II.—On some Lizards and Arachnids of Natal,

by

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Order LACERTILIA.

According to his account in the 'Reise nach Mossambique,' *Herpetosaura* was originally proposed by W. Peters to replace *Lithophilus* of A. Smith, the latter name being pre-occupied. In such case, the genotypes should be *Lithophilus inornatus* and *L. bicolor*, species which have both been included in the genus *Scelotes* since the publication of Boulenger's great work in the British Museum Catalogue of Lizards. In separating their genera from *Scelotes*, both Smith and Peters were chiefly impressed by the complete absence of hind limbs, a character rightly rejected as generic by Boulenger, for variation in limb characters is very great within the limits of the genus *Scelotes*, even in its restricted sense. Another character which hitherto has seemed of greater importance, being used by Boulenger to separate his genus *Herpetoseps* from *Scelotes*, depends on whether or not the palatine bones meet along the midline of the palate. *Herpetoseps*, founded on the species *H. anguina* taken near Port Elizabeth, was however, abandoned by its author in favour of *Herpetosaura* when it was found that one of Peter's species of that genus was also characterised by the possession of separated palatines. But this palatine character now seems to me quite unsatisfactory, for intermediates between the extreme condition are known.

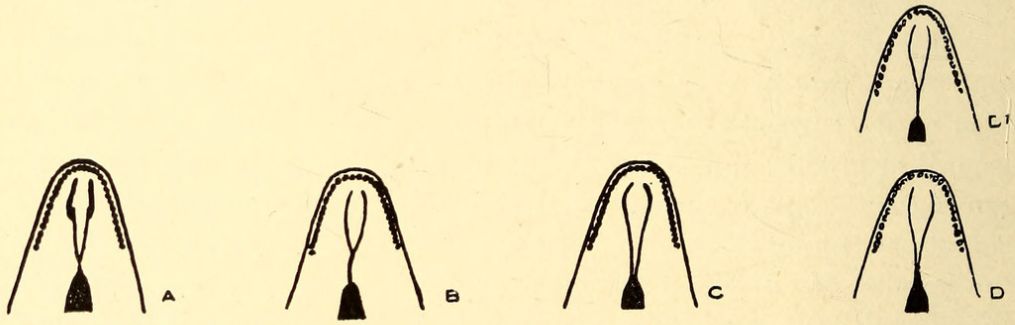
Scelotes natalensis, sp. nov. (Text-fig. 1).

This is founded on two specimens from Durban, collected 16th June, 1918, by Mr. S. Collins and now in the Durban Museum. They are superficially much like *Herpetosaura anguina*, Blgr., both in colour and scaling. However, the palatines are in contact along the median line, though only for a short distance, and there is what may prove to be a characteristic colour feature in the complete absence of dark spots on both chin and throat, whereas in *anguina* only the chin is devoid of black pigmentation. The lateral surfaces of the body in *anguina* are also more deeply pigmented than in the Durban specimens, a more

or less continuous dark dorsolateral streak or band being present, whereas the dark spots on the sides of the Durban specimens do not fuse up into streaks or bands. In the scaling of the head, the fronto-nasal seems relatively larger than that of *anguina*, its length being about twice that of a supra-nasal, whereas in *anguina* the fronto-nasal is hardly $1\frac{1}{2}$ times as long as the supra-nasal.

These specimens are also in general agreement with Boulenger's description of *Scelotes inornatus*, Smith, in the Brit. Mus. Catalogue, which seems to have been drawn up from Smith's type of the species and from a specimen taken at Port Natal. They do not agree, however, with Smith's original description, for the type of *Lithophilus inornatus* had the colour of the under parts "wine-yellow," and although the upper and lateral surfaces were said to be darkly spotted, such was apparently not the case ventrally; further, the fact that

TEXT-FIG. 1.



Palates of several species of SCELOTES, Fitring.

A—*natalensis*, sp. nov., from Durban. B—*guentheri*, Blgr., from Lourenço Marques. C—*anguina*, Blgr., from Bathurst coast. D—*mira*, Roux, from Forbes Reef. D^1—*mira*, Roux, half-grown specimen.

Smith recorded his species from "arid situations in the interior of Southern Africa" makes the identity of Durban specimens with *inornatus* still more doubtful. In the Natal Museum there is a single specimen from Kosi Bay, Zululand, which was labelled by Mr. Boulenger as *Scelotes inornatus*. It agrees with the types of *S. natalensis* in having the chin and throat quite pale, without dark spots: it differs, however, in that the palatines are united for a considerable distance, just as in a typical *Scelotes*, and further the fronto-nasal scute is not so long as in *natalensis*.

Another variety which seems to be similar to the Durban form, so

far as one can judge from the rather brief account of its author, was described by Peters from Manische, near Inhambane, under the name of *Herpetosaura inornata*, var. *mossambica*: this was referred by Boulenger to *Scelotes inornatus*.

Another quite distinct species is known to me from Natal and Zululand. Although the head scaling thereof, as I have previously pointed out, differs in important respects (absence of post-nasals, temporals elongated) from the description of *Scelotes guentheri*, Blgr., it should probably be referred to that species, and two such specimens from the junction of the Umfolosi Rivers, Zululand, now in the Natal Museum, were thus identified by Boulenger himself: the type is apparently an aberrant specimen. Of this species, the Transvaal Museum possesses a large series of specimens from Portuguese East Africa, in all of which, according to Mr. G. van Dam, the hind limb rudiment is present.

In these specimens, the palatines are united for a considerable distance and thus the species is easily distinguished from *natalensis*, quite apart from the hind limb rudiment. In view of the more or less intermediate nature of the palatines in *natalensis*, it seems to me no longer desirable to maintain the genus *Herpetosaura* (or *Herpetoseps*) as distinct from *Scelotes*.

The Transvaal Museum has two interesting specimens of a *Scelotes* from Forbes Reef, Swaziland. These seem to be referable to *Herpetosaura mira*, Roux. The smaller example has the palatines in contact, just as in a typical *Scelotes*: the larger one has the palatines just separated, and thus falls in the *Herpetosaura* group. This species, though resembling *H. anguina* in the head scaling, is clearly not closely related thereto, considering the pentadactyl limbs, the distinct ear opening, and the body colouration which is paler at the sides than above. On the other hand, in spite of the resemblance in limb characters, it does not seem to be allied to *S. capensis*, which has a transparent lower eyelid and a post-nasal scute. Nevertheless, the eyelid character does not exclude *mira* from the pentadactyl group of *Scelotes*, for three of the Malagasy species are like *mira* in this respect: but, these three species all have a distinct post-nasal scute. The absence of a post-nasal, again, does not separate *mira* from all the limbed species of the genus, for *S. bipes* is without that scute, and perhaps also *tridactylus*, the description of which contains no allusion to this character.

The palate of the new species, and of its several allies, is illustrated in the accompanying figures.

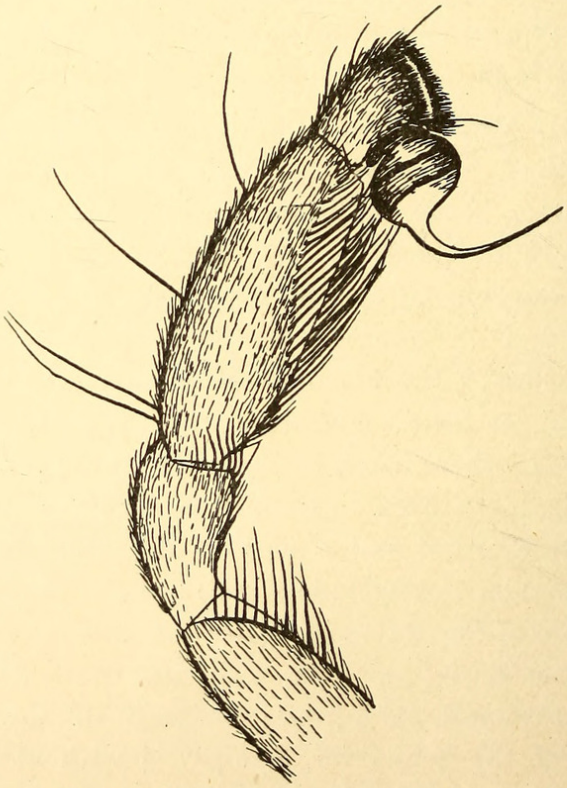
Order ARANEÆ.

Brachionopus robustus, Pocock. P.Z.S. 1897, p. 740. (Text-fig. 2).

The male of this species has not yet been described, although no less than four species have been established on female characters. An adult male from Bellair, Natal, collected by Mr. E. C. Chubb (3rd October, 1919), seems to me very probably the male of *robustus*, the type female of which was said to have come from East London.

Comparing it with the known males of the genus *Harpactirella*, it is remarkable in the shortness of the legs. The carapace is as long as the metatarsus and $\frac{7}{8}$ of the tarsus of the fourth leg, or as long as the tibia, metatarsus and $\frac{2}{3}$ of the tarsus of the first leg. First leg not modified. In legs I and II the patellæ, tibiæ, and metatarsi, are

Text-fig. 2.



Brachionopus robustus, Poc.

Palp of adult male from Bellair, Natal.

approximately equal in length. Metatarsi I and II with a single short spine at the apex inferiorly. Tibia I with two spines at the apex inferiorly, the inner one being long and strong and slightly curved: it arises from a small inconspicuous tubercle. Tibia I stouter than the metatarsus, but not specially incrassated towards the apex: it is about $\frac{3}{4}$ as long as the distance from fovea to hind-margin of ocular tubercle. Tibia II a little weaker than I, with two spines at apex inferiorly. Metatarsus IV with two long strong spines on the posterior surface superiorly and three pairs of long spines on the anterior surface; also a pair of spines at the apex inferiorly. Tarsal scopulæ entire, those of leg IV with some long hairs intermixed. Metatarsi all scopulate, but scopulæ intermingled with long hairs on I and II, and divided by setæ and long hairs in III and IV. Labium with about six very small denticles, and maxilla with a group of about 15. Chelicera with nine teeth, a few rastellar bristles but no definite rastellum, and without any stridulatory bristles although a pair of long setæ, representing a ventral group of stridulatory bristles, is present just above the ventral fringe. There is no proper scopula on the chelicera, but silky hairs arranged in about four longitudinal bands do occur on the outer surface dorsally.

Process of palpal organ long and filiform, drawn out to a fine point. Spinners small, the apical segment short and obtuse, a little shorter than second segment. The colour characters seem to be similar to those of the type female.

Length of carapace 6·3 mm.; breadth of carapace 5·15 mm.; length of palp 9 mm.; of first leg 15·4 mm.; of second leg 14 mm.; of third leg 12·5 mm.; of fourth leg 17·9 mm.

If the genus is, as I believe, very closely related to *Harpactirella*, a comparison between this species and the male of *Harpactirella magna* shews how very unimportant a character the length of the spinners may be. The spinners in the male of *H. magna* are very long and slender, the terminal segment longer that the middle segment, and thus quite different from those of a typical *Barychelid* such as *B. robustus*. Dr. Purcell, referring to the female of *magna*, also described the spinners as having apical segment long and terete. In this group of spiders the length of the spinners varies concurrently with that of the legs. Thus it cannot rightly be used in discriminating between families, and, considering the wide range of spinneret variation within the genus *Harpactirella*, it is doubtful if on this

character *Brachionopus* should be kept distinct therefrom. The absence of a well defined spur on the first tibia of the adult male in *Brachionopus* may be of generic value, but secondary sexual characters are apt to be erratic.

Order SOLIFUGÆ.

Solpuga chadwicki, sp. nov. (Text-fig. 3).

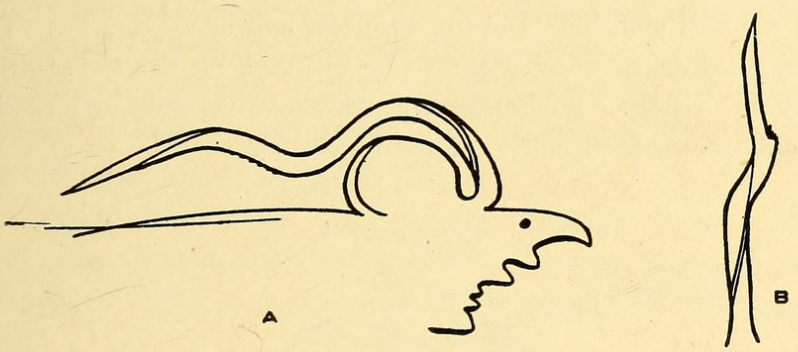
This species is founded on a series of adult male and female specimens collected at Weenen by Mr. J. M. K. Chadwick during the latter part of December, 1919, and the first week of January, 1920. It is closely related to *strepsiceros*, Krpln. of Barberton; *serraticornis*, Purc. of Bulawayo; and *spiralicornis*, Purc. of the Zoutpansberg and Barberton districts. The jaws and flagellum are stouter than in any of these species, and the shaft of the flagellum differently and more strongly curved. It is just possible that *S. caffra*, Pocock, founded on two adult female specimens from Estcourt, may actually belong to this species, but as it is quite impossible to identify species of this genus from female characters, I ignore those which are founded only on females.

Flagellum. The basal enlargement is high and well rounded, the inner surface flattened, outer surface swollen. Procurrent portion of shaft very short, the anterior band situated over the second tooth. In side view, the shaft presents two curves with a sinus between them in its course; the first is a bold curve immediately above the basal enlargement, then follows a well marked sinus, and afterwards the terminal curve which is weaker than the first one, the shaft towards its tip becoming straight. Viewed from above, the shaft is seen to be twisted outwards at the sinus. On its outer side near the summit of the distal curve, there is a slight lateral extension of the membrane extending for a short distance along the shaft and terminating abruptly distally; this extension has serrated and prickly edges, which serrations extend proximally almost as far as the base of the sinus. Over the greater portion of its length the shaft is more or less subcylindric; it is expanded but not greatly flattened at the anterior band. At the apex it is acuminately pointed, the end being not far from the ocular tubercle.

Dentition. Inner surface of upper jaw superiorly with a small denticle above the first tooth. Terminal fang of moderate length. Two small teeth between the second and fifth which are large. Feather bristles well developed on the inner surface. Terminal fang of lower jaw strong, the distance from its tip to the tip of the first tooth being scarcely $1\frac{1}{4}$ times the distance between the first and third teeth. Lower jaw strong, with good development of bristles on its inner surface but most of these are not feathered. Upper surface of cheliceræ with bristles and very slender spines.

Measurements. Length of flagellum 6·6 mm.; breadth of head-plate 7·5 mm ; length of patella of palp 10 mm.; of tibia and tarsus of palp 10 mm.; of patella of fourth leg 9·5 mm.

Text-fig. 3.



Solpuga chadwicki, sp. nov.

A—Left chelicera with flagellum, seen from mesial side.
B—Shaft of flagelium, seen from above.

Colour. Appendages dull brown, the distal segments of the legs quite pale, the proximal segments slightly infuscated. Head-plate and cheliceræ pale, owing to the abundance of short pale yellowish setæ scattered over the surfaces, as well as long bristles. Abdominal tergites, except sometimes the first, are black ; sides of abdomen with pale yellow hairs, becoming more golden near the tergites.

The female has two small intermediate teeth in the upper jaw. It is darker than the male, the cheliceræ, head-plate and appendages being a dark olive-brown ; abdominal tergites black, sides of abdomen with golden hairs. Distal segments of legs (tibiæ and tarsi), especially of I–III, devoid of dark pigment.

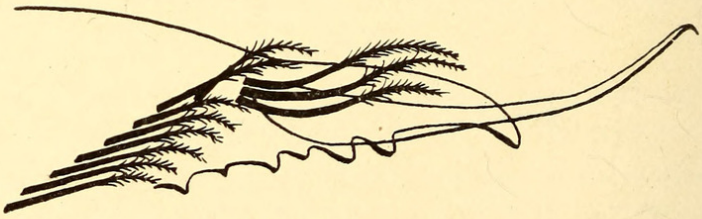
Measurements. Width of head-plate 8·4 mm.; length of tarsus, plus tibia of palp, 8 mm.; of patella of palp 7 mm.; of patella of fourth leg 7·25 mm.; of tibia of fourth leg 6·5 mm.

Most of the specimens sent by Mr. Chadwick were found running about the shale at midday on 16th December, a very hot day after rains. Juvenile specimens were caught with great difficulty, being very quick in their movements, and often disappearing down holes in the ground.

Blossia falcifera dolichognathus, Hwtt. (Text-fig. 4).

This form described from Douglas, C.P., has recently (16th December, 1919) been taken at Weenen, Natal, by Mr. J. M. K. Chadwick, who wrote of it as follows: "Without exception, these are found under stones; usually on the outside of the impression made by the stone in a small chamber looking like the run of a termite. They are very easily taken, as they seem to be blinded by the sun and wander aimlessly in circles. I should say they are undoubtedly nocturnal." This is the first record of the genus in Natal.

Text-fig. 4.



Blossia falcifera dolichognathus.

Distal portion of upper jaw of male, shewing isolated group of three enlarged feather bristles at base of flagellum.

The arrangement of the distal feather bristles of the upper jaw is a noteworthy feature of *falcifera*. The three distal bristles are considerably enlarged, and form a compact group well separated from the rest of the series. The group closely adjoins the base of the flagellum which it apparently protects. Thus, there is considerable resemblance between this arrangement and that found in the genus *Ceroma*.

A similar condition is found in *B. filicornis*, but in most species of *Blossia*, and in *Hemiblossia*, the series of feather bristles is continuous throughout, as in females.

Order SCORPIONES.

Hadogenes trichiurus pallidus, Poc.

We have adult male and female examples of this form from Weenen (J. M. K. Chadwick and H. L. Bulcock). Though originally described by Mr. Pocock as a distinct species (Ann. Mag. Nat. Hist., vii, 2, p. 198), it is clearly only a variety of *trichiurus*. It resembles *H. trichiurus caffer*, Mihi, in most respects, but differs therefrom chiefly in that the caudal segments of the male are not so slender as in *caffer*, or as in *whitei*, being deeper in proportion to the length, and the vesicle is bigger and stouter than in either of those species; in the male of *caffer* and of *whitei*, the upper margin of the fifth caudal segment is almost straight and sub-parallel with the inferior margin, whereas in *pallidus* it is more distinctly arched. The male vesicle in its lower half has granular surfaces; in *caffer*, the surface is either quite smooth or may be more or less granulated.

In the female the upper margin of fifth caudal segment is continuously, though weakly, denticulated as in *whitei*; in *caffer*, only a few very weak denticulations occur.

In the female of *pallidus* the terminal tooth of superior crest of caudal segment IV is scarcely enlarged and certainly not subspiniform; in the female of *caffer* it is considerably enlarged and practically subspiniform.

Pectines. Male 18·20 mm.; female 14·16 mm.

Measurements:	♂ mm.	♀ mm.
Length first caudal segment ...	13·8	7·35
Breadth „ „ „ ...	3·9	3
Height behind „ „ ...	4·15	3·1
Length second „ „ ...	17·2	8·8
Length third „ „ ...	18·8	9
Length fourth „ „ ...	20·3	10
Length fifth „ „ ...	18·6	10 2
Height of second caudal segment behind to tip of spine ...	5·9	3·9
Length of carapace	14·4	13·5
Length of movable finger ...	14	13·5
Length of vesicle	9·5	8·1
Breadth of vesicle	3	2·6
Depth of vesicle	4	3·1

The specimens from Weenen are light brown in colour, being paler than either *caffer* or *whitei*.

Hewitt, John. 1921. "II.—On some Lizards and Arachnids of Natal." *Annals of the Durban Museum* 3, 3–11.

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