventrals. A large pre-anal plate, encircled in front and on sides by a single row of smaller plates.

Scales on upper surface tibia strongly keeled, much smaller than dorsals. A series of transversely enlarged scales along anterior surface of thigh, continuing on under side of tibia. Antero-superior surface of forelimb also with a series of strongly enlarged scales.

Fifteen femoral pores. Twenty-six lamellar scales under fourth toe.

Caudal scales enlarged and elongate, narrowing distally; dorsally, scales strongly keeled, each keel ending in an obtuse point on posterior margin of scale; no alternation in length of scale whorls; ventrally, scales narrower than dorsals, and more feebly keeled, first six to seven rows from vent smooth with straight posterior edges; lateral scales near base of tail diagonally keeled; 23 scales in fifth whorl beyond granular post-anal scales.

Colour: Above dark brown to blackish, with a whitish dorso-lateral band running from fourth supraocular to root of tail, also a light brownish longitudinal streak on either side of vertebral line from back of head to root of tail; head light brown, with faint speckling of darker, a dark band along side of head passing through eye and ending near nostril; a thin whitish streak from posterior corner of eye to armpit, continuing faintly along sides to groin; sides of body and limbs paler than above, with a few scattered whitish spots. Below bluish, with a slight speckling of darker, more intense under hind limbs. Tail above

pale brown, with dark body colour extending down proximal half in three longitudinal bands (a median dorsal and two lateral); below, pale bluish.

Dimensions:—

	<i>Type ♀ (T.M. No. 13989).</i>
Total length	117.5 mm.
Snout to vent	49.0 mm.
Snout to forelimb	16.2 mm.
Head length	11.3 mm.
Head width	7.5 mm.
Head depth	4.4 mm.
Forelimb	15.5 mm.
Hindlimb	26.0 mm.
Foot	12.5 mm.
Tail	68.5 mm.

Discussion: Of the six sections into which Boulenger divides the Genus *Lacerta*, section III, *Zootoca*, appears to be the only one to which the above described species can be assigned, although it shows no close relationship to any of the species included in this group. In the presence of a parietal foramen, *L. rupicola* sp. nov. stands alone among the other African species viz. *L. vauereselli* (Tornier) *jacksonii* Boul. *australis* Hwt. and *echinata* Cope, characterised by the absence of the foramen. This morphological negative feature is regarded by *Boulenger as due to convergence connected with climatic conditions. This theory may hold good for the three tropical species but breaks down, however, with the discovery of *L. australis* in the extreme south and *L. rupicola* in the northern Transvaal. The strongly depressed head of *L. rupicola* may be correlated with its mountain habitat, and in this respect resembles *L. jacksonii* and *L. australis*.

Habitat: Lake Fundusi, the type locality of the above described new species, lies in the midst of the Zoutpansberg Mountains, which run roughly from east to west across the northern Transvaal and form the northernmost spur of the Drakensberg system. The lake, which lies at an altitude of about 2,600 feet, has been formed by an extensive landslide damming up the valley of the Motale River with a wall of boulders. It was while detaching some moss from the latter, that this interesting Lacertid was exposed.

* Boulenger, 1920, Mon. Lacertidae, I, p. 150.

Fig. 1. *Zonurus laevigatus* sp. nov. Dorsal view of head.

FIG. 2. *Zonurus laevigatus* sp. nov. Side view of head.

Fig. 3. *Monopeltis granti transvaalensis* subsp. nov. Dorsal view of head.

Fig. 4. *Monopeltis granti transvaalensis* subsp. nov. Ventral view of head.

Fig. 5. *Monopeltis granti transvaalensis* subsp. nov. Side view of head.

Fig. 6. *Lacerta rupicola* sp. nov. Dorsal view of head.

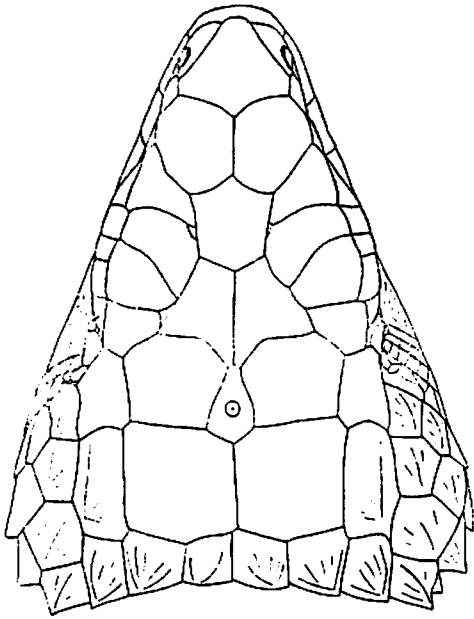


Fig. 1.

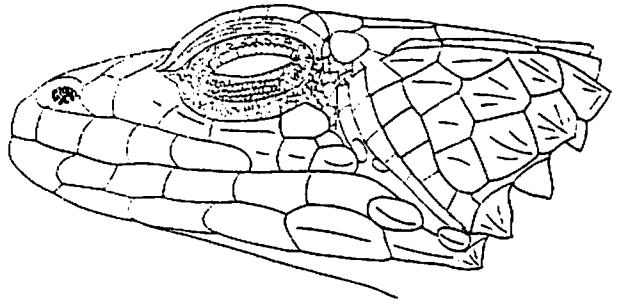


Fig. 2.

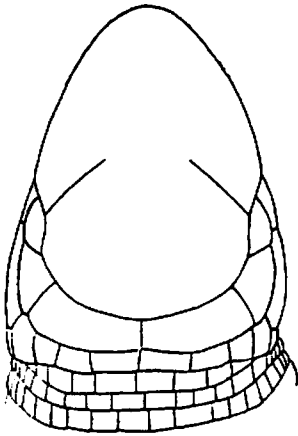


Fig. 3.

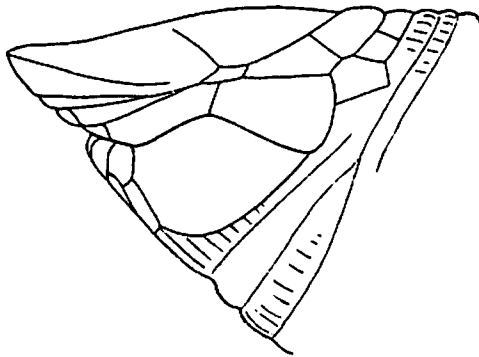


Fig. 5.

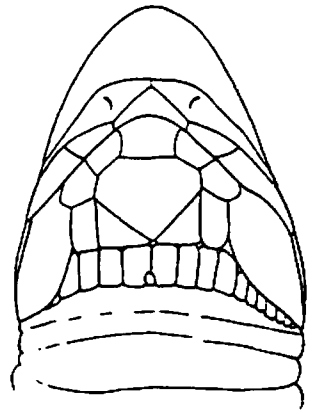


Fig. 4.

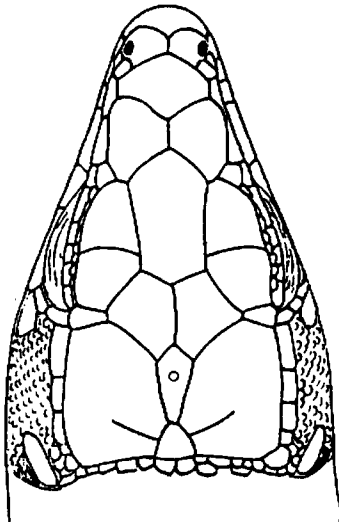


Fig. 6.