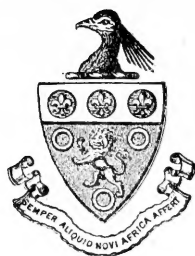


ANNALS
OF THE
SOUTH AFRICAN MUSEUM

VOLUME V

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LIST OF CONTRIBUTORS.

	PAGE
R. S. BAGNALL, F.E.S.	
New South African Thysanoptera	425
L. BÉGUIN-BELLECOQ.	
List of Species of the Coleopterous Genus <i>Apion</i> (Curculionidæ) in the collections of the South African Museum, and descriptions of New Species	429
G. A. BOULENGER, F.R.S.	
A revised list of the South African Reptiles and Batrachians, with systematic tables, special references to the specimens in the South African Museum, and descriptions of New Species	455
R. BROOM, D.Sc., M.D.	
On the remains of <i>Erythrosuchus africanus</i> , Broom. Plate IV.	187
On the milk dentition of <i>Orycteropus</i>	385
P. CAMERON.	
Descriptions of New Species of Parasitic Hymenoptera, chiefly in the collection of the South African Museum, Cape Town	17
Descriptions of Species of Parasitic Hymenoptera, chiefly in the collection of the South African Museum	203
E. COHEN.	
On the Meteoric Stone which fell at the Mission Station of St. Mark's, Transkei, on January 3rd, 1903. Plates I.—III.	1
E. MEYRICK, B.A., F.R.S.	
New South African Micro-Lepidoptera (I.)	349
New South African Micro-Lepidoptera (II.)	411
L. PÉRINGUEY, D.Sc., F.E.S.	
Seventh Contribution to the South African Coleopterous Fauna. Plates V.—VI.	271
New or little known South African <i>Mutillidæ</i> (Hymenoptera)	349
Descriptions of New or little known Species of the <i>Hemerobiidæ</i> (Order Neuroptera) from South Africa. Plates VII—IX.	433
A. RAFFRAY.	
New South African Myrmecophilous <i>Pselaphidæ</i>	419
S. SCHENKLING.	
New Species of <i>Cleridæ</i> (Coleoptera) in the Entomological collection of the South African Museum	197
F. C. SHRUBSALL, M.D.	
Notes on some Bushman Crania and Bones from the South African Museum	227

LIST OF NEW GENERIC NAMES

INTRODUCED IN THIS VOLUME.

	PAGE
Alitha, n. g., Alysiidæ (Hymenoptera), Camer	28
Allothea, n. g., Ichneumonidæ (Hymenoptera), Camer	103
Anisojoppa, n. g., Ichneumonidæ (Hymenoptera), Camer	168
Bacuma, n. g., Braconidæ (Hymenoptera), Camer	68
Caloecus, n. g., Brachyderinæ (Coleoptera), Péring.	320
Costateridus, n. g., Tanyrrhynchinæ (Coleoptera), Péring.	324
Costaterophasis, n. g., Tanyrrhynchinæ (Coleoptera), Péring.	323
Cratocentrus, n. g., Chalcididæ (Hymenoptera), Camer	215
Criticonoma, n. g., Tineidæ (Micro-Lepidoptera), Meyr.	415
Cryptaulax, n. g., Ichneumonidæ (Hymenoptera), Camer	150
Crytea, n. g., Ichneumonidæ (Hymenoptera), Camer	171
Ctenotoma, n. g., Ichneumonidæ (Hymenoptera), Camer	127
Delaulax, n. g., Ichneumonidæ (Hymenoptera), Camer	111
Diocosma, n. g., Gelechiadæ (Micro-Lepidoptera), Meyr.	352
Encolpotis, n. g., Gelechiadæ (Micro-Lepidoptera), Meyr.	352
Encyopsidius, n. g., Ascalaphidæ (Neuroptera), Péring.	450
Erythrophion, n. g., Ichneumonidæ (Hymenoptera), Camer	87
Esenga, n. g., Braconidæ (Hymenoptera), Camer	36
Eurycentrus, n. g., Chalcididæ (Hymenoptera), Camer	218
Euryophion, n. g., Ichneumonidæ (Hymenoptera), Camer	83
Gonioprymnus, n. g., Ichneumonidæ (Hymenoptera), Camer	126
Gypsosaris, n. g., Plutellidæ (Micro-Lepidoptera), Meyr.	375
Holcopimpla, n. g., Ichneumonidæ (Hymenoptera), Camer	112
Kerremansia, n. g., Buprestidæ (Coleoptera), Péring.	309
Latana, n. g., Braconidæ (Hymenoptera), Camer	77
Leptophatnus, n. g., Ichneumonidæ (Hymenoptera), Camer	165
Lienella, n. g., Ichneumonidæ (Hymenoptera), Camer	155
Mesitomorplus, n. g., Curculionidæ (Coleoptera), Péring.	328
Minanga, n. g., Braconidæ (Hymenoptera), Péring.	30
Odesia, n. g., Braconidæ (Hymenoptera), Péring.	79
Odontagrypon, n. g., Ichneumonidæ (Hymenoptera), Camer	90
Orroptegia, n. g., Pselaphidæ (Coleoptera), Raffr.	419
Oxyjoppa, n. g., Ichneumonidæ (Hymenoptera), Camer	169
Palparidius, n. g., Hemerobiinæ (Neuroptera), Péring.	440
Paracollyria, n. g., Ichneumonidæ (Hymenoptera), Camer	106
Parexaula, n. g., Stenomidæ (Micro-Lepidoptera), Meyr.	356
Pentarthrophasis, n. g., Curculionidæ (Coleoptera), Péring.	326
Phaisura, n. g., Ichneumonidæ (Hymenoptera), Camer	170
Pimplomorpha, n. g., Ichneumonidæ (Hymenoptera), Camer	95
Rhæoptera, n. g., Æcophoridæ (Micro-Lepidoptera), Meyr.	373

	PAGE
Rhynchexetastes, n. g., Ichneumonidæ (Hymenoptera), Camer	102
Rhynchotrevoria, n. g., Ichneumonidæ (Hymenoptera), Camer	125
Ricrena, n. g., Ichneumonidæ (Hymenoptera), Camer	104
Rossella, n. g., Ichneumonidæ (Hymenoptera), Camer	176
Schizotbracon, n. g., Braconidæ (Hymenoptera), Camer	70
Scyrotis, n. g., Tineidæ (Micro-Lepidoptera), Meyr.	377
Stenaulax, n. g., Ichneumonidæ (Hymenoptera), Camer	143
Stenomeris, n. g., Ichneumonidæ (Hymenoptera), Camer	154
Stibulaspis, n. g., Chalcididæ (Hymenoptera), Camer	220
Stictophion, n. g., Ichneumonidæ (Hymenoptera), Camer	85
Symbatica, n. g., Gelechiadæ (Micro-Lepidoptera), Meyr.	413
Telerda, n. g., Braconidæ (Hymenoptera), Camer	75
Trigastrotheca, n. g., Braconidæ (Hymenoptera), Camer	32
Xanthephialtes, n. g., Ichneumonidæ (Hymenoptera), Camer	118

DATE OF ISSUE OF THE PARTS.

- Part 1, pp. 1-16, issued January 4, 1906.
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 Part 7, pp. 349-410, issued June 10, 1909.
 Part 8, pp. 411-454, issued September 22, 1910.
 Part 9, pp. 455-538, issued December 22, 1910.

LIST OF PLATES.

PLATE

- I. St. Mark's Meteorite.
- II. St. Mark's Meteorite.
- III. St. Mark's Meteorite.
- IV. *Erythrosuchus africanus*.
- V. South African Coleoptera.
- VI. South African Coleoptera.
- VII. South African Hemerobiidæ.
- VIII. South African Hemerobiidæ.
- IX. South African Hemerobiidæ.

ANNALS

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SOUTH AFRICAN MUSEUM.

PART I.

- 1.—*On the Meteoric Stone which fell at the Mission Station of St. Mark's,* Transkei, on January 3, 1903.*—By PROF. E. COHEN, of Greifswald.

[NOTE.—The first portion of this paper was completed before the lamented death of the author, on April 12, 1905. I am deeply indebted to Prof. E. Klein, of Berlin, for kindly completing for publication the notes on chemical and microscopic characters contained in the second part of this paper; also to Mr. W. Spilhaus, of Cape Town, for making the translation from the German original MSS.—W. L. S.]

PART I.—*General Characters.*

THIS stone was presented to the South African Museum by Archdeacon Coakes, and was entrusted to me for examination and description by Mr. W. L. Sclater, the Director of the Museum.

The account of the fall, sent by Mr. Sclater, takes the form of a sworn statement, dated St. Mark's, Cofimvaba, January 5, 1903, by Zwelibanzi, the native who witnessed the occurrence, and another by Mr. Arthur Gladwin, the Resident Magistrate, who conducted the inquiry on the spot on behalf of the Cape Government.

Zwelibanzi's statement is as follows: "I am the son of Zanazo, and live at St. Mark's under Headman Dlakana in this district. On Saturday last I and other boys went to a dance at Dlakana's Kraal, St. Mark's, and on the way to Dlakana we called at May's Kraal. I sat down near the door. Suddenly I saw a great light shine outside, and immediately it went out I went outside, and heard four great reports, in quick succession, followed by a rumbling noise. Then something fell down, with a great thud, on the ground, in a recently cultivated land of Jacob Lwana. I took particular note of the spot, which was about 250 yards away from where I was, and in the morning I and another boy went to the spot and found it easily, without any difficulty. We found a black stone on the ground. There was a hole in the ground beside it about 2 feet deep. Apparently the stone

* St. Mark's is situated 32° 3 S. and 27° 16 E. of Greenwich.

dropped down in the ground, and must have jumped up again. I reported the matter to the people at home, and it was eventually reported to Headman Dlakana, who said it was to be brought to the office."

Mr. Gladwin states that the stone fell at 11 p.m. on January 3, 1903, that it weighed $30\frac{1}{2}$ lbs. ($13\frac{3}{4}$ kg.) when found, and "scintillated," but some natives had washed it, and it had in consequence lost this effect.

According to other communications, a piece was broken from the meteorite and passed into the hands of a German trader, but it has not since been traced.

Most of the phenomena here recorded—the bright light, sounds of an explosion, a rumbling noise, fall of a heavy body—are those which usually accompany the advent of a meteorite. But a peculiar and, as far as I know, hitherto unrecorded feature of this particular fall is the assertion that the stone lay, when found, *beside* the hole. About the direction of the latter nothing is said, but if one assumes that it was a trench, then with an inclined fall a rebounding would be conceivable. To this the extraordinary tenacity of the stone, due to its fine and even structure, comparable to that of basalt and diabase, may have contributed favourably.

One is reminded here of Delaunay's description of the meteor of Than-Duc, which scooped out a trench 32 metres long, 6 wide, and 2 deep, and is said to have then disappeared again, the account of the Indian by whom the apparition was observed running as follows: "The animal which created the furrow has flown back again to the sky."*

The meteorite, which when it reached me weighed 13,783 gr., is a wedge-shaped slab, from $10\frac{1}{2}$ to $5\frac{1}{2}$ cm. thick. The two principal surfaces are of a roughly trapezoidal form, the sides of one (Plate II., Fig. 1) measuring 24, 22, 15, and 13, and those of the other (Plate II., Fig. 2), allowing for a wedge-shaped piece which has broken off, 26, 23, 20, and 16 cm. respectively. Of the five sides of the meteorite, four are at nearly right angles to the principal surfaces, and form with them remarkably sharp edges, while the fifth is inclined to them at acute and obtuse angles (Plate II., Fig. 2, on the right).

In spite of the shape, which is unusual for oriented meteorites, this meteorite shows a well-defined orientation, which is hardly more beautiful and distinct in any other.

* "Chute le 25 Octobre, 1887, à Than-Duc, d'une météorite qui paraît avoir disparu à la suite d'un ricochet." Comptes rendus hebdomadaires des Séances de l'Académie des Sciences, 1887, CV., 1292.

The back (Plate II., Fig. 1) is flat, and is covered with shallow pittings, lying close together, and mostly circular. The diameter averages $1\frac{1}{2}$ cm., variations above and below being only small, and the pittings look like the impressions made by the thumb upon a piece of soft clay. Their distribution over the surface is very regular up to near the margin. The crust is brownish-black, finely wrinkled, with a dull to shining lustre. The cavities, from 1 to 2 mm. across, a great many of which can be distinctly seen in the photograph, are probably due to the melting out or the breaking out of chondrules rather than to escaping gas; perhaps they are to be referred partly to the one cause, partly to the other. The very fine, shallow, yet clearly defined wrinkles, with which the whole surface is uniformly covered, anastomose in the most dainty manner. Towards the centre they form a fine network with more rounded meshes; on the bordering parts these are long drawn out, so that a drift-effect is produced, which is directed towards the border, and shows particularly well at the projecting top solid angle (Plate II., Fig. 1). Close to this there appears on the photograph a narrow lighter strip, which is due to the fact that just here the crust is somewhat slaggy, so that when the photograph was taken the light was not reflected in the same way as on the other parts of the surface.

The second principal surface (Plate II., Fig. 2) is somewhat undulated, and slightly sunk in, like a saddle. It also shows thumb-marks which, on the whole, are very like those above described, and may be due to the same cause; they are, however, not quite so regularly distributed, and vary a little more in size, depth, and shape. The majority are here also round and very shallow, but some are oblong, and then generally somewhat deeper, though not so deep as they seem on the photograph, particularly on the left half, in consequence of the deep shadows cast by the artificial light. Hollows which may be due to loosened chondrules appear, but only here and there.

The crust which covers the whole surface is somewhat more shining than that on the back. The lustre becomes more like varnish; the colour is black, and is apt to pass into steel-blue in the hollows, and to brownish on the prominences, thus giving to the surface a slightly chequered appearance. From the somewhat eccentric crown there radiates uniformly in all directions a perfect drift-effect, in the form of shallow but very sharp striations due to fusion. These are somewhat broader and more rounded than the wrinkles on the back, and they differ from these, too, in the fact that they run on the whole in straight lines without marked anastomosing, and can be

followed without any break from the crown to the margin. It is hardly likely that there exists another oriented meteorite with a drift-effect so delicate and yet so sharply defined and running so regularly over the whole of the front.

To summarise the differences between the front and the back, they are limited, apart from the drift-effect, to the facts that the back is flatter and has a duller crust, with somewhat shallower thumb-marks. The complete absence on both surfaces of the deep hollows as well as of the larger cavities which usually appear on oriented meteorites is worthy of note.

Of the sides, the slightly sloping one (Plate I., Fig. 1, and Plate II., Fig. 2, on the right) likewise shows in the two places where it still has its original crust the striations resulting from fusion. These can be seen quite distinctly on the photograph, especially when viewed with a lens, but are in reality much more strongly marked. They are a direct continuation of those above described, so that the two drift-affected surfaces together form the front of the meteorite, in spite of the somewhat sharp edge in which they join.

The remaining sides, which are, on the whole, flat and steeply sloping, are covered with a somewhat rough, black to brownish-black crust, which only in those parts where it becomes slightly wrinkled shows indications of a drift-effect directed towards the back. The edges on both sides are, as has already been noted, unusually sharp, and, strange to say, even sharper towards the front than towards the back. Hollows and loose chondrules are entirely wanting on most of the sides; when they occur they are few, and the former are but imperfectly formed.

In several places the meteorite has been chipped. The largest breakage is on one of the solid angles (Plate I., Fig. 2, and Plate II., Fig. 1, below, on the right, in both cases), the weight of the missing piece, shaped like a blunt triangular pyramid, being estimated at $1\frac{1}{2}$ kg. In addition flat pieces have chipped off on several of the edges, with the result that these, apparently once sharp, have become bevelled. This is shown in all the views, but best in the side view (Plate I., Fig. 2, below, right and left), where the breakage has also been continued as two narrow strips extending from the left corner to the front surface. Since all the broken parts show exactly the same structure, particularly the brownish colour such as is characteristic of secondary crust formations, and as in addition there occurs on some isolated parts a bark-like crust,* the splintering must have

* It resembles that characteristic of some crystalline chondritic meteorites. v. E. Cohen, *Meteoritenkunde*, Heft II., 111. Stuttgart, 1903.

taken place in the atmosphere at a period when the velocity of the mass was still sufficient to allow of a crust, even an imperfect one, being formed. Moreover, the original crust often terminates at such places in a lumpy overlapping edge, so that its formation could not have been complete when the splitting off took place, and this is an additional proof that the meteorite cannot have suffered in the fall, or afterwards. As for the statement that a piece of the meteorite passed into other hands, this may be an error, due to its having been noticed that one of the solid-angles was missing. On the other hand, it is not impossible that two stones entered the atmosphere, or that the fragment was found at some distance from the mass. One cannot expect to find them close together, since the check to the velocity of two pieces differing so much in weight does not occur simultaneously.

On breaking the stone it is found to be unusually tough; further, it can be seen at a glance that it belongs to the poorly represented group of black chondritic meteorites. The fractured surface is rough, of extraordinarily fine and even grain, and dark ashy grey; the structure is firm and compact. Minute metallic flakes are uniformly scattered over the whole, but they can be seen in part only with the unaided eye. Some show such highly reflecting and seemingly smooth surfaces that they might almost be taken for crystal faces, but they are so very small that one cannot be certain of this. Strange to say, even a strong lens fails to show any trace of iron pyrites, although, judging from the high sulphur percentage, there must be a good deal of it present. It may, however, take the form of a fine dust, which would account largely for the uniformly dark colour.

The chondrules seldom reach a diameter of 2 mm., and even at half that size they are exceptional. The greater number are rounded, and many are spherical; sometimes, however, the shape is less regular or the surfaces are broken. Some remain whole when the stone is broken, and either stand out as hemi-spherules or fall out and leave little dish-like hollows. They have a rough surface, and are the same colour as the matrix. The greater number, however, break, which shows that their adhesion to their surroundings is stronger than their cohesion. When strongly magnified the broken surfaces appear without exception flaky, and have a fatty lustre; often the nature of the structure can be made out, and this is, as a rule, flaky, with a confused radiated arrangement, but occasionally fibrous, with a regular, eccentric arrangement of the particles. At any rate the microscopic examination only points to the presence of chondrules,

which are made up of rhombic pyroxenes. Of these two kinds are distinguishable, those which in the middle are as dark as the matrix, and those which pass from light grey to nearly white, stand out more or less clearly, and give a spotted appearance to some parts of the broken surface. The former predominate considerably.

The shell is in most places so thin that in cross-section it is scarcely noticeable, and seems more like a polish than an actual layer; here and there, however, it reaches a thickness of $\frac{1}{3}$ mm., and it is then differentiated clearly, though not over-sharply, from the matrix.

From the above description it will be seen that the St. Mark's meteorite shows in various ways remarkable properties with regard both to its shape and to the contour of its surface. Conspicuously oriented meteorites are usually bell-shaped or conical or have at least a convexity on the forward parts, but here the front is partly flat and partly even hollowed, forms sharp edges with the sides, and is roughly slab-shaped. A slab-shaped mass which enters the atmosphere with a great velocity will undoubtedly make its passage with one of its principal surfaces directed forward. But as this particular stone is not bounded by two parallel surfaces, and there is therefore an unequal distribution of mass, and as from the nature of the drift-effect a high rate of rotation seems to me out of the question,* one would not expect from the shape *à priori* stability of direction. As a matter of fact, the meteorite cannot have altered its position appreciably until the cessation of its initial velocity. The slab-shaped meteoric iron of Algoma, described by Hobbs,† does not altogether lend itself to direct comparison with this one, as the front shows at least a slight convexity, and the surfaces of the slab, which is only $\frac{1}{2}$ cm. thick, are nearly parallel.

We come then to the conclusion that in the case of perfectly oriented meteorites a certain regularity of shape is indeed usual, but not necessary, and we must take it for granted that, owing to the great speed at which meteorites move, circumstances must play an important rôle that we, in our limited investigations, can neither reproduce nor study.

Particularly striking is the slightness of the differences in the sculpture of the back and of the front. On both surfaces, apart from

* Had there been a high rate of rotation, then, in my opinion, a spiral arrangement of the drift-effect, or at least a wearing off of the fine ribs through mechanical corrosion would have become noticeable. v. E. Cohen, *l.c.*, p. 173.

† "Meteorite from Algoma, Wisconsin." Bull. Geol. Soc. of America, 1903, xiv., 97-116.

the drift-effect and the somewhat different lustre, the crust is very similar; both are alike covered with unusually shallow thumb-marks, all showing differences so trifling in shape, depth, and distribution that only on the most minute examination can they be noticed. There are wanting, too, most of the criteria which otherwise in the case of oriented meteorites, apart from the drift, lead to the conclusion that the circumstances which determine the formation of the surface are essentially different in front of and behind the body moving through the atmosphere.* From the complete absence of trough-shaped cavities and deeply sunk hollows and furrows, I think I am at liberty to draw the conclusion that the existing superficial impressions are not to be referred to the action of strongly compressed, incandescent gases having a rotatory motion, since they are bound to have a quite different effect on the front and on the back and, especially in the case of the latter, cannot affect the whole surface so uniformly.† I might compare the hollows with the scars which are occasionally formed by the scaling off of small flat sherds in the baking of pottery, and attribute them solely to the tension which must result from the considerable differences of temperature between the cold interior of the meteorite and the surface so highly heated immediately on its entering the atmosphere. The existing insignificant distinctions can be explained by the fact that in the forward part the difference between the temperature of the surface and that of the interior is greater than at the back. On the other hand, the extraordinary resemblance in size, shape, and distribution of the impressions on both surfaces may be attributed to the fact that the grain, texture, and mineralogical composition of the St. Mark's stone are unusually uniform throughout, and that in consequence there was nowhere a weak point favourable to the attack of the forces which were transforming the surface; the absence of larger quantities of iron pyrites and nickel iron might, in particular, contribute to this. The scaling off of the sherds must have taken place immediately after the meteorite had entered the atmosphere, since the broken surfaces show the same crust as the remaining parts of the surface.

If the above considerations are correct, we must come to the conclusion that the structure and composition of the meteoric stone may have a greater influence upon the contour of the surfaces than has

* v. E. Cohen, *l.c.*, Heft ii., 151-160.

† v. E. Mach and P. Salcher, "Photographische Fixirung der durch Projectile in der Luft eingeleiteten Vorgänge." *Sitz.-Ber. Ak. Wiss. Wien*, 1887, xcv., ii., 764-780.

up to the present been imagined, there being no reason to suppose that the circumstances resulting from the compression of the air in front of the meteorite and the rarefaction behind it during the passage through the air were different in this case to that of any others. Anyhow, the delicate and unusually regular drift-effect shows that the compressed air flowed uniformly in all directions towards the back part in spite of the flat shape of the stone.

In conclusion, the fact may be mentioned that the stone must have had its present shape on entering the atmosphere, or must at least have acquired it immediately afterwards, since a subsequent change of form would have caused a tilting of the stone and a brushing off of the drift-effect.

PART II. — *Microscopic Structure and Chemical Composition.*

Revised and annotated after the author's death. By Prof.

E. KLEIN, of Berlin.

As a result of the unusual abundance of opaque ores, the sections are not so transparent as are those of the other black chondritic meteorites used for comparison; and as much of the ore occurs either enclosed in the silicates or as part of the chondrules and protected by the shell, it was not possible to make the preparation sufficiently clear either by treatment with acid or neutral solutions of salts. The microscopic examination is therefore exceedingly difficult and liable to error, and for that reason it must not be concluded, because no traces have been found of the accessory constituents so common in chondritic meteorites—maskelynite, plagioclase,* monoclinic pyroxene and glass—that they are entirely wanting here. The only substances which are undoubtedly present are rhombic pyroxene (enstatite, from the chemical analysis), some olivine, nickel iron, and iron pyrites, all of which together, in very varying quantities, make up the chondrules. All the larger opaque particles are of nickel iron, and can be easily determined both by their lustre in reflected light, and by treating the slide with a solution of sulphate of copper. They predominate in the matrix, but are rare in the chondrules, except when they consist, as happens more frequently here than elsewhere, entirely or very largely of nickel iron. In that case they

* This has since been found in small quantities, and shows approximately the properties characteristic of bytownite. A section almost normal to *a* gave an angle of about 57° with the P cleavage trace.—C. K.

contain silicates—olivine and enstatite—porphyritically developed. In one case a nickel-iron chondrule can be seen enclosing a small enstatite chondrule (Plate III., Fig. 4). The particles of nickel iron are often quite structureless, but an actual intergrowth between the silicates of the matrix scarcely occurs, so that they do not give the impression of a later formation.

Iron pyrites, which the chemical analysis shows to be abundant, seems to occur in small particles only, or at any rate there are none large enough to show the characteristic lustre in reflected light. Here belong, in the first place, the opaque particles in the silicates and chondrules, since no copper separates out when the slide is treated with copper sulphate, and the pulverised stone remained dark after 17 per cent. of nickel iron had been extracted in vacuum by means of ammonium mercuric chloride. Secondly, the iron pyrites may often occur intergrown with nickel iron; at any rate there is frequently seen, by strongly reflected light, a narrow border which has not the bluish sheen of pure iron.

Most of the chondrules are either perfectly spherical or nearly so; other forms, such as elongated ones, being rare. Fragmental aggregates are scarcer than usual, and, as already stated, I do not take them here—at least, not as a rule—for fragments of once perfect chondrules. Indented chondrules are often to be seen (see Plate III., Fig. 4, *Meteoritenkunde*, Heft ii., 37–38. Stuttgart, 1903). The various deductions which have been drawn from such occurrences I have brought together and discussed in my *Meteoritenkunde*. The dimensions of the chondrules are usually insignificant, averaging not more than $\frac{1}{8}$ to $\frac{1}{4}$ mm. in diameter; those ranging up to from $\frac{1}{2}$ to $\frac{3}{4}$ mm. are not frequent, and larger ones are quite rare. The total number is certainly greater than one would have expected from the microscopic examination, but not as great as in the other black chondritic meteorites of which it was possible to obtain sections for comparison. Common to all chondrules are the interspersed opaque ores, among which apparently iron pyrites predominates. The proportion of these varies very greatly. The distribution is, as a rule, fairly uniform, but there are occasional concretions in which the narrow polysomatic border, free from inclusions, is clearly differentiated from an opaque or very dark kernel.

The constituents of the matrix are everywhere large enough to determine easily, except, indeed, where there is much of the opaque ore. The matrix thus shows what for a chondritic meteorite is a well-defined and coarsely crystalline structure. Very noteworthy is the absence of dust-like particles of silicates, as the result of which

the tuff-like appearance so characteristic often of chondritic meteorites, is here wanting. On the other hand, there is also an absence of the fused granular aspect of the ground mass which Tschermak lays stress upon for the so-called "granular chondritic meteorites," and on account of which he characterised them as fritted stones.

The crust, about $\frac{1}{4}$ to $\frac{1}{3}$ mm. thick, shows up very well by reflected light, especially when viewed by a lens, but in transmitted light, under the microscope, the outlines, owing to the incomplete fusion of the constituents, are not well defined. Not only are fragments of silicates, still doubly refracting, plentiful, but quite unaltered nickel iron may be detected by its lustre. At all events, one can see under the microscope that the crust does not, as so often happens, form a homogeneous substance. A 0.02 to 0.05 mm. wide outer zone contains only sparse and very small silicate fragments, and brownish transparent isotropic patches which may consist of glass. Next there comes a zone about twice as wide which is rich in silicates, usually in fragments, but also in larger pieces, and apparently no alteration has taken place here. The third zone, which merges into the kernel, is much poorer in silicates and shows a fair quantity of nickel-iron blebs. Glass has not been found here, but it does not follow that it is wanting, the sections not being very thin. The outer zone is undoubtedly the actual crust; the other two may well be compared with Tschermak's segregation* and impregnation zones, though the distinguishing features are not nearly so sharply defined as is the case with chondritic meteorites of more spongy structure. In the photograph (Plate III., Fig. 3) these zones are not clearly differentiated, the slides being so little transparent; still they are indicated on the middle portion defined by two cracks.

Of the silicates, enstatite is by far the most common both in the matrix and in the chondrules. In the former it occurs as a rule as stout, irregular prisms, with longitudinal partings, an actual fibrous structure being rare and then not distinct; in the sections at right angles to the vertical axis the pyroxene cleavage is prismatic and very perfect.† Apart from opaque ores, no inclusions have been observed. On the part of the enstatite chondrules a confused radiated structure is most characteristic, Plate III., Fig. 2, showing a good example. Here the fibres are, as a rule, of about the same size, and only occasionally is there a stouter crystal, giving rise thus

* Vide E. Cohen, *Meteoritenkunde*, Heft ii., 113-115. Stuttgart, 1903.

† The slides are at right angles to the first + bisectrix.—C. K.

to a porphyritic-like structure. After these, but in much smaller number, come the chondrules having a more or less regular, eccentric, radiated structure, in which the individuals never, as so often happens, dwindle to the fineness of fibres. With this kind of structure especially there occur what appear to be fragments. But that they are really such seems to me very doubtful and, judging from the whole nature of their occurrence, I am more inclined to think that they are independent, radiating bundles of enstatite prisms which only by chance resemble the cross-section of a spherule. Enstatite chondrules showing other structures occur only here and there. For instance, there are some made up of a few broad crystals (Plate III., Fig. 4). Others, again, are of fibres, with abundant interspersed ores arranged so as to form a lattice or fan-like structure. When the individuals are cut at right angles to the vertical axis, which can be ascertained from the cleavage traces, they seem as if they were formed of small isometric grains of about equal size, and resemble the faceted eye of an insect.

Olivine is more abundant in the matrix than in the chondrules, and in both its distribution is quite irregular. It occurs, as a rule, in the form of more or less isometric grains, of which occasionally several of the same kind lie close together, so that they may be taken for parts of a larger crystal. Definite crystal faces may occur where an isolated individual lies in iron chondrules or in the larger nickel-iron particles.* The olivine is, as a rule, quite free from cracks, and contains, besides opaque particles, little gas-bubbles, mostly in rows or collected in groups, and colourless glass with or without bubbles. The two latter inclusions appear to be absent from the enstatite. The rare chondrules composed only of olivine are polysomatic and granular. Only here and there does one see mixed chondrules in which the largely predominating enstatite is accompanied by a few olivine grains.

The analysis for the chemical composition was conducted as follows: First, a portion of the pulverised stone was digested for some time with dilute hydrochloric acid, and the silica of the soluble silicates obtained by treating the residue with caustic soda and caustic potash solutions. The determination of sulphur, carbon,

* In very similar cases one may observe in the matrix clear, sharply defined particles, occasionally hexagonal. These show, between crossed nicols, when the stage is rotated, a quick alternation of dark and light, have weak double refraction and low relief. Their optical character is uniaxial and positive. All this points to quartz, which the analysis, with its silica excess, also confirms. The meteorite is thus allied to certain grahamites and to terrestrial basalts, in which similar phenomena are observed.—C. K.

alkalies, salts soluble in water and nickel iron was done with separate portions. For dissolving the latter a well-boiled solution of ammonium-mercuric-chloride was used, in such a way that the reaction and filtration took place in an atmosphere of carefully purified hydrogen.*

1. Composition of silicates soluble in hydrochloric acid:—

1.	
SiO ₂ = 28·51	61·33
Al ₂ O ₃ = 0·57	1·23
FeO = 0·47	1·01
CaO = 0·15	0·32
MgO = 16·78	36·11
Cr ₂ O ₃ = 0·00	—
MnO = trace	—
46·48	100·00

If one reckons the metasilicates of magnesium, iron, and calcium, then 0·57 per cent. of Al₂O₃ and 2·85 per cent. of SiO₂ remain over.

But as it is probable that a part of the alkalies belongs to the silicate which is insoluble in hydrochloric acid, the amount of alumina and a portion of the excess of silica may be explained by the presence of about 3 per cent. of a plagioclase † closely allied to

* Vide C. Friedheim: Ueber die chemische Zusammensetzung der Meteoriten von Alfianello and Concepcion. Sitz.-Ber. d. K. Preuss. Akad. d. Wissensch. Berlin, 1888, and L. Fletcher, Chemical Analysis of the Meteoric Stone found at Makariwa, near Invercargill, New Zealand, in the year 1879. Min. Mag. 1894, X. pp. 288 and 293-295.

† To the same may then also belong the CaO, by which the quantity of plagioclase would be somewhat higher. It is true that the presence of plagioclase could not be proved under the microscope, but, as I have already stated, the abundance of opaque ores make the examination of the matrix very difficult. In both cases about $\frac{1}{2}$ per cent. of Na₂O is taken into account, and there remains then an excess of only 0·84 and 1·56 respectively of silica. This is not too much if one considers that according to the method of reckoning all analytical errors in respect to silica accumulate. At any rate it results that the insoluble silicates may be reckoned for the greater part to an enstatite poor in iron and lime, whose percentage composition follows, under 1b.

1b.	
SiO ₂	59·59
FeO	1·09
CaO	0·35
MgO	38·97
	100·00

albite,* or of about $2\frac{1}{4}$ per cent. of the jadeite molecule ($\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{SiO}_2$).

2 and 2a. Composition of the nickel iron dissolved in ammonium mercuric chloride:—

	2.	2a.
Fe =	14·86	88·45
Ni =	1·44	8·57
Co =	0·25	1·49
Mn =	0·25	1·49
	16·80	100·00

The high percentage of manganese is the more remarkable as meteoric irons are mostly free from this element.

3. Composition of the part soluble in hydrochloric acid after removal of iron pyrites, nickel iron, schreibersite, oldhamite, and calcium chloride. To this is added the sulphur determined in a separate portion. The quantity of metallic iron was calculated from the latter, and from the proportion of Ni + Co to Fe, ascertained from analysis 2. That a higher percentage of nickel iron (19·49 per cent.) is here obtained than in the direct analysis (16·80 per cent.) is easily explained, since a part of the nickel iron is certainly protected by the enveloping silicates against the influence of the ammonium-mercuric-chloride solution.†

	3.
SiO_2	9·78
Al_2O_3	0·07
FeO	5·85
MnO	0·33
CaO	1·33
MgO	1·45
Fe	26·58
Ni	1·84
Co	0·21
Mn	0·29

* The felspar, as the optical examination showed, is a basic lime-soda felspar. The quantity of potash (= 0·23) and soda (= 0·85) found by special determination cannot therefore be calculated as felspar alone. If one makes a lime-soda felspar containing potash, one would have to regard it as insoluble in acids. Besides, one does not know whether the potash or soda belongs to the one or the other analysis, since they appear in a special determination.

The second way, indicated above by Cohen, is practicable, and after taking the jadeite molecule for granted, a small quartz excess would remain, the presence of which is confirmed by the optical examination.—C. K.

† Compare Fletcher, *l.c.* p. 293.

S.....	5·26
P	0·05
Ca	0·28
Cl	0·27
	<hr/>
	53·59

If nickel iron (19·49 per cent.), troilite (14·43 per cent.), and schreibersite (0·32 per cent.), besides calcium chloride (0·42) and oldhamite (0·18) are deducted, the following figures given under 3a, or, calculated per hundred, under 3b, remain for the silicates soluble in hydrochloric acid.

	3a.	3b.	3c. Without Al ₂ O ₃
SiO ₂	9·78	52·00	52·19
Al ₂ O ₃	0·07	0·37	—
FeO	5·85	31·10	31·21
MnO	0·33	1·75	1·76
CaO	1·33	7·07	7·10
MgO	1·45	7·71	7·74
	<hr/>	<hr/>	<hr/>
	18·81	100·00	100·00

These figures do not allow of a calculation as an orthosilicate; even if one wishes to assume that the percentage of ferrous oxide determined by indirect calculation has turned out far too low, the percentage of silica still remains so high that it can scarcely be explained by this cause alone. A determination of all the silica made as a check resulted in even several tenths per cent. more (38·71). I am sorry that I must postpone the attempt to find an explanation.* But if, as from the microscopic examination I must assume, an olivine-like substance is really present, in spite of the large excess of silica, it follows, on the one hand, that this substance diminishes in favour of the enstatite, and, on the other hand, that fayalite and monticellite silicate are strongly represented in it.

4. Carbon determination.

The proportion of carbon was ascertained as 0·36 and 0·38 per

* In this I have not as yet succeeded. For if the 5·85 FeO, 1·45 MgO, 1·33 CaO, 0·33 MnO are reckoned as constituents of olivine, they will require respectively 2·44, 1·09, 0·71, 0·14 of SiO₂, making a total of 4·38 of SiO₂. Then there would still remain 5·40 SiO₂, which could not be taken as quartz since it is the soluble part which is in question. For calculating a felspar the CaO and SiO₂ would suffice, but not 0·07 Al₂O₃. The analysis is not therefore entirely explained, unless the presence of another mineral rich in silica be assumed: but this the microscope did not show.—C. K.

cent. Two other carbon determinations, made with black chondritic meteorites for the sake of comparison, gave, in the case of the MacKinney meteorite, 0.13, and in the case of the Farmington, 0.12 per cent. of carbon. These two figures are so low that one can draw no certain conclusion from them of the presence of a carbon or a carbon compound, while this should be the case with the St. Mark's stone.

5. The solution obtained by boiling with water contained, besides a small quantity of silica (0.07 per cent.)—

$$\text{Ca} = 0.28$$

$$\text{Cl} = 0.27$$

$$\text{S} = 0.08$$

One can therefore assume the presence of some calcium chloride (0.42 per cent.) and calcium sulphide (oldhamite) (0.18 per cent.); the latter was shown by Borgström to occur also in the Hvittis chondritic meteorite. From the data thus obtained there results the chemical composition given below under 6, and the mineralogical composition* given under 7; in this, however, the nature of the silicates soluble in hydrochloric acid must, for the time being, be left undecided.

6.		7.	
SiO ₂	38.29	Enstatite†	45.96
Al ₂ O ₃	0.64	Other silicates	19.45
FeO	6.50	Nickel iron	19.27
MnO	0.33	Troilite	14.05
CaO	1.08	Schreibersite	0.32
MgO	18.23	Oldhamite	0.18
Fe	26.44	Calcium chloride	0.41
Ni	1.84	Carbon	0.36
Co	0.21		
Mn	0.29		100.00
Ca	0.28		
S	5.26		
P	0.05		
Cl	0.27		
C	0.36		
K ₂ O	0.23		
Na ₂ O	0.85		
	101.15		

* As the result of the complete investigation, St. Mark's is a black, carbonaceous quartz and plagioclase bearing enstatitic chondritic meteorite.—C. K.

† Without regard to possible contained alkalis.

DESCRIPTION OF THE PLATES.

PLATE I.

FIG. 1.—Shows the roughly trapezoidal, and slab-shaped form. The drift-effect developed over the whole principal surface shows clearly only on the more strongly illumined parts. In front, below, is the slightly inclined surface over which the drift-effect is continued uninterruptedly wherever the crust is preserved, so that these two surfaces together form the front of the meteorite. The bright edge on the left has been chipped and covered with a poorly developed secondary crust. The other surface is inclined at almost right angles to the principal surface, and one can see the sharp edges in which these meet.

FIG. 2.—The figured side, almost at right angles to the principal surfaces, has a finely wrinkled crust with no drift-effect. Below, on the right, is seen the place where the wedge-shaped piece has broken off; here, on the two bevelled edges on the right and left, as well as on the two arms stretching over the surface, the stone shows a secondary crust.

PLATE II.

FIG. 1.—The back, uniformly covered with scar-like impressions and wrinkled primary crust; towards the edge traces of drift-effect are to be seen. On the lower edge the secondary crust can be clearly distinguished from the primary crust.

FIG. 2.—Front, with shallow scar-like impressions and drift-effect radiating from the crown uniformly in all directions; on the right half the slight depression of the surface is observable. The darker parts at the edge are covered with primary, the lighter ones with secondary, crust. The drift-effect of the primary crust on the slightly sloping side on the right is in reality much sharper than the photograph shows.

PLATE III.

FIG. 1.—Shows the structure, slightly enlarged.

FIG. 2.—Enstatite chondrule with the confused radiated structure; an example of the chondrules most common in this stone.

FIG. 3.—Vertical section through the crust. The three zones are indicated only in the middle portion bounded by two cracks, and not clearly there. Still, one can see that silicates are sparsely present, and are of smaller dimensions than in the matrix.

FIG. 4.—Two nickel-iron chondrules. Of these, one encloses a small enstatite chondrule, the other isolated enstatites. The chondrule next to the latter is one of the rare ones, which are made up of a few broad enstatite crystals.

FIG. 5.—Chondrule, with diverging radiated structure, with indentations and numerous inclusions of iron pyrites. The section was treated with copper sulphate solution, and the surrounding nickel iron appears, in consequence, in larger connected particles than is actually the case.



Fig. 1.

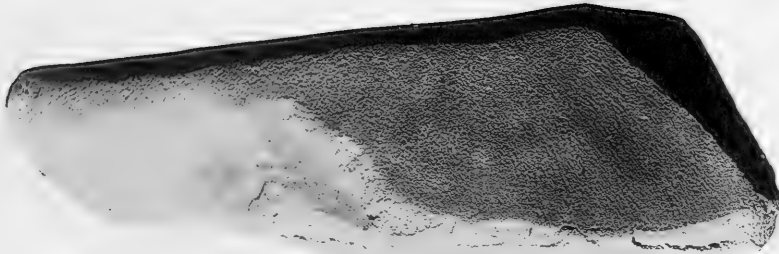


Fig. 2.

St. Marks Meteorite.

Fig. 1 $\frac{4}{5}$ nat. size; Fig. 2 $\frac{3}{8}$ nat. size.

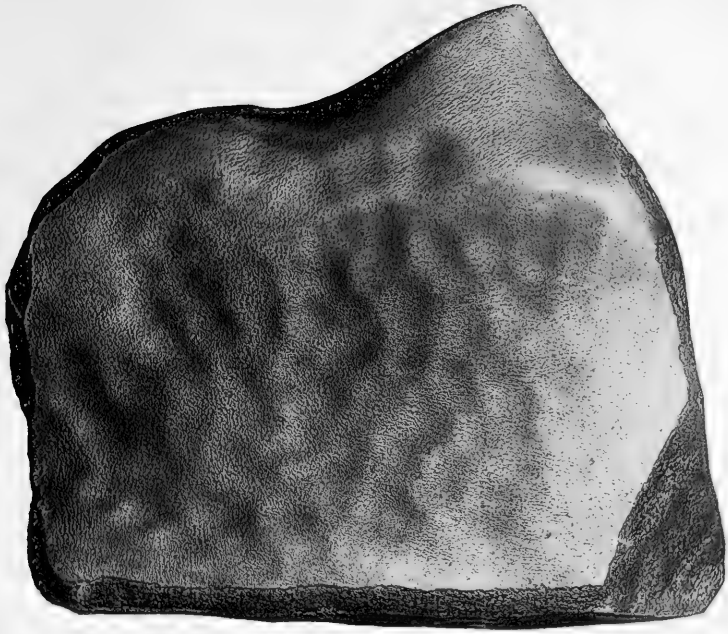


Fig. 1.

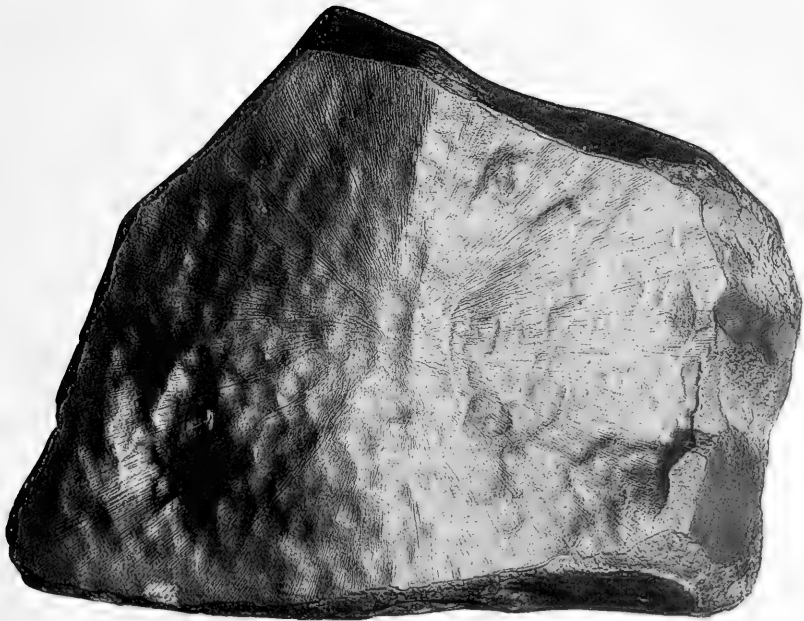


Fig. 2.

St. Marks Meteorite.

Fig. 1 a. 2 $\frac{6}{17}$ nat. size.



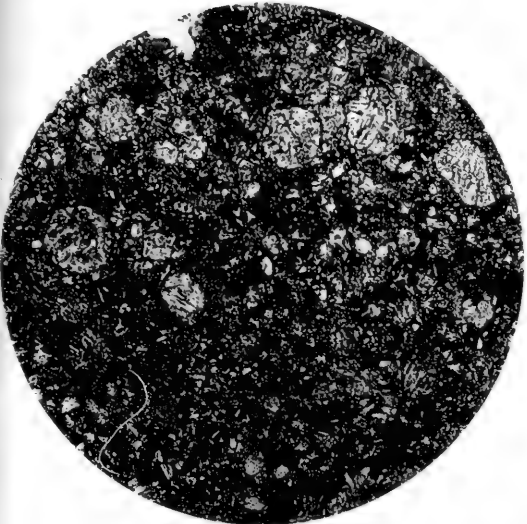


Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.

St. Marks Meteorite.

Fig. 1 a, 3 15 nat. size; Fig. 2 a, 5 42 nat. size; Fig. 4 33 nat. size.



2.—*Descriptions of New Species of Parasitic Hymenoptera chiefly in the Collection of the South African Museum, Cape Town.*

—By P. CAMERON.

FOR the opportunity of describing the following species I am indebted to Mr. L. Péringuey, the Keeper of Insects in the South African Museum. The present paper deals with the *Cynipidæ*, *Evaniidæ*, *Stephanidæ*, *Braconidæ*, and the *Ichneumonidæ*. Very little has been written on the South African species of these groups; hence it is not surprising that the collection contains many new species and some new genera. Thanks to the labours of Tosquinet and others, the *Ichneumonidæ* are better known. I have added the descriptions of a few species in my own collection. These are distinguished by being prefixed by an asterisk. Very few of the species are represented by more than one specimen. Fortunately most of them are females, which afford better specific characters than do the males—in, *e.g.*, the length of the ovipositor.

CYNIPIDÆ.

CYNIPINÆ.

RHOOPHILUS, Mayr.

RHOOPHILUS LOEWI, Mayr.

Die Genera der Gallenbewohnenden Cynipiden, 22.

Cape.

This species was reared from galls on *Rhus lucidum*, L., collected at the Cape by the Naturalists of the Austrian frigate *Novara*.

PYCNOSTIGMUSINÆ, Cam.

PYCNOSTIGMUS, Cam.

Pycnostigmus rostratus, Cam., Ann. and Mag. Nat. Hist., July, 1905, p. 20.

Described from specimens in the Cape Museum Collection. Cape Town.

STEPHANIDÆ.

FOENATOPUS, Smith.

FOENATOPUS ALBOMACULATUS, sp. nov.

Black, the flagellum of antennæ and tarsi testaceous, the base and apex of abdominal petiole narrowly marked with white, a transverse white spot on the base of the third segment; hind femora with a bluntly rounded tooth near the base, a longer, sharp one in the middle, a similar one half-way between it and the apex; two shorter, blunter ones between them in the middle, and a blunter, broader one behind the apical large tooth. Wings short, hyaline, the nervures and stigma black. ♀.

Length, body and ovipositor, 12 mm.

Southern Rhodesia. Sebakwe.

Front closely, regularly reticulated; fore part of vertex opaque, irregularly, weakly reticulated, the hinder opaque, irregularly, transversely, closely striated, with an indistinct longitudinal furrow in the middle; the five spines stout, rufous below. Clypeus and a large spot on the malar space whitish-testaceous; base of mandibles broadly rufous. The third and fourth joints of the antennæ are almost equal in length; the following two are longer. Pronotum not quite twice longer than the width at the apex, irregularly, transversely striated on the narrowed basal part; the dilated apical weakly, irregularly reticulated. Mesonotum weakly, irregularly, transversely reticulated at the base; the sides irregularly, obliquely striated. Scutellum smooth, opaque. Metanotum with round, clearly separated punctures. Metapleuræ very minutely reticulated. Hind coxæ about three times longer than wide, opaque, coarsely aciculated; the base obscurely reticulated, the apex more or less striated.

The radial cellule is open at the apex, the radius becoming faint towards the apex of the wing; its base is thickened; there is a large whitish spot at the base of the stigma; the cubitus is entirely obliterated; the transverse basal is distinct, as is also the transverse median, with which it is interstitial; at the latter is a discoidal cellule, closed at the apex. Mesopleura not separated by a furrow. Abdominal petiole nearly as long as the thorax; the second segment becomes gradually wider towards the apex; the others are broader. The nervures are somewhat as in *Stephanus insignis* as figured by Schletterer (Berl. Ent. Zeit., xxxiii., f. 4, Taf. 1), but with the apical ones fainter, almost obsolete. Behind the head tubercles is a raised, stout, red transverse keel.

Allied to *F. globiceps*, Enderlein, and *F. insignis*, Schlett.

EVANIIDÆ.

EVANIA, Lin.

The species of this genus in the collection may be separated thus:—

- a.* Face and cheeks not striated, thorax sparsely punctured; the spurs black.
1. Legs, abdomen, and stigma fuscous; the alar nervures pale *peringueyi*.
 2. Legs, abdomen, stigma, and nervures black.
 Antennæ black; the face not furrowed laterally; length 6-7 mm. *appendigaster*, L.
 Antennæ for the greater part rufous; the face furrowed laterally *meridionalis*.
- b.* Face and cheeks striated strongly; thorax strongly, closely punctured, the spurs fulvous *fulvispina*.

EVANIA APPENDIGASTER, Lin.

Cape Town. Durban. A cosmopolitan parasite in egg-cases of cockroaches.

EVANIA PERINGUEYI, sp. nov.

Black, the flagellum of antennæ, pleuræ, base of legs and abdomen tinged with fuscous; wings hyaline, very iridescent, the stigma and nervures fuscous, the stigma darker coloured. ♀ and ♂.

Length 7 mm.

Cape Colony. Cape Town.

Antennal scape long, slender, longer than the following two joints united; the pedicle twice longer than wide; the third joint about one-quarter longer than the following. Head shining, minutely punctured, the front below thickly covered with white pubescence. Hind ocelli separated from each other by twice the distance they are from the eyes. Malar space about two-thirds of the length of the antennal scape. Clypeus bordered laterally by deep furrows; its apex rounded. Mandibles broadly piceous at the base. Base of thorax rounded at the sides. Mesonotum thickly covered with white pubescence; sparsely punctured; the furrows complete, narrowed and rounded at the base. Median segment reticulated, the metanotum more closely and rugosely; the apical slope oblique, straight; its apical half with a wide furrow. Metasternal forks stout, straight, obliquely diverging. Abdominal petiole as long as the metanotum. Base of propleuræ smooth, the apex depressed,

stoutly, closely striated. The upper part of the mesopleura smooth; the base with scattered round punctures, the apex depressed, with stout, oblique, clearly separated keels. Metapleura widely reticulated, the reticulations at the base long, narrower, and more irregular. Abdominal petiole smooth. Legs densely pilose; the tibiæ and tarsi not spinose; hind calcaria short, not so long as the third tarsal joint. Second abscissa of radius with a straight, oblique slope towards the middle of the wing, the apex of the radial cellule being thus much widened, the apical abscissa has a straight, slightly oblique slope; the junction of the two forms a narrow rounded angle; the recurrent nervure is roundly curved and is joined to the cubitus by a short, oblique branch, from the lower part of which the cubitus issues; the cubitus beyond this is very faint; the transverse median nervure is received at a distinct distance beyond the transverse basal. There is a stout keel on the lower part of the front.

Comes near to *E. dimidiata*.

EVANIA MERIDIONALIS, sp. nov.

Black, the flagellum of antennæ dark rufous, darker coloured towards the apex; the tibiæ and tarsi piceous; wings clear hyaline, the stigma blackish; the costa fuscous, the nervures whitish testaceous; metasternal process diverging. Face impunctate, pilose; a distinct furrow runs down from the outer side of the antennæ to the mouth, the lower part curving inwardly. Mandibles brownish. Eyes parallel; ocelli separated from the eyes by a slightly greater distance than they are from each other. Malar space large, about two-thirds of the length of the eyes. Mesonotum and scutellum smooth, almost impunctate; parapsidal furrows deep, wide, smooth. Metanotum closely, irregularly reticulated. Propleuræ finely, closely rugose, striated closely at the apex. Mesopleuræ closely reticulated; the upper part coarsely shagreened, smoother, more shining at the apex below. Metapleuræ irregularly shagreened above; the rest reticulated, the reticulations running into striæ at the apex. Abdominal petiole smooth and shining above, the sides opaque. Hind coxæ smooth; the tibiæ not spined; the long spur of the hind tibiæ reaches to slightly beyond the middle of the metatarsus, and is slightly longer than the second tarsal joint. ♀ and ♂.

Length 4 mm.

Cape Colony. Cape Town; Stellenbosch.

The face is longer than usual; the antennal scape longish, slender,

somewhat longer than the following two joints united; the second is fully twice longer than thick; the third three times longer than it and longer than the fourth. Metasternal keel long, narrow, distinct; the forks are short (hardly one-fourth of the length of the keel), stout, obliquely diverging, straight. The second and third abscissæ of the radius form an angle at their junction below; the apical is faint towards the top.

EVANIA FULVOSPINA, sp. nov.

Black, the calcaria fulvous; the tibiæ and tarsi weakly spinose; wings hyaline, the nervures and stigma black. Face coarsely, sharply, obliquely striated; the malar space more finely, irregularly, obliquely striated. Metasternal process short, broad, rounded at the apex, diverging, the basal part broad, hollowed in the centre, finely rugose. Flagellum of antennæ long, longer than the following two joints united; the second joint fully twice longer than thick; the fourth not one-fourth longer than the fifth. Apex of clypeus broadly roundly incised. Malar space slightly longer than the third joint. Base of thorax rounded. Mesonotum coarsely, rugosely punctured, without parapsidal furrows; scutellum and metanotum closely reticulated. Propleuræ coarsely reticulated. Mesopleuræ weakly, irregularly reticulated, smooth at the base in the middle. Median segment closely reticulated all over. Abdominal petiole rugosely punctured, one-third longer than the metanotum. Transverse median and recurrent nervures interstitial. Apical abscissa of radius oblique, slightly curved in front, straight below; it is as long as the second and the half of the first. Palpi testaceous.

The front is keeled down the middle and closely, obliquely striated on either side of the keel; it is thickly covered with white pubescence; the vertex behind the ocelli coarsely reticulated; the temples obscurely punctured-reticulated and thickly covered with white pubescence. Hind coxæ rugosely punctured.

Length 7 mm.

Allied to *E. divergens*, Kohl.

Cape Colony. Cape Town.

GASTERUPTION, Latr.

The females of the species described here may be separated by means of the following table:—

1. Hind tibiæ annulated or marked with white at the base, the fore legs more or less white, the mesonotum largely red.

- a. Occiput distinctly, roundly incised; the collar not much widened towards the apex *spilopus*.
- b. Occiput transverse; the collar widened towards the apex.
Pleuræ maculate with black, temples not much sharply obliquely narrowed; ovipositor as long as the body; length 16–17 mm. *dunbrodyense*, Cam.
Pleuræ immaculate, temples sharply obliquely narrowed; ovipositor distinctly shorter than the body; length 12 mm. *johannis*.
2. Hind tibiæ not annulated with white, the fore legs not marked with white. Mesonotum not, or only slightly marked with red.
- a. Large, 20 mm., robust, the abdomen dilated, broad towards the apex; occiput not transverse; temples rounded, collar not longer than the width at the apex *crassiventre*.
- b. Moderate or small, the abdomen not much dilated at apex; occiput transverse; temples straight, obliquely narrowed; the collar longer than the width at the apex. Large (15 mm.) pleuræ immaculate; anterior ocellus not placed behind the eyes *pulchripenne*.
Small; length 10 mm.; mesopleuræ maculated with rufous; anterior ocellus placed behind the eyes . . . *leptocephalum*.

GASTERUPTION LEPTOCEPHALUM, sp. nov.

Black, a large triangular mark on the fore part of the mesopleuræ and the greater part of the basal three segments of the abdomen, red; legs dark red, the coxæ black; wings hyaline, the stigma dark fuscous, the nervures blackish. ♀.

Length 10 mm.; terebra 5 mm.

Flagellum of antennæ brownish below; the antennæ placed distinctly below the middle of the eyes; the first joint not twice longer than the eyes and as long as the third, which is not much shorter than the fourth. Head more than twice longer than wide; the temples as long as the eyes; occiput almost transverse, front ocellus placed distinctly behind the eyes; the hinder separated from each other by about the same distance as they are from the outer edge of the vertex opposite them. Malar space rufous, distinct, as long as the second antennal joint. Head smooth, bare, except on the sides of the face and front, which are sparsely covered with silvery pile. Collar long, nearly as long as the mesonotum, closely, distinctly transversely punctured. Mesonotum and scutellum more strongly transversely striated, the striæ interlacing; the central lobe not separated from the lateral. Metanotum in the centre weakly irregularly punctured, the sides irregularly transversely striated. Apical slope of metanotum closely, somewhat

strongly rugosely punctured, the centre with a distinct keel reaching from near the base to the apex. Propleuræ closely transversely striated; the meso- irregularly reticulated; the meta- closely rugosely punctured. Front discoidal cellule longish, lanceolate at the apex; the posterior one-fourth shorter than it, narrowed behind. Hind metatarsus shorter than the other joints united.

This species should be readily known from the other South African species of the genus by the long head, well developed behind the eyes, long collar, closely striated mesonotum in one piece, the middle lobe not being separated from the lateral, by the stout keel down the centre of the metanotum, and by the antennæ being placed above the middle of the eyes.

GASTERUPTION PULCHRIPENNE, sp. nov.

Black, the antennæ from the third joint, the four anterior femora, tibiæ and tarsi, the inner and lower side of the hind femora, base of hind tibiæ broadly, and the hind tarsi, the whole of the first and the greater part of the second abdominal segments, red; wings hyaline, the apex of both violaceous, the nervures and stigma black. Base of mandibles broadly red. ♀.

Length 15 mm.; terebra 11 mm.

Cape Colony. Hex River; Worcester Distr.

Head shagreened, the face and clypeus covered with a white down; the clypeus in the middle fringed with golden hair. Malar space rufous, as long as the pedicle of the antennæ. Ocelli placed behind the eyes, the hinder separated from them by about the same distance as they are from each other. Centre of clypeus with a broad shallow incision. Temples long, fully longer than the space between the hinder part of the eyes; roundly, gradually narrowed behind. Occiput transverse. Pronotum with a distinct furrow, bordered by keels down the centre; it is irregularly transversely striated. Mesonotum closely, transversely reticulated; its base broadly rounded; the scutellum more strongly reticulated, depressed. Metanotum irregularly reticulated in the centre, and bordered by a furrow; the sides smooth. Pleuræ closely rugosely punctured and more or less reticulated. Metanotum more strongly reticulated, the centre with a smooth line, which is narrowest above.

GASTERUPTION CRASSIVENTRE, sp. nov.

Black, the sides of mesonotum, and more or less of the pleuræ rufous, the middle of the abdomen largely ferruginous; the oral

region and mandibles rufous; legs dark rufous; the coxæ and trochanters darker coloured; the hind tibiæ black above; wings hyaline, the nervures and stigma blackish. Basal three joints of antennæ black, the rest red. ♀.

Length 20 mm.; terebra 10 mm.

Cape Colony. Hex River; Worcester Distr.

Antennæ as long as the head and thorax united, stout, the scape about twice longer than thick, the second joint about one-third shorter than it; the third about as long as them both united and a little shorter than the fourth. Head smooth; the greater part of it thickly covered with white pubescence. Eyes parallel, not converging above or below; the malar space as long as the antennal scape. Hinder ocelli separated from the eyes by a slightly less distance than they are from each other. Apex of clypeus roundly incised, fringed with golden hair; the lateral regions roundly dilated. Mandibles dark rufous. Pronotum transversely striated, furrowed down the middle. Mesonotum strongly, irregularly punctured, its base broadly rounded, the lateral lobes with a longitudinal furrow down the middle. Scutellum flat, more strongly and deeply punctured than the mesonotum. Metanotum finely, closely rugose; the centre bordered by two crenulated furrows which converge towards the apex. Pro- and mesopleuræ finely rugose; the meta- coarsely irregularly reticulated. Apical slope of metanotum coarsely irregularly transversely reticulated, with a fine keel down the centre. Abdomen stouter, more clavate towards the apex than usual. Hind coxæ about four times longer than wide, finely, closely transversely striated.

The front discoidal cellule is one-third longer than the lower one. Temples longer than the eyes—as long as the basal joint of the fore tarsi; the occiput sharply margined, more sharply on the sides than above. Fore tibiæ broadly pale yellow at the base; the hind tibiæ before the middle are more distinctly curved than usual.

A larger, more robust species than usual, with the abdomen thicker, more clavate towards the apex.

GASTERUPTION JOHANNIS, sp. nov.

Red, the greater part of the vertex, upper half of front, prothorax, the mesonotum, except on the sides and base, scutellum, metanotum and the apical three segments of the abdomen above, black. Legs red, tinged with fuscous; the four anterior tibiæ and tarsi in front

and a broad band (longest below) on the base of the hind tibiæ, whitish yellow. Antennæ black, the flagellum dark fuscous below towards the apex. Wings hyaline, the stigma fuscous, the nervures black. Apex of ovipositor white. ♀.

Length 13 mm.; terebra 8 mm.

Cape Colony. Dunbrody; Uitenhage Distr.

The first joint of antennæ about twice longer than the second and shorter than the third; the second more than twice longer than wide, about half the length of the third, which is shorter than the fourth. Lower part of front, face and clypeus covered with silvery pubescence. Apex of clypeus with a shallow, rounded incision. Hind ocelli separated from each other by about one-fourth more than they are from the eyes; they are placed opposite the end of the latter. Malar space about the length of the second antennal joint. Temples longish, but not so long as the eyes, obliquely narrowed; the occiput transverse. Mandibular teeth black. Collar long, as long as the space between the front ocellus and the end of the vertex. Middle lobe of mesonotum covered closely with round punctures, which are large and deeper at the apex; the lateral lobes sparsely punctured, more thickly at the base. Scutellum more strongly and deeply punctured than the mesonotum. Metanotum sparsely, irregularly punctured. Central depression of propleuræ irregularly punctured, furrowed in the middle, the rest aciculated. Mesopleuræ irregularly reticulated, except for an aciculated triangular space in the middle; the metapleuræ more regularly, distinctly reticulated. Radial cellule wide, the front discoidal cellule small, narrowed at the apex; the posterior is as long as it. Basal joint of hind tarsi nearly as long as the following united. Pleuræ and metanotum densely covered with silvery pile.

Comes near to *G. dunbrodyense*, Cam., and *G. spilopus*, described in this paper; it is smaller, with a shorter ovipositor, blacker antennæ, immaculate pleuræ, and longer metatarsus.

GASTERUPTION MACULICEPS, sp. nov.

Black, the centre of the face, clypeus, mandibles, a large mark on the upper half of the outer orbits, the base of the mesonotum broadly, the greater part of the lateral lobes, propleuræ below the middle furrow, almost the apical half of the mesopleuræ, a streak down the apical half of the metapleuræ, rufous. Basal four or five segments of the abdomen of a darker red, more ferruginous, colour. Legs red, tinged with fuscous, the coxæ brighter in tint, the hind

femora, tibiæ and tarsi darker. Wings hyaline, iridescent, the stigma fuscous, the nervures darker coloured. ♂.

Length 13-14 mm.

Cape Colony. Neighbourhood of Cape Town.

Antennæ black, the scape rufous in the middle below, the flagellum densely covered with a short, stiff pile. The second joint of antennæ not much longer than broad, the third about twice its length and slightly shorter than the fourth. Apex of clypeus with a wide, shallow, rounded incision. Hind ocelli separated from each other by double the distance they are from the eyes; they are flat, closely rugose, except round the hinder and inner edges. Temples roundly narrowed, as long as the eyes. Occiput roundly incised. Collar short, above as long as the third antennal joint. Middle lobe of mesonotum strongly, but not very closely punctured; lateral lobes almost impunctate; a fine furrow down the centre; the outer edge with an irregularly crenulated furrow. Scutellum flat, more strongly and deeply punctured than the mesonotum. Mesonotum punctured round the furrows. Metanotum strongly, transversely reticulated, with a stout keel down the centre. Pro- and base of mesopleuræ strongly aciculated; the rest irregularly reticulated; apex of propleuræ depressed, irregularly crenulated. Hind coxæ nearly four times longer than wide, closely, strongly striated except at the base, which is closely punctured. Hind metatarsus shorter than the other joints united.

This species is closely related to *G. dunbrodyense*, Cam.; possibly it may be its ♂; the occiput is more distinctly incised; viewed from above the collar is shorter; the red on the mesopleuræ is of equal width, not broadly dilated towards the base above as it is in the ♀ of *dunbrodyense*. The males appear to be rare compared with the females. The only other male I have seen is *G. lissocephalus*, Cam.

* *G. lissocephalus*, Cam., has the thorax entirely black, as in *G. pulchripenne*, with which it appears to be closely allied; the abdomen is black except for broad rufous marks on the apices of the second, third, and fourth segments, the base of the third and fourth being also narrowly red; the four anterior femora, tibiæ, and tarsi are testaceous; the hind legs are for the greater part black. The head is broader than long; the temples are as long as the eyes, slightly narrowed; distinctly so at the hinder edge; the occiput is distinctly roundly incised. The hinder ocelli are placed slightly behind the eyes; they are separated from each other by about the same distance as they are from the eyes. Malar space as long as the pedicle of the antennæ. Antennal scape about three times, the pedicle about twice

longer than wide; the third joint is shorter than the fourth. Collar as seen from above, broader than long. Mesonotum strongly rugosely punctured; the sides of the lateral lobes closely finely aciculated-punctured, with a row of large punctures down the middle. Scutellum finely, aciculated punctured. Metanotum with a stout keel down the centre; this keel is bordered by short, clearly separated transverse keels on both sides; the rest is irregularly rugose, more or less longitudinally striated, especially above, and thickly covered with white pubescence. Mandibles rufous, the teeth black. Hind coxæ three times longer than wide, finely transversely striated; the hind legs black; the basal half of the femora and base of metatarsus rufous. Wings hyaline, the stigma testaceous; the posterior discoidal cellule is not much shorter than the upper; the nervures are received at the same distance from the base and apex.

I have *G. lissocephalus* from Cape Colony.

GASTERUPTION SPILOPUS, sp. nov.

Length 16 mm.; terebra 15 mm. ♀.

Cape Colony. Neighbourhood of Cape Town.

This species resembles closely *G. dunbrodyense*, Cam. (Records of the Albany Museum, i. 159), but may be separated by the radial cellule being shorter and wider, by the posterior discoidal cellule being of equal width, whereas in *dunbrodyense* it is distinctly narrowed posteriorly, the head is broader and shorter, the hind ocelli are not so widely separated from each other as regards their separation from the eyes, the first abdominal segment is longer and thinner and the four anterior legs are not whitish yellow in front.

Reddish brown; the front, vertex broadly in the middle, the lower part of the hind orbits, the greater part of the middle lobe of mesonotum, metanotum, a large triangular mark on the propleuræ, basal half of mesosternum, the top and base of metapleuræ, and the fourth and following segments of abdomen, black. Antennæ dark-red, the second, third, and base of fourth joints black. Legs coloured like the body; there is a yellowish-white band on the inner side, near the base of the hind tibiæ. Wings hyaline, iridescent, the stigma dark testaceous, the nervures darker coloured. ♀.

Length 16 mm.; terebra 13 mm.

Head smooth; the apex of the clypeus with a semicircular depression and with a shorter, wider depression on either side. Apex of mandibles black. Head thickly covered with silvery pubescence. Malar space as long as the second antennal joint. First antennal

joint not quite twice the length of the second, which is slightly longer than broad; the third is as long as the basal two united and shorter than the fourth. Hind ocelli separated from each other by less than double the distance they are from the eyes; the hinder are placed in front of the hind edge of the eyes, not beyond them as in *G. dunbrodyense*. Malar space less than the length of the second antennal joint. Base of middle lobe of mesonotum rugose, the middle with clearly separated punctures, the apex more sparsely punctured. Scutellum with some large punctures. Metanotum aciculated, with scattered punctures, the middle bounded by curved furrows; the sides thickly covered with white pubescence. Propleuræ strongly aciculated. Mesopleuræ irregularly reticulated, with a large, triangular, strongly aciculated space at the base, the wide lower end of which is bounded by a furrow. Metapleuræ more regularly reticulated. Apical slope of metanotum irregularly transversely striated, with a smooth line down the middle. Hind coxæ four times longer than wide; the upper side strongly striated, more strongly in the centre than at the base or apex. Anterior discoidal cellule small, narrow, slightly narrowed towards the apex; the apical cellule of the same width. Pronotum short, as long as wide, as seen from above. Hind metatarsus shorter than the other joints united. Apex of sheath of ovipositor cream-coloured.

ALYSIIDÆ.

ALITHA, gen. nov.

First abscissa of radius very short, but distinct, issuing from the centre of the stigma, which is linear, moderately broad. First abscissa of cubitus received shortly below the first transverse cubital nervure, united to the top of the recurrent nervure. Transverse median nervure received distinctly beyond the transverse basal. Radial cellule long, wide, reaching to the apex of the wing; the radius and cubitus in the hind wing short, indicated only on the basal half; at the base in front there is one large closed cellule, bounded anteriorly by a stout nervure (the præbrachial?); at its base behind is a short cellule. Parapsidal furrows distinct. The middle of the base of metanotum bears a longitudinal keel, which curves round to the sides, forming two large smooth aræ, bordering the top of the apical slope, which bears some longitudinal keels. Abdomen smooth, the ovipositor slightly longer than it.

Belongs to the Tribe *Allaini*.

ALITHA LONGIPENNIS, sp. nov.

Black, shining, the legs fuscous, lighter, more testaceous in colour at the base; wings large, longer than the body, hyaline, the stigma and nervures fuscous. ♀.

Length 3 mm.; ovipositor 1 mm.

Cape Colony. Stellenbosch Distr.

Antennæ 25-jointed, the flagellum thickly covered with a short, black, stiff pubescence. Mandibles fuscous, broad, a short, minute sharp, curved tooth at the apex, followed by a round incision. On the lower outer orbits are two stout keels, separated by a furrow. Temples broadly roundly projecting. Occiput roundly incised. Parapsidal furrows united at the apex and prolonged as a short branch, which does not extend to the scutellar depression. The latter is large, deep, and with a narrow keel in the middle. Apex and sides of metanotum strongly aciculated. The centre of the apical part of the first abdominal segment is coarsely aciculated, the sides have a shorter striated band. Third abscissa of radius about one-half longer than the basal two united; the cubitus does not reach the apex of the wings; second cubital cellule of equal width throughout, twice longer than wide; the apices of both wings are closely ciliated.

The abdomen is not quite so long as the thorax; its first segment is slightly longer than the second.

BRACONIDÆ.

EUPHORINÆ.

PERILITUS, Nees.

PERILITUS RUFICOLLIS, sp. nov.

Black, the head, pro- and mesonotum, pleuræ, the third and fourth segments of the abdomen and the legs, red; wings hyaline, the nervures and stigma dark fuscous. ♂.

Length 4–5 mm.

Cape Colony. Stellenbosch Distr.

Antennæ longer than the body; the flagellum covered with white pubescence; the third joint not much shorter than the following two united, the scape as long as it, slender. Parapsidal furrows deep, obscurely crenulated, not reaching to the scutellum. Scutellar depression wide, obliquely sloped at the apex. Metanotum opaque, finely, irregularly reticulated. First abdominal segment finely

closely longitudinally striated; the middle at the apex smooth, brownish. Four hinder tarsi and the apex of hind tibiæ broadly black. Costal and anal nervures distinct, reaching to the apex; the radius as long as the stigma. Mesopleural furrow, wide, moderately deep, irregularly crenulated. Metapleuræ aciculated. First abdominal segment longer than the second; its apical half distinctly dilated.

MACROCENTRINÆ.

MACROCENTRUS, Curt.

MACROCENTRUS CAPENSIS, sp. nov.

Testaceous; the antennæ, ocellar region, metanotum, basal segment of abdomen, the greater part of the second and the apical, black; wings hyaline, the nervures and stigma dark fuscous. ♀.

Length 7 mm.; terebra 6 mm.

Cape Colony. Fraserburg Distr.

Head and thorax closely minutely punctured, sparsely pilose; the metanotum transversely closely rugose. Middle lobe of mesonotum raised, distinctly separated, the furrows deep, obscurely crenulated. The furrow on the centre of propleuræ wide, striated. First abdominal segment clearly longer than the second, obscurely, finely irregularly striated towards the apex; the second finely, closely, regularly striated throughout; the base of the third closely striated. There is no furrow on the mesopleuræ. First abscissa of radius as long as the second; longer than the thickness of the stigma. Transverse median nervure received beyond the transverse basal, almost interstitial; the recurrent nervure received in the first cubital cellule. Calcaria about one-fourth of the length of metatarsus. Second cubital cellule below more than twice longer than the width of the apex; in front about one-fourth longer. Palpi long, their third joint as long as the third antennal joint. Apical joint of hind trochanters apparently denticulate at apex below.

This species agrees fairly well with *Macrocentrus* as now defined.

CHELONINÆ.

MINANGA, gen. nov.

Abdomen not segmented, its apex entire, closely serrate. First cubital and first discoidal cellule separated; transverse median nervure received in discoidal cellule, not interstitial; second cubital cellule twice longer than wide, of equal width throughout. Radius

and cubitus in hind wings extending to the apex; the pobrachial large, much widened at the apex. Parapsidal furrows deep, distinct. Eyes large, bare; malar space not half their length. Lower part of front keeled round the antennæ.

The antennæ are stout, slightly longer than the body, the third joint longer than the fourth. Ovipositor not projecting. There are three stout keels on the base and middle of back of abdomen, the outer commencing at the sides and united to the central by transverse keels. Radial cellule short, its apex much narrowed, through the apical abscissa of the radius curving up to the costa. Cheeks sharply margined. The ocellar region is raised; broadly depressed in the middle behind, the lateral angles forming sharp teeth behind the ocelli, which are placed on the edge of the occiput. The first abscissa of radius is very short.

The ♂ is similar in the main; the ventral segments are produced into a stout projection, clearly separated from the rest in the middle, and composed of at least five segments, ending at the apex in two cerci; the genital valves are large, broad.

The recurrent nervure entering the first cubital cellule places this genus near *Ascogaster* and *Gastrotheca*; the latter may be known by the bidentate apex of the abdomen and interstitial transverse basal nervure; *Ascogaster* by the apex of the abdomen not being serrate, the subtriangular second cubital cellule, and by the absence of a closed cellule at the base of the hind wings. The present genus should be easily known by the bidentate vertex, distinct parapsidal furrows, keeled metanotum and abdomen, serrate apex of abdomen, and by the large cellule in the base of the hind wings.

MINANGA SERRATA, sp. nov.

Rufo-testaceous, the head, except the labrum and palpi, antennæ, prosternum, apex of pronotum in the middle, the apex of the first and the whole of the other joints of the hind tarsi, black; wings fuscous, the costa, stigma, and nervures black. ♀ and ♂.

Length 5-6 mm.

Cape Colony. Stellenbosch Distr.

Middle of face strongly, the sides more weakly punctured, the centre of the face raised, bordered by a deep, moderately wide furrow; the clypeus is more finely and closely punctured. On the front (which is shining) there is a curved keel round each antenna, a less distinct one down the centre, and a short, indistinct one on the sides. Occiput and cheeks margined sharply. Mesonotum and

furrows smooth ; the scutellum sparsely, weakly punctured ; behind it is a triangular, depressed area, bounded by sharp keels ; on the lateral depression are four stout keels. Metanotum strongly punctured ; in the centre are three stout longitudinal keels, the outer of which extend to the centre ; these are united by numerous transverse ones ; on the apical half of the sides are two stout keels, and between are two shorter ones ; the apex on the inner side bears some transverse striæ ; the apical slope above is bounded by a keel, outside the central longitudinal keels. The three central keels on the abdomen are united by a transverse one at the base ; the space between is closely, strongly transversely striated ; the space outside is stoutly, irregularly transversely reticulated ; the middle is irregularly longitudinally reticulated-striated ; the apical third is more closely rugosely punctured-reticulated, with a keel down the apical slope.

TRIGASTROTHERCA, gen. nov.

Abdomen with five segments, the first the smallest, the last about as long as the preceding ; it is distinctly trilobate ; the middle lobe shorter and narrower than the lateral, which are broadly rounded and closely denticulate or serrate ; the first segment is short, with a steep basal slope, keeled on the top ; the suturiform articulation is curved, deep, crenulated ; there are similar, but not curved, furrows on the base of the fourth and fifth segments. Median segment short, the sides with a short tooth above the middle ; the middle of the metanotum with a longitudinal keel. Radial cellule long, narrow, reaching to the apex of the wing. First abscissa of radius slightly shorter than the second ; transverse median nervure interstitial ; the recurrent nervure received in the first cubital cellule ; the second cubital cellule nearly twice longer than wide, of equal width throughout. Eyes bare ; malar space distinct, half the length of the eyes. Anal nervure originates shortly above the middle. Third joint of antennæ distinctly longer than the fourth. Ovipositor longish.

The relationship of this genus is with *Gastrotheca*, which may be readily enough known from it by the abdomen not being segmented and bidentate, and by the much shorter basal abscissa of the radius ; *Phanerotoma* has the abdomen 3-jointed, with the apex entire.

TRIGASTROTHERCA TRILOBATA, sp. nov.

Luteous, the antennæ and ocellar region black ; wings hyaline, the costa and stigma black, the nervures pale. Head closely punctured,

the face in the middle closely, transversely striated. Clypeus raised, clearly separated. Mesonotum closely, finely punctured, the sides and centre dark brown in the middle. Post-scutellum keeled down the middle. Metanotum more closely, but quite as distinctly punctured as the mesonotum. Back of abdomen longitudinally rugosely punctured, most strongly on the apical segments; there is a lateral oblique branch to the furrow on the third and fourth segments. The abdomen is not wider than the thorax; it is as long as it; the last segment is produced downwards below the level of the penultimate. Palpi long. ♀.

Length 5 mm.; terebra 4 mm.

Southern Rhodesia. Sebakwe.

CHELONUS, Jur. sec. Szép.

a. Two white spots on base of abdomen

CHELONUS ERYTHROPUS, sp. nov.

Black, the legs red, the coxæ and tarsi darker coloured, the hind tarsi black; antennal scape red; a white band near the base of the hind coxæ, two large square marks near the base of the abdomen on the sides; wings hyaline, the nervures and stigma black. ♀.

Length 6 mm.

Cape Colony. Neighbourhood of Cape Town.

Head closely, finely rugose; the front depressed, obscurely, finely transversely striated. Mesonotum alutaceous, finely, irregularly longitudinally striated. Scutellum finely, closely, distinctly punctured, the sides distinctly margined and with a crenulated belt below the keel; the notum at the sides of the scutellum smooth, shining, impunctate, bare. Basal half of abdomen finely, irregularly striated; the white spots become slightly obliquely widened on the inner side; the apical part of the abdomen is alutaceous, opaque. The second cubital cellule is obliquely narrowed at the apex; the second transverse cubital nervure is faint, almost obsolete; the basal two abscissæ of the radius are equal in length, thick, the basal thicker than the second; the nervures are black; the costa at the base of the stigma white.

The base of the metanotum is depressed, furrowed; there are eight stout keels on the centre of the furrow, dividing it; down the middle of the metanotum are two keels, forming an area slightly longer than wide. The front legs are tinged with yellow. The sides of the metanotum at the top project into teeth.

*CHELONUS VAALENSIS, sp. nov.

Length nearly 6 mm. ♀

Transvaal.

Very closely related to the above, and identical in colouration is a species in my collection. The two may be distinguished as follows:—

First abscissa of radius distinctly longer than the second; the apical half of the mesonotum distinctly, somewhat strongly reticulated; the middle with a keel extending from the apex to near the base; the abdominal spots rounded gradually on the inner side. *vaalensis*.

First abscissa of radius not distinctly longer than the second; the apical half of mesonotum not reticulated, without a keel down the middle, the abdominal spots obliquely widened towards the apex. *erythropus*.

The mesonotum at the sides of the basal half of the scutellum is punctured, smooth at the apex. Metanotum rugosely alutaceous; the two central keels are straight, parallel, forming an area which is about one-fourth longer than wide. Abdomen to the end of the spots strongly reticulated; the apex more finely, irregularly reticulated-striated, the apex alutaceous. Legs red; the tarsi blackish; the hind tibiæ dark rufous, largely tinged with black, especially on the inner side, except at the base, and more widely at the apex; near the base is a broad white line. At the base of the scutellum are six stout keels, forming five deep areae. Scutellar keel not prominent. Prostigma thick, whitish.

b. One large curved white mark on the base of the abdomen.

CHELONUS CURVIMACULATUS, sp. nov.

Black, a broad yellowish-white band on the base of the abdomen, its apex roundly dilated, its base roundly, broadly incised, the lateral basal continuation narrow; the apices of the four anterior femora broadly, their tibiæ and tarsi; a broad band on the hinder tibiæ near the middle and the tarsi, except at the apex, yellow, tinged with testaceous. Wings hyaline, the costa and nervures pale testaceous; the large stigma black, fuscous behind. ♀.

Length 3 mm.

Cape Colony. Cape Town.

Alutaceous, covered with a short white pile. Base of mesonotum with a short keel down the middle; its apex broadly depressed in the middle, irregularly longitudinally striated, the striæ irregularly curved, forming almost reticulations. Metanotum coarsely rugosely

punctured; the sides, shortly above the middle, armed with a broad, stout, rounded tooth. Abdomen alutaceous, irregularly longitudinally striated, the striæ becoming weaker towards the apex. Antennæ 16-jointed; the basal joints of the flagellum elongated. Radial cellule short, the radius not reaching to the middle; in front it is as long as the stigma; the second transverse cubital nervure is faint, almost obliterated; the cubitus is faint at the base of the second cubital cellule. Tegulæ black. Frontal fovea opaque. Apex of abdomen not grooved; the ovipositor as long, or slightly longer than the longer hind calcaria. In one specimen the antennal scape is red below. The apex of the metanotum has a steep, oblique slope, and is somewhat strongly, irregularly striated; the striæ are twisted.

The broad white, undivided band on the base of the abdomen distinguishes this species from the two others here described.

GASTROTHERCA, Guér.

GASTROTHERCA BILOBATA, sp. nov.

Rufo-testaceous, the head paler, the abdomen darker than the thorax; the antennæ, a square mark on the vertex, enclosing the ocelli, the occiput, except narrowly on the sides, a large mark on the apical two-thirds of the sides of the mesonotum, prosternum, mesosternum, a large mark on the base of the abdomen, the base becoming gradually wider, the apex bifurcating into two stout, diverging branches black; beyond this is a smaller irregular mark, irregularly dilated laterally at the apex. Wings hyaline, slightly tinged with yellowish at the base; the nervures to the transverse median testaceous, the apical, costa and stigma black. ♀.

Length 5 mm.

Cape Colony. Neighbourhood of Cape Town.

Antennæ longer than the body; the scape four times longer than wide, covered with white pubescence; the first joint of flagellum slightly longer than the second. Head closely, finely punctured; the depressed front more distinctly than the rest. Mesonotum closely pubescent; the furrows distinct; there is a furrow down the middle of the central lobe. Scutellum shining, impunctate; its sides and apex not margined. Centre of metanotum broadly roundly dilated, the sides also slightly dilated, the apex being therefore trilobate; the middle irregularly striolate, the rest shagreened. Base of abdomen closely longitudinally striolate, the apex more strongly striolate-reticulate; the teeth are about three times longer

than their width at the base; the sides outside them closely serrate, between the edge is rough. Basal abscissa of radius half the length of the second; as long as the transverse cubital nervures.

This species may be known from what I make out to be the wide-ranging *G. furcata*, Guér., as follows:—

Abdomen immaculate, the apical teeth long, half the length of the space between them, basal abscissa of radius one-third of the length of the second, shorter than the transverse cubital nervure; the apex of abdomen not much more strongly punctured than the base	<i>furcata</i> , Guér.
Abdomen with a large, bifurcated black mark; its apical teeth short, about one-fourth of the length of the space between, basal abscissa of radius nearly one-half of the length of the second and not much shorter than the transverse cubital; the apex of the abdomen much more strongly punctured-reticulated than the base.. .. .	<i>bilobata</i> , Cam.

ESENGA, gen. nov.

Abdomen with six visible segments; the second very large—as large as the thorax; the first about one-fourth of its length; the apical small; the first excavated at the base, its top surrounded by a border. The third and fourth joints of antennæ about equal in length. Occiput not margined. Parapsidal furrows distinct; the middle lobe furrowed down the middle. Transverse median nervure interstitial; recurrent nervure received in the first cubital cellule; the second cubital cellule square, oblique; the first abscissa of the radius minute; anal nervure almost interstitial; second discoidal cellule closed at the apex. Hypopygium projecting, cultriform; sheaths of ovipositor short.

It is possible that the very large second abdominal segment may represent in reality two, for, behind its middle, there is an indication of a suture.

The affinities of this genus are with *Gastrotheca* and *Trigastrotheca*; from both it may be known by the apex of the abdomen being neither toothed nor lobate; the latter has not the second segment larger than all the others united; the first abscissa of the radius is not minute and the anal nervure is not interstitial; the like difference in neuration separates it from *Gastrotheca*.

* ESENGA OVATA, sp. nov.

Luteous, the pleuræ of a paler yellow colour, the antennæ, front, vertex, and occiput broadly black; wings hyaline, the costa and

stigma in front black; the apex of stigma and nervures yellowish; the apical nervures darker coloured. ♀.

Length 5 mm.

Cape.

Head clearly narrower than the thorax; it and the thorax smooth and shining; the abdomen longer than the head and thorax united, gradually roundly narrowed towards the apex; the basal two segments are closely, somewhat strongly longitudinally punctured; the apical are smooth. The head and thorax are broad, longish ovate; the thorax is much more distinctly narrowed at the base than at the apex. In the middle of what I have called the second abdominal segment there is, especially at the sides, the appearance of a suture, so that it may really be two segments. Antennæ not much longer than the abdomen, stout; the scape about twice longer than wide; the third longer than the fourth.

AGATHIDINÆ.

AGATHIS, Latr.

? *AGATHIS CAPENSIS*, sp. nov.

Rufous, antennæ, ocellar region, the front, basal half of middle lobe of mesonotum; a spot on the base of the lateral, one on the apex close to the wings, metanotum to near the middle, the greater part of the basal three segments of the abdomen and the hind tarsi from near the base, black; wings hyaline; the costa, stigma, and nervures black. ♀.

Length 4; ovipositor 3-4 mm.

Cape Colony. Cape Town.

Smooth and shining; the metanotum finely, closely punctured. Basal two segments of abdomen closely, finely punctured, the second with a distinct curved transverse furrow shortly beyond the middle; the third with a finer one behind the middle. The first abdominal segment is more than twice longer than it is wide at the base, about one-third longer than its width at the apex; the second segment is furrowed laterally at the base. Radial cellule short, narrow, the radius quite close to the costa; there is no areolet; the transverse median nervure interstitial. Mesonotum trilobate. Apex of scutellum keeled. A stout keel between the antennæ. Apices of all the abdominal segments transverse.

Except that there is no areolet this species agrees fairly well with *Agathis*; owing to the manner in which it is gummed down I am unable to examine the head and fore legs properly.

DISOPHRYS, Först.

DISOPHRYS TESTACEA, sp. nov.

Testaceous, the front, vertex, upper part of occiput, sides of face broadly to near the clypeus, upper third of malar space on the inner side black, the black prolonged obliquely downwards on the outer side, the apex of the second and the whole of the following abdominal segments and the hind tarsi, black. Wings hyaline, tinged with yellow; the radial, forepart of cubital cellules, and the first discoidal cellules infuscated; the stigma and nervures yellow; the costa and forepart of the transverse basal nervures black. ♂.

Length 14–15 mm.

Cape Colony. East London.

Face punctured, thickly covered with grey pile; the clypeus smooth. The antennal keels and the part surrounding them red. The lateral keels reach to the raised ocellar region. Parapsidal furrows deep, smooth. Keel on apex of scutellum distinct, raised on the outer edge. Post-scutellum indicated by a curved keel above; below it are three keels, of which the central runs to the base of the metanotal depression. On the apical slope of the metanotum are two keels, which unite at the top, forming there a sharp angle; then diverge obliquely and roundly outwardly, then converge slightly, straight and obliquely towards the apex of the segment; on the narrowed top part are two indistinct keels above, below two longer distinct ones; from the lower of these two keels run to the apex, forming a triangular area, outside of which are two keels, the inner running from the top to the middle, the lower from the middle to the bottom. The outer edge of the metanotum is bounded by a stout keel; inside the spiracles is a less distinct one running to a transverse keel bordering the top of the apical slope, forming an area of equal width, but longer than wide and transverse above and below. Abdomen smooth. Areolet large, wider behind than before, through the second transverse cubital nervure sloping towards the cubitus; it is dilated shortly below the middle. Malar space as long as the eyes. Palpi testaceous, thickly covered with white pubescence.

*DISOPHRYS RUFa, sp. nov.

Rufous, front, vertex, occiput, sides of face broadly, upper two-thirds of malar space, and the apex of the first joint of the hind tarsi, black; wings fuscous, the greater part of the first two cubital cellules, a band, longer than broad, reaching close to the apex of the wings, and one on either side of the transverse median and the

transverse basal nervures, hyaline; stigma pale orange, the costa and stigma black. ♂.

Length 13 mm.

Transvaal.

Smooth, shining, the head and thorax covered with a close pubescence. Mandibles black at apex. Palpi rufous, thickly covered with white pubescence. Keel on apex of scutellum not very strong, rounded. Base of metanotum obliquely depressed; from the centre of the apical slope two keels run obliquely towards the sides of the apex forming a triangular area; on the apical half is a stout longitudinal keel; from the apex of the upper third of the sides a stout keel runs obliquely to below the middle of the central keel; below this are two similar keels, joining the apex of the area, not the central keel. Stigmal region bounded laterally by two curved keels; it is irregularly reticulated, the base less strongly than the apex. Abdomen longish ovate, broad, as long as the thorax, smooth; the suture separating the first and second abdominal segments is deep, clearly defined on either side of the middle. Areolet wider behind than in front, the second transverse cubital nervure sloping from the radius to the cubitus; its nervures, and the base of the radius, are yellow.

The malar space is as long as the eyes; there are two stout reddish keels between the antennæ; the part above them is also red; the face is not much narrowed below; the ocellar region is distinctly raised; the keels reach to the raised part only. Parapsidal furrows deep, smooth, except for some, not very distinct, keels beyond the middle. The transverse median and lower part of the transverse basal nervures are rufous.

CARDIOCHILINÆ.

SCHONLANDELLA, Csm.

SCHONLANDELLA TESTACEA, sp. nov.

Pale testaceous, the antennæ, greater part of front and vertex (the black on the latter obliquely narrowed behind), three marks on mesonotum, the lateral longer and narrower, and the mesosternum, black. Wings not very clear hyaline, the nervures and stigma black. ♂.

Length 4 mm.

Southern Rhodesia. Sebakwe.

Smooth, densely covered with white pubescence. Metanotum distinctly areolated; the areola large, 4-angled, narrowed to a point at

the base and apex; the lateral angles close to the base; from them the area becomes gradually narrowed towards the apex, the lateral basal areae large, transversely triangular, the narrowed end on the inner side; the lateral apical areae are large, narrowed to a sharp point above; the surface is obscurely transversely striated. Trophi testaceous, covered with white hair. Hind tarsi black, the long spur of the hind tibiae two-thirds of the length of the metatarsus.

SCHÖNLANDELLA FULVIVENTRIS, sp. nov.

Black, the face, orbits, greater part of prothorax, scutellum, legs, except the coxæ and basal joint of trochanters and hind tarsi, and ventral surface, rufo-testaceous; maxillæ black, the palpi pale testaceous; wings hyaline, iridescent, costa, stigma, and nervures black; the apical abscissa of radius pale. ♀.

Length 5 mm.

Cape Colony. Van Wyk's Vlei; Carnarvon Distr.

Head and thorax covered with white pubescence. Head, pro-, and mesothorax smooth, impunctate; the median segment irregularly rugose; the central area large, reaching from near the base to the apex; sharply narrowed towards the base and apex; the widest part is above the middle; it is the only area.

BRACONINÆ.

GEN. *IPHIAULAX*, Foer.

THE GROUP OF *I. athiopicus*.

Black; the wings yellowish hyaline, smoky at the apex; the oral region, palpi, and four front legs pale yellow; the basal 2-4 segments of the abdomen closely striated; area on second segment small, triangular, smooth or striated.

This group is somewhat diverse, the main agreement being in coloration; in form and structure the species are much more distinct.

The black species, with yellowish-hyaline wings, infuscated at the apex, known to me, may be separated thus:—

a. Abdomen longitudinally striated.

Ovipositor longer than the body; the basal five abdominal segments closely longitudinally striated; oral region, mandibles, and palpi yellowish *athiopicus*, Cam.

Ovipositor shorter than the body; the basal two abdominal segments sparsely striated; oral region and mandibles black, the apical joint of maxillary palpi yellow *xanthocarpus*, Cam.

b. Abdomen not striated.

Ovipositor shorter than the abdomen; plate on second abdominal segment not much longer than its width at the base, its apex not prolonged into a keel; malar space, upper and lower side of propleuræ marked with yellow; sutures not crenulated *ornaticollis*, Cam.

Ovipositor longer than the abdomen; plate on second abdominal segment much longer than its width at the base, the apex prolonged into a keel; head and thorax immaculate; abdominal sutures crenulated *xanthopterus*, Cam.

Bracon luctuosus, Bé. (Hymén., iv., 414) is a closely allied species to *I. xanthopterus*, but appears, so far as can be made out from the description, to differ in several essential points.

IPHIAULAX ÆTHIOPICUS, Cam.

Records of the Albany Museum, i., 153.

Houts Bay, nr. Cape Town, (December). Dunbrody (Rev. J. A. O'Neil).

IPHIAULAX XANTHOPTERUS, sp. nov.

Black, smooth and shining; the suturiform articulation distinct, crenulated; the transverse furrow on the base of the fourth segment smooth; the area on the base of the second segment distinctly raised, triangular, clearly longer than its width at the base, reaching to shortly beyond the middle of the segment, its narrowed apical part bordered by furrows. Wings yellowish hyaline to near the apex of the stigma, black-fuscous beyond; apical abscissa of radius not quite so long as the basal two united. ♀.

Length 10 mm.; terebra 6 mm.

Cape Colony. King William's Town Distr.

Malar space as long as the antennal scape, narrowly furrowed. Antennal scape shining, gradually widened towards the apex, which projects into a tooth below, where it is covered with long black hair; it is as long as the following three joints united. Face thickly covered with longish black hair. Abdomen longish ovate, as long as the head and thorax united.

IPHIAULAX XANTHOCARPUS, sp. nov.

Black, shining, smooth, except the basal two-thirds of the second segment, which are strongly, but not closely longitudinally striated; the suturiform articulation and the furrow on the fourth and fifth segments strongly crenulated. Wings yellowish hyaline to near the apex of the stigma; blackish-fuscous beyond. Face, oral region and palpi thickly covered with white pubescence. Palpi black,

except the apical joint of the maxillary, which is yellow. Antennal scape covered with black hair, slightly longer than the following two joints united; the third shortly, but distinctly longer than the fourth. Apical two-thirds of the fore tibiæ and the basal four joints of the tarsi yellowish in front. There is a stout keel down the middle of the first abdominal segment; its apex is bordered by a deep furrow; at the base are two or three longitudinal striæ. Apical abscissa of radius not quite so long as the basal two united. ♀.

Length 8 mm.; terebra 4 mm.

Cape Colony. Port Elizabeth.

THE GROUP OF *I. havilandi*.

Black; the abdomen longish, more or less red, the basal segments closely, strongly striated; the area on second segment not clearly defined, smooth, bordered by striæ; wings uniformly black; the base of stigma ochraceous.

Mouth region and thorax marked with rufous; the third and fourth segments striated; the striæ on second segment oblique; ovipositor longer than the body *havilandi*.
 Head and thorax entirely black; the third and fourth segments smooth; the striæ on second segment longitudinal; ovipositor shorter than the body.. .. . *longicoxis*.

IPHIAULAX LONGICOXIS, sp. nov.

Black, the abdomen rufous, the basal two segments tinged with fuscous, closely striated, the base of the area on second segment smooth; the suturiform articulation, the furrows on the base and apex of the third and fourth crenulated; the basal furrows roundly curved; the curve on the third much longer than that on the fourth. Antennal scape about three times longer than wide, covered with black hair. Parapsidal furrows distinct. Palpi black. Third abscissa of radius distinctly longer than the basal two united. Hind coxæ smooth, three times longer than wide. Wings dark fuscous; the base of stigma ochraceous; the recurrent nervure received in first cubital cellule; the third abscissa of radius longer than the other two united. ♀.

Apart from the other differences the much shorter ovipositor distinguishes this species from *I. Havilandi*.

Length 15 mm.; ovipositor 12 mm.

Natal. Estcourt.

IPHIAULAX HAVILANDI, sp. nov.

Black, the lower part of the propleuræ, the mesopleuræ except the corner above, the transverse furrow below the tegulæ, mesosternum,

sides and apex of scutellum, a short narrow line on the side of the mesonotum in front of it, a large irregular mark on the centre of the metanotum, the middle of the suturiform articulation, an irregular spot, widest behind, on the centre of the third abdominal segment and the whole of the others, red. Oral region, base of mandibles and malar space, reddish yellow. Wings dark fuscous, tinged with violaceous, the basal third of stigma ochraceous; an oblique hyaline cloud in the first cubital cellule, continued into the discoidal. ♀.

Length 12 mm.; terebra 20 mm.

Natal; Estcourt. Transvaal; Potchefstroom.

Face coarsely rugosely-reticulated, covered with long black hair; the rest of the head and thorax smooth and shining. Antennal scape shining, sparsely covered with long black hair, as long as the second and third joints united; the latter are equal in length. First abdominal segment smooth, the apex closely, longitudinally striated; the area on second segment large, triangular, longer than the width of the base, reaching to the middle of the segment, closely longitudinally striated; the space between it and the outer keel stoutly, obliquely striated on the sides, at the apex longitudinally striated; the outer part with some oblique stout striæ running from the longitudinal keels; the second and third segments with the transverse furrows closely striated. Hypopygium cultriform, projecting beyond the apical segments. Apical abscissa of radius shortly but distinctly longer than the basal two united; the second cubital cellule about three times longer than wide. Calcaria testaceous; tarsal spines black. Legs moderately covered with black hair; the hind coxæ about three times longer than wide. The size of the rufous markings on the thorax varies.

THE GROUP OF *I. durbanensis*.

Black, the mesonotum, scutellum, and pleuræ marked with blood-red marks; wings black, with ochraceous stigma; abdomen strongly striated; the keel on second segment reaching to the apex, striated and triangularly dilated at the base.

IPHIAULAX DURBANENSIS, sp. nov.

Deep black, shining, a broad line on the sides of the mesonotum at the tegulæ, scutellum and post-scutellum, the mesopleuræ, except for an oblique mark on the upper basal edge, and the mesosternum bright, sealing-wax red; wings uniformly dark fuscous, except for a small hyaline cloud at the base of the first cubital cellule; basal two-thirds of the stigma chrome-yellow. ♀.

Length 12 mm.; terebra 7 mm.

Natal. Durban.

Basal five segments of abdomen strongly, sharply longitudinally striated; the furrows on the sides of first segment wide and smooth, except at the base, where, on the inner side, there are some short striæ; the centre has a stout keel, with some irregular transverse keels on either side; the second segment with a stout keel reaching to the apex; the base longish, triangularly dilated and longitudinally striated; the lateral depression somewhat pyriform; the wide part at the apex, which is rounded; on the inner side it is bordered by a stout curved keel; it is almost smooth at the base, the rest irregularly striated; on the central part are two oblique keels running from the inner side of the base to the apex, where there are, on the inner side, two or three keels. Sutureform articulation wide, deep, irregularly crenulated; the following two furrows are wide, stoutly, irregularly crenulated. The second cubital cellule is about two and a half times longer than wide; the third abscissa of the radius is slightly but distinctly longer than the following two united. Head thickly, the thorax above sparsely covered with long black hair. Face rugose, the face transversely striated. Palpi black.

THE GROUP OF *I. levissimus*.

Rufous; the top of the head and marks on mesonotum black; the wings dark fuscous; the base and middle of both with hyaline clouds. Abdomen longish, smooth, shining, impunctate; the keel on second segment long, gradually narrowed to a projecting point at the apex. There are no transverse furrows on the third and fourth segments; but distinct oblique lateral ones at the base; the sutureform articulation and its lateral branch narrow, smooth.

IPHIAULAX LEVISSIMUS, sp. nov.

Dark rufo-testaceous; the antennæ, front, vertex, a line on the middle lobe of mesonotum, narrowed towards the apex, twice longer than the width at the base, a line on the lateral lobes, extending from the base to the apex, an irregularly oval mark on the upper part of the apex of the mesonotum, mesosternum and the apex of the hind tibiæ, black. Wings fuscous, the base to the stigma largely, the first cubital cellule and a cloud in front of the recurrent nervure, yellowish hyaline, the stigma to near the apex ochraceous. ♀.

Length 15 mm.; terebra 11 mm.

Cape Colony. Hex River; Worcester Distr. Also in Col. Cameron.

Face strongly punctured, sparsely covered with longish black hair. Malar furrow distinct. Palpi dark testaceous. Thorax smooth; the middle lobe of mesonotum not much raised; it is flatter than the scutellum. Median segment smooth. Abdomen with the furrows smooth, neither punctured, nor striated; the furrows on the basal

three segments deep, wide ; the keel on the second reaches to the base of the apical fourth, becoming gradually narrowed from the base to the apex.

A specimen in my collection is only 12 mm. in length, and the hyaline clouds on both wings are indistinct, being suffused with fuscous.

THE GROUP OF *I. basimacula*.

Black ; the abdomen red, short, broad, closely rugosely punctured, with deep, wide striated furrows on all the segments ; there is no distinct area on the base of the second segment.

IPHIAULAX BASIMACULA, Cam.

Records of the Albany Museum, i., 150.

Dunbrody. (Rev. J. A. O'Neil.)

THE GROUP OF *Iphiaulax meridionalis*.

Red ; the head, marks on thorax, and legs black ; the wings dark fuscous, the costa and stigma orange. The second segment of the abdomen rugose or striated.

The black legs distinguishes this group from the *pictus* section, the reddish thorax from the *basimacula* one.

IPHIAULAX MERIDIONALIS, sp. nov.

Red ; the antennæ, head, mandibles, palpi, pro- and mesosternum, three large marks of almost equal length, the basal wider, roundly narrowed towards the apex on mesonotum, a mark on the mesopleuræ, tegulæ and legs, black. Wings dark fuscous, the stigma red. ♀.

Length 11 mm. ; terebra 8 mm.

Cape Colony. Worcester Distr.

Head and thorax smooth ; the abdomen with the centre of the first and the second strongly, longitudinally striated ; the basal two transverse furrows wide, deep, strongly crenulated ; the other basal and apical segments smooth. Antennal scape of equal width, three times longer than wide. Temples nearly as long as the eyes, rounded behind. Apical abscissa of radius longer than the basal two united ; the recurrent nervure is received in the apex of the first cubital cellule, which has an oblique narrow hyaline cloud.

There is no defined area or keel on the base of the second segment, which is raised somewhat broadly and striated closely longitudinally ; the lateral raised tubercles are much wider than long, becoming

narrowed from the outer to the inner side; the oblique depression bears some stout keels; the second and third segments are blackish in the middle.

* *IPHIAULAX MEDIATOR*, sp. nov.

Length 7 mm. ; terebra 2 mm.

Transvaal.

This species is identical in colouration with the foregoing; the two may be (apart from the great difference in size) separated thus:—

Ovipositor longer than the abdomen; the keel on second abdominal segment not clearly separated; recurrent nervure not interstitial *meridionalis*.
 Ovipositor not half the length of the abdomen, the area on second abdominal segment distinct, longish, formed of three stout striæ, the recurrent nervure interstitial *mediator*.

The sides of the petiole at the apex, the second segment and the base of the third, including the suturiform articulation, are black; the basal two-thirds of the stigma are pale orange, face thickly covered with long black hair; there are two irregular orange spots on the lower part of the outer orbits. Face opaque, shagreened. Hair on black palpi pale.

THE GROUP OF *I. coccineomaculatus*, Cam.

This group differs from the *pictus* section in having the abdomen longer and narrower, clearly longer than the head and thorax united and not much wider than the latter; and the head and body, instead of being red, slightly spotted with black, is black spotted with vermilion. Only the basal two segments of the abdomen are striated, the part beyond the suturiform articulation being smooth; the furrows are crenulated, but not strongly. Wings smoky, with vermilion costa and stigma.

IPHIAULAX COCCINEOMACULATUS, sp. nov.

Black, the oral region, a short line on the inner orbits, opposite the antennæ, a short, narrower one on the outer side of the malar space along the eyes, pronotum and propleuræ, the apex of the middle lobe of the mesonotum, tegulæ, scutellums, the space at their sides, a narrow line on the base of the metanotum, the base of mesopleuræ, its lower part irregularly to beyond the middle, the greater part of the first and the sides of the others irregularly, scarlet-red; legs scarlet-red; the hind tarsi fuscous. Wings smoky fuscous, darker towards the apex; the costal cellule, the first cubital cellule for the greater part and a small cloud below its apex, hyaline,

slightly suffused with fuscous; the base, and the basal half of the hind wings in front hyaline. ♀.

Length 11 mm.; terebra $2\frac{1}{2}$ mm.

Cape Colony. Hex River; Worcester Distr.

Head smooth, face sparsely covered with black hair; palpi black, the apical three joints of the maxillary rufous. Centre of middle lobe of first abdominal segment stoutly longitudinally striated; the second segment and the wide suturiform articulation stoutly longitudinally striated; the basal furrows on the third and fourth segments are widely crenulated, those on their apex smooth. On the middle of the second segment is a distinct keel, which reaches to the apex; its apex narrowly dilated and striated: the lateral depressions wide, shallow. Hind coxæ broadly black at the base above. Recurrent nervure interstitial; the costa and stigma scarlet-red; the other nervures black.

THE GROUP OF *I. pictus*, Bé.

Vermilion-red, either entirely or with the head and thorax spotted with black; the abdomen ovate, not much longer than the thorax, the basal two to four segments closely, strongly longitudinally striated; the area on base of second segment not clearly defined, only indicated by stronger striæ. Wings dark fuscous, with or without some small hyaline clouds; the costa and stigma bright vermilion-red.

This is an easily recognised group from the bright red colour of the entire body. The limit of the species is not well defined from the great variation in the amount of black on the head, thorax, and abdomen. The bright vermilion colour with some of the forms shows an approach to red, testaceous or ferruginous. With the material at my command at present I am unable to define properly the limits of some of the species. The sculpture of the abdomen appears to vary in its strength. Whether the group consists of numerous species or of one protean species of great variability is a point in regard to which I can come to no definite conclusion from the somewhat limited material at my disposal.

IPHIAULAX PICTUS, Bé.

In the collection are a good many specimens which agree with the description of *I. pictus*, Bé. (Hymén., iv., 426), of *incisus*, Bé. (*l.c.* 427), *I. signatus*, Bé. (*l.c.* 430), and with *wahlbergi*, Holm. In the typical *pictus* the head is black, except round the mouth; others have the face without black, the upper part of the head black; and still others have only the middle of the front and vertex black.

The mesothorax may be entirely black, or with three separated marks; the pleuræ may be immaculate, with one or two small dots, or largely marked with black, especially behind. The metanotum may be immaculate, or slightly or largely marked with black. In one ♂ the metanotum is black except for a narrow line in the centre, the metapleuræ being entirely black; in most examples the mesosternum is black. In one or two specimens (probably *coccineus*, Bé.) the thorax is entirely immaculate. The abdomen may be entirely longitudinally striated, or the basal three segments only; the former character being that of *wahlbergi*; the latter of *pictus*. As a matter of fact so much variation is shown in the strength of the striation that it does not appear to afford a trustworthy specific character; so, too, there may be a distinct area on the base of the second abdominal segment formed of raised striæ, or there may be none. In the black-headed specimens there is a narrow, more or less interrupted rufous band round the eyes.

The species is in the collection from Rhodesia to the Cape.

* IPHIAULAX VARIPALPIS, sp. nov.

Vermilion-red; the antennæ, apex of mandibles, of maxillæ, labial palpi, sides of prosternum, the middle of front, vertex and occiput broadly, the mark obliquely narrowed from the ocelli to the end of the vertex, that on the occiput narrow above, gradually widened below. Wings dark fuscous, the costa and stigma red; the usual hyaline cloud in the first cubital cellule and below it outside the recurrent nervure. Maxillary palpi pale testaceous-red. First abdominal segment with a long, stout central keel. ♂.

Length 10–11 mm.

Transvaal.

Face and oral region covered with black hair. Apical slope of clypeus yellow. Centre of first and the second abdominal segment strongly closely striated, the third not so strongly and more irregularly striated; the fourth is obscurely shagreened at the base, the others smooth, shining; the lateral basal angles of the second segment are smooth, broader than long, not much widened on the outer side; there is no area on the base. Suturiform articulation wide, deep, crenulated; the second furrow is narrowed, almost interrupted in the middle; there is a similar furrow on the fourth segment. There are narrow, crenulated furrows on the apices of the third, fourth, and fifth segments. The transverse furrows do not bifurcate distinctly at the sides. Lateral basal area of the sides

of the second abdominal segment not much widened on outer side, where they are bordered by some stout striæ which extend from the area to the outer edge, without a furrow between.

This species is closely related to *I. rhodesianus*; the two may be separated thus:—

The black mark on the vertex not narrowed behind, that on occiput wide above; lateral area on base of second abdominal segment triangular, gradually widened from the inner to the outer side; suturiform articulation bifurcating at the side, the two branches enclosing a triangular raised area; labial palpi testaceous	<i>rhodesianus.</i>
The black mark on the vertex narrowed behind, on the occiput narrowed above; lateral area on base of second abdominal segment not much dilated on the outer side, not triangular; suturiform articulation not distinctly bifurcating at the sides; the basal branch smooth, indistinct, the raised area not very clearly defined; labial palpi black	<i>varipalpis.</i>

The middle segments of the abdomen are blackish.

What I make out to be *I. coccineus*, Bé., has similarly coloured palpi and body colouration; it has the mark on the vertex somewhat narrowed behind but not to a point, that on the occiput is not narrowed above; the smooth, lateral raised area on the sides of the second segment is more gradually, distinctly widened from the inner to the outer side, the centre of the first abdominal segment has only four keels of equal strength; there not being a longer and stouter central keel as in *I. varipalpis*.

* *IPHIAULAX TANYCERAS*, sp. nov.

Bright vermilion-red; the antennæ, head, greater part of mesonotum, mesosternum, hinder part of mesopleuræ black; wings dark fuscous, the costa and stigma red. Antennæ long, almost twice the length of the body; the scape twice longer than wide, covered below with pale hairs. Basal two segments of abdomen strongly, irregularly striated; the third closely, irregularly reticulated; the fourth and fifth irregularly, closely rugose; the furrows wide, deep, crenulated; the lateral angles on the second and fourth smooth, shining; there are deep, crenulated furrows on the apices of the third and fourth; the sides of the fifth are broadly roundly dilated. There is a distinct, striated keel on the basal half of the second segment; it becomes gradually narrowed towards the apex. Malar space and parapsidal furrows red. Hind tarsi blackish. ♂.

Length 10 mm.

Cape.

* *IPHIAULAX VARITINCTUS*, sp. nov.

Vermilion-red; the abdomen largely suffused with dull yellow, the red showing only in patches; the antennæ, front, vertex, and occiput black. Wings fuscous, with the usual hyaline spots below the stigma; the costa and stigma red; hind tarsi black; the tibiæ and tarsi are paler than the femora. ♀.

Length 12 mm.; terebra 5 mm.

Cape.

Antennæ longer than the body; the scape oval, twice longer than it is wide in the middle, densely pilose. Face smooth, sparsely haired, black in the middle; the inner orbits are narrowly lined with red; the black from the vertex extends, except close to the eyes, to the middle of the eyes. The middle of the first abdominal segments, the second, and the third to near the apex, and the transverse furrows are closely, strongly striated; the furrows on the apices of the third, fourth, and fifth are narrow, distinct, and obscurely crenulated. Palpi black.

Comes close to *I. pictus*, Bé.; that may be known by the black face, by the outer orbits being broadly black throughout, rufous, not black palpi and finely punctured—not smooth—apical segments of the abdomen, and by the paler, lead-coloured abdomen. In the latter respect it resembles *I. rubrinervis*; that species has the eye orbits widely red, the mesonotum with three large black marks, and the pleuræ are for the greater part black.

IPHIAULAX DECORUS, sp. nov.

Red; the antennæ, apex of mandibles, head, except for a spot opposite the antennæ, two spots on the hind orbits, lower part of prothorax, mesopleuræ, except the part above the oblique furrow below the tegulæ, the lower part of the base, continued on to the edge of the sternum, the median segment, three large marks on the mesonotum and a large mark on the base of the hinder coxæ, black. Wings smoky, the costal cellule, second cubital cellule, and a cloud on the outer side of the recurrent nervure more hyaline in tint; the costa and stigma, except at the apex, red; the nervures black. ♀ and ♂.

Length 6–7 mm.; terebra slightly over 1 mm.

Cape Colony. Hex River; Worcester Distr.

Centre of first abdominal segment stoutly striated; the second to the suturiform articulation more finely and closely striated; the

centre raised, broad, not forming an area or a keel; the raised sides forming a smooth, elongated triangle, the broad end on the outer side; suturiform articulation wide, deep, the apical branch almost smooth; there are wide smooth furrows, separated in the centre, on the apices of the third and fourth segments; that on the third with a few scattered keels. Recurrent nervure interstitial; the third abscissa of the radius longer than the basal two united.

This seems to be a good species. It is distinctly smaller than the others, has paler wings, and the median segment is entirely black, the meso- and propleuræ being also more largely black.

IPHIAULAX DODSI, sp. nov.

Vermilion-red; the oral region and mandibles pale yellow; the palpi yellowish testaceous; the antennæ, tips of mandibles, the middle of front, vertex, and occiput broadly black; the mark slightly narrowed below; a broad black line on the sides of the prosternum. Antennæ black, longer than the body; the scape twice longer than wide. Wings uniformly dark fuscous, the costa and stigma coloured like the body. ♀.

Length 10 mm.; terebra 4 mm.

Southern Rhodesia. Sebakwe.

Palpi pale rufous, paler towards the apex and covered with white pubescence. Raised central part of first abdominal segment strongly sharply striated; the lateral furrow with three stout transverse keels at the base; the second segment strongly, sharply striated; the lateral basal furrows deep; the lateral area large, triangular, smooth, pilose; the third segment closely, longitudinally rugosely punctured, the fourth similarly, but not so strongly punctured; the fifth irregularly, not very strongly punctured in the centre; its sides and the other segments smooth; the first furrow is deep, wide, strongly striated; the second narrower, not so strongly striated; there is a narrow, deep, not very closely crenulated furrow on the apex of the third, fourth, and fifth segments; these are tinged with yellow; there is no raised area on the base of the second segment.

Resembles *I. varipalpis*; that species has the third and fourth abdominal segments impunctate.

* *IPHIAULAX LATIVENTRIS*, sp. nov.

Rufous, a large mark on the centre of the vertex and front, narrowed below, one slightly narrower on the centre of the occiput and

the antennæ, black; wings dark fuscous, the costa and stigma, except at the apex, orange. Palpi yellowish testaceous. ♀.

Length 12 mm.; terebra 5 mm.

Transvaal.

Antennæ longer than the body; the scape more than twice longer than wide. Face thickly covered with white hair. Tips of mandibles black. Dorsal surface of abdomen strongly, longitudinally striated from the first to the sixth segments; the centre of the second segment is roundly raised at the base; the sides are depressed, the depressions not forming a furrow; the transverse furrows are wide, deep, and clearly defined; the oblique apical furrow on the third is wide, deep, longish. The abdomen is not much longer than the thorax and is distinctly wider than it; there are no transverse furrows on the apices of the segments, they all, except the sixth, being striated to the end. Wings large; uniformly coloured, except for the usual hyaline cloud in the first cubital cellule and along the outer edge of the recurrent nervure.

The breast is irregularly marked with black.

What I make out to be *I. coccineus*, Bé., has broad red eye orbits as in the present species; it is a much more slenderly built species and has the fourth and following abdominal segments smooth. *I. pictus*, Bé., has a narrower and longer abdomen; the eye orbits have only a narrow interrupted red line, and the apices of the abdominal segments have narrow but distinct transverse furrows; the basal furrows are not so deep and the upper outer orbits are broadly black. The colour of the present species is different from what it is in the others; it is not vermilion bright red, but duller, more red-brick coloured; the ovipositor, too, is longer—as long as the abdomen, fully longer than in *varitinctis* or *whitei*.

THE GROUP OF *Iphiaulax calvinicæ*.

Yellowish or rufous testaceous, the head more or less and the hind tibiæ and tarsi black; wings fuscous, the basal half of the stigma yellowish ochraceous. Thorax long, the mesonotum and scutellum flat, the latter not much raised above the former; the parapsidal furrows obsolete; metanotum flat, longish, not sloped at the apex, which is on a level with the base of the abdomen. Abdomen closely striated, the furrows not deep; a distinct oblique one on the sides of the second, it reaching to the apex or to the middle only.

This group shows an approach to the genus *Platybracon*, as is shown by the flat thorax and by there being a transverse keel or ridge below the antennæ.

Head, except the oral region and the hinder part of the malar space, black; the furrows on the second abdominal segment narrow, clearly defined, extending from the base to the apex, straight, oblique, ovipositor 6 mm. long *erythrostomus*.

Head with the sides of the front and the greater part of the vertex yellow; the furrows on the second abdominal segment wide, curved, not reaching to the apex of the segment; ovipositor 8 mm. *calvinia*.

IPHIAULAX CALVINIÆ, sp. nov.

Yellowish-red; the antennæ, front, ocellar region, the mark produced behind on to the middle of the vertex and gradually narrowed to a point, and the hind tibiæ and tarsi, black; wings fuscous, except for the usual hyaline spot on the first cubital cellule, the nervures, costa, and apex of stigma black, the basal half of stigma ochraceous. ♀.

Length 10 mm.; terebra 8 mm.

Cape Colony. Calvinia.

Thorax flat above, almost on one level, the middle lobe not clearly separated; apex of metanotum closely striated in the middle; the rest of thorax smooth, impunctate; the metanotum covered with long black hair. Pleural furrow, shallow, indistinct. Abdominal segments closely, rugosely, longitudinally striated; the suturiform articulation wide, deep, crenulated; it has no oblique branch on the sides, but there is a broad, deep, curved one on the sides of the second segment at the base; these are bordered on the outer side with curved striæ; the outer side, at the base, is smooth. Radial cellule long, narrow; the apical abscissa of the radius longer than the basal two united.

This species differs from the normal species of *Iphiaulax* in having the thorax above flat.

* IPHIAULAX ERYTHROSTOMUS, sp. nov.

Closely allied in colouration (except that the head is black above the clypeus) and having also a flat upper part of thorax, is a Cape species in my collection; the size is the same, and the abdominal segments are closely, longitudinally striated.

Length 10 mm.; ovipositor 6 mm.

Face with a large depression, longer than wide, in the centre; it is stoutly longitudinally striated; the part above it, below the antennæ, forms a stout transverse border; the lower sides of the depression are rounded at the sides; the top is transverse. Palpi

black, covered with white hair. The striation on the abdomen is sharp and strong on the basal segments, becoming weaker towards the apical. Sutureform articulation deep, crenulated; its lateral furrows wide, shallow, striated; the furrow on the base of the fourth segment is deep, crenulated, and does not reach to the sides. Palpi dark fuscous. Oral region, malar space and mandibles, except at the apex, red.

THE GROUP OF *I. rhodesianus*, Cam.

Yellowish testaceous, the abdomen slightly spotted with red; the upper part of the head for the greater part black. Abdomen short, ovate, the basal segment with a keel in the middle of the apex; the second and the transverse furrows striated; the apical and basal furrows are distinct, crenulated; there is no distinct area on the base of the second segment. Wings fuscous hyaline, the costa and stigma pale yellow, the nervures darker coloured.

Apart from the difference in colour—the body, costa and stigma pale yellow, instead of vermilion-red—this group does not differ from that of *Coccineus*.

IPHIAULAX RHODESIANUS, sp. nov.

Dark yellow, tinged with rufous, the antennæ, the middle of the front broadly and of the vertex still more broadly, black; wings hyaline, suffused with yellow at the basal half, with fuscous at the apex; the costa and stigma pale yellow; the nervures darker. ♀.

Length 8 mm.; terebra 3 mm.

Southern Rhodesia. Sebakwe.

In fresh specimens the colour may be testaceous. Head and thorax smooth; the face covered with black hair. Tips of mandibles black. Palpi pale testaceous. Malar furrow wide. Abdomen ovate, as long as the thorax. First abdominal segment smooth; the lateral depression wide; the raised central part keeled down the middle; the second segment closely, strongly longitudinally striated; the lateral plate wider than long, smooth, transverse at the base, irregularly rounded at the apex; the raised part, outside it and the depressions smooth. Sutureform articulation wide, deep, stoutly striated; the apical lateral branch narrow, crenulated; there is a narrow, transverse, crenulated furrow on the apex of the segment; there is a distinct crenulated furrow on the base of the fourth segment and a narrower, obscurely crenulated one on the apices of the fourth and fifth. The apex of the third is aciculated-striated; the other segments are smooth. The recurrent nervure is interstitial.

THE GROUP OF *I. 12-fasciatus*, Cam.

Rufous, the head, mesonotum and marks on the pleuræ black. Wings fuscous, with numerous hyaline spots. Abdomen twice the length of the thorax; the second and third segments stoutly striated; the area on the second segment large, triangular, with a keel which reaches to the apex of the segment; it is obscurely striated. Ovipositor longer than the body.

I. capensis, Cam., might form another group, differing from the above in the thorax having no black; the wings with only the usual fasciæ along the transverse cubital nervures, the abdomen strongly closely striated, with the area on second segment strongly closely striated and bordered by a band of oblique striæ.

IPHIAULAX 12-FASCIATUS, Cam.

Rec. Alb. Museum, i. 154.

One ♂ from Dunbrody (O'Neil).

It does not differ from the ♀.

THE GROUP OF *I. trichiosomus*.

Rufo-luteous, with black head; wings fuscous, the base broadly yellowish hyaline. Abdomen including the furrows smooth; no area on the second segment, the middle at the base not in any way separated from the sides; the abdomen broad, ovate, not much longer than the thorax. Parapsidal furrows not indicated.

This group is easily separated from those of *robustus* and *xanthostomus* by the more reddish colour and, more particularly, by the very smooth abdomen. It agrees with them in the transverse median nervure not being interstitial.

IPHIAULAX TRICHIOSOMUS, sp. nov.

Luteous, the antennæ, head, apex of hind tibiæ, hind tarsi, and mandibles, black; the palpi stout, dark testaceous, pilose; wings yellowish hyaline to the lower part of the transverse basal nervure; dark fuscous beyond; the stigma reddish luteous, black at the apex. Body and legs thickly covered with white pubescence; the hair on the face and oral region long and black. ♀.

Length 11 mm.; terebra 4 mm.

Cape Colony. No exact locality.

Abdomen smooth and shining, neither punctured nor striated. The second segment widely, obliquely depressed at the base; the suturiform articulation narrow in the middle, widened laterally; there are narrow, smooth furrows on the base and apex of the fourth

and fifth segments and on the apex of the third. Front with a deep, narrow furrow. The transverse median nervure is not quite interstitial, being received very slightly beyond the transverse median; the recurrent nervure is received close to the apex of the first cubital cellule; the third abscissa of radius is curved roundly towards the costa, and is longer than the basal two united.

The position of the transverse median nervure shows an approach to the *Exothecini*. There is no keel or area on the second abdominal segment.

THE GROUP OF *I. xanthostomus*.

Luteous, the greater part of the head black, the mesonotum marked with black. Wings large, the base narrowly yellow; the middle with small hyaline clouds, stigma luteous; the hind tarsi and apex of hind tibiæ broadly black. First abdominal segment striated, the others closely longitudinally rugosely punctured; a small smooth, triangular longish area on the base of the second segment.

The type of this group differs from *robustus* in having the abdomen shorter and closely punctured, not striated, and the transverse median nervure is interstitial.

IPHIAULAX XANTHOSTOMUS, sp. nov.

Luteous, the head, except the malar space and the oral region, the mesonotum except the apex broadly in the centre, from shortly behind the middle, a mark, longer than wide, on the middle of the prosternum, the apex of the hind tibiæ and the hind tarsi, black. Wings dark fuscous, the basal fourth yellowish hyaline; the stigma, except at the apex, orange-yellow; an irregular hyaline cloud in the first cubital cellule, a triangular one below the base of the second and one bordering both sides of the second transverse cubital nervure; the hind wings similarly coloured.

Length 13 mm.; terebra 6 mm.

Cape Colony. King William's Town Distr.; St. Mathew's.

Antennal scape thick, oval, about twice longer than wide. Face covered with black pubescence above, below with shorter pale pile. Mandibles testaceous, black at the apex. All the abdominal segments closely, strongly longitudinally striated; the striæ in the centre golden; suturiform articulation wide (as is also the apical lateral branch), stoutly crenulated; there is a similar furrow on the third; the sides of both segments behind the furrows smooth; the plate on the second segment is small, smooth, longer than wide at the base, gradually narrowed towards the apex; the fourth and fifth segments have wide crenulated furrows on the apex; the apical edge of the

furrow on the fifth is curled up; the furrow on the sides of the second segment is deep, of equal width, and reaches to the base of the apical third of the segment.

The wings are larger and longer than usual.

THE GROUP OF *I. robustus*.

Luteous, the hind tibiæ and tarsi black; wings fuscous, the base yellowish hyaline, the dark apical part with hyaline clouds; the basal four or five segments of the abdomen closely, finely striated; there is no distinct area on the base of the second segment; the lateral furrows distinct, crenulated. The abdomen is longish, distinctly longer than the head and thorax united.

This group shows an approach to the *Exothecini*, the transverse median nervure being received shortly beyond the transverse basal. In coloration also they approach the species of *Exothecus* from South Africa. Our two species may be separated thus:—

Head black, the fifth abdominal segment punctured, ovipositor longer than the abdomen	<i>robustus</i> .
Head luteous, the fifth abdominal segment impunctate; ovipositor shorter than the abdomen	<i>mimeticus</i> .

IPHIAULAX ? ROBUSTUS, sp. nov.

Luteous, the antennæ, head, except the oral region, and the hind tibiæ and tarsi black; wings yellowish hyaline to the transverse basal and transverse median nervures; dark fuscous beyond, with a hyaline cloud in the first cubital cellule, a small one below the first transverse cubital nervure, one on either side of the second transverse cubital, extending below into the discoidal as an irregular, somewhat pyriform, slightly oblique cloud. ♀.

Length 17 mm.; terebra 13 mm.

Natal. Durban.

Antennal scape about twice longer than the width at the apex, covered with longish black hair below. First abdominal segment with a distinct furrow down the centre; the apex smooth, with a strongly striated band behind the smooth part; the second and third segments are strongly closely striated, except on the basal lateral area; the fourth and fifth are smooth at the base behind the furrows, the rest closely striated; the suturiform articulation deep, with a longish lateral branch; there are wide crenulated furrows on the base and apex of the following two segments, and on the base of the sixth. Apical abscissa of radius as long as the second and one-fourth of the first; the second cubital cellule more than twice longer than wide the recurrent nervure is received about one-third of the length

of the first transverse cubital nervure in front. The transverse median nervure is not quite interstitial, being received shortly beyond the transverse basal; showing an approach to the *Exothecini*. Hypopygium large, cultriform, projecting beyond the apex of the last dorsal segment.

* *IPHIAULAX MIMETICUS*, sp. nov.

Luteous, the antennæ, hind tibiæ and tarsi, black; wings blackish fuscous; the base to the length of the transverse cubital nervure from the stigma yellowish hyaline, the hind wings to the commencement of the cubitus; basal half of stigma ochraceous. ♀.

Length 15 mm.; terebra 5 mm.

Transvaal.

Head and thorax smooth and shining. The central area of the first abdominal segment from the top of the basal slope strongly striated, with a stouter keel down the middle; the base and sides smooth; the second, third, and basal half of the fourth segment closely longitudinally striated, the apices of the second and third with a narrow smooth border; suturiform articulation deep, crenulated; the furrow on the base of the third is narrower and crenulated; there are crenulated furrows on the apices of the third and fourth segments. There is a narrow hyaline cloud below the base of the stigma, a small irregular one below the first transverse cubital nervure and one on either side of the second; the line narrowed in front and broadest on the outer side. Antennal scape three times longer than wide. The second cubital cellule is about three times longer than wide and longer than the third; the transverse median nervure is not quite interstitial, it being received shortly beyond the transverse basal.

There is no distinct area or keel on the base of the second abdominal segment; only a small, wider than long smooth space in the middle.

BRACON, Fabr.

* *BRACON? DIFFICILIS*, sp. nov.

Rufo-testaceous, the ocellar region largely, antennæ, tips of mandibles, the greater part of the lobes of the mesonotum, scutellum, an obscure mark on the base of the metanotum, the greater part of the first abdominal segment, a broad band down the centre of the second, extending from the base to near the apex, the mark slightly, gradually narrowed from the base and rounded at the apex, two irregular large marks in the centre of the third, two large marks on the fourth,

two broader ones on the fifth, both narrowed on the outer side at the apex; and the mesosternum broadly, black. Wings hyaline, the stigma and nervures black. ♂.

Length 7 mm.

Cape.

Face closely, distinctly punctured; its centre furrowed above, the apex with a triangular depression; the rest of the head, pro- and mesothorax smooth. Metanotum closely finely rugose; the pleuræ distinctly, closely punctured; the base of the metanotum is smoother, more shining. Abdomen long, slender, of equal width; its first segment closely, irregularly longitudinally striated, the striæ interlacing and forming almost reticulations at the apex, the second to fifth segments closely longitudinally striated, the striæ becoming gradually weaker; the second has a longitudinal keel down the centre, this keel being bordered at the base by oblique striæ; the sixth segment is as long as the preceding. There is a curved crenulated furrow on the base of the second segment at the sides; there is a narrow keel, not dilated at the base, down the centre; there are crenulated furrows at the base of the third, fourth, and fifth segments; the apical branch of the suturiform articulation is short, indistinct.

The form of the abdomen is different from what it is in the typical *Bracon* or *Iphiaulax*, it being longer, more slender and of more uniform thickness. The furrows are deeper than in *Bracon*, but not quite as in *Iphiaulax*.

VIPIO, Latr.

This genus is well represented in the collection. The following table is given as an aid to the determination of the species:—

- | | | |
|----------|--|-----------------------|
| 1 (6). | Mesonotum immaculate. | |
| 2 (3). | Abdomen smooth, impunctate, pleuræ maculate with black | <i>trimaculatus.</i> |
| 3 (2). | Abdomen closely punctured, pleuræ immaculate. | |
| 4 (5). | Apex of mesonotum strongly punctured in the middle.. | <i>stictonotus.</i> |
| 5 (4). | Apex of mesonotum not punctured in the middle.. | <i>natalensis.</i> |
| 6 (1). | Mesonotum maculate with black. | |
| 7 (10). | Apex of abdomen black. | |
| 8 (9). | Wings lacteous-hyaline, smoky at the apex; the stigma pale yellow | <i>pallidinervis.</i> |
| 9 (8). | Wings uniformly fuscous, the stigma testaceous, the nervures black | <i>funipennis</i> |
| 10 (17). | Apex of abdomen not black. | |
| 11 (16). | Hinder tibiæ black. | |

- 12 (13). Pleuræ maculate with black, metanotum furrowed down the middle; occiput with two black marks .. *maculiceps*.
 13 (12). Pleuræ not maculate.
 14 (15). Black on vertex continued to a transverse mark on occiput, metanotum striated *nigripalpis*.
 15 (14). Black on vertex isolated, occiput immaculate, metanotum smooth *5-maculatus*.
 16 (11). Hind tibiæ not black.
 17 (18). Wings light-smoky fuscous, the nervures and stigma pale yellow *tinctipennis*.
 18 (17). Wings uniformly dark fuscous.
 19 (20). Head immaculate, the coxæ and trochanters black .. *longicaudis*.
 20 (19). Head maculate.
 21 (22). Abdomen smooth, the second to fourth segments with two foveæ *sexfoveatus*.
 22 (21). Abdomen closely punctured, the segments not foveate.
 23 (24). Slender, 8 mm., the ovipositor not twice the length of the body, the occiput with a broad black mark, the mesopleuræ with a curved black line at the middle, at the apex united to the black on the breast, the hind trochanters black; the keel on centre of basal half of metanotum weak.. .. . *spilocephalus*.
 24 (23). Stout, at least 12 mm., occiput immaculate, the ovipositor three times longer than the body, mesopleuræ immaculate; the hind trochanters immaculate; the keel on metanotum stout.. .. . *nigronotatus*, Bé.

V. nigronotatus, Bé., is in the collection from Stellenbosch. Of the species with a long ovipositor I have described, it comes nearest to *V. longicaudis*, which may be known from it by the immaculate head and black coxæ and trochanters. The more yellowish colour of the body and the lighter coloured wings separate *V. tinctipennis* from it; *stictonotus* and *trimaculatus* are separated, *inter alia*, by the immaculate thorax.

VIPIO TRIMACULATUS, sp. nov.

Reddish luteous, flagellum of antennæ, mesosternum, and a mark, transverse below, roundly narrowed above, on the middle of the mesopleuræ, black; wings not very dark fuscous, the nervures, costa, and apex of stigma black, the rest of stigma reddish yellow; the apical abscissa of radius as long as the basal two united, the recurrent nervure received in the apex of the first cubital cellule. ♀.

Length 9–12 mm.; terebra 45 mm.

Cape Colony. Calvinia Distr.

Head smooth, shining; the hinder ocelli bordered behind by a deep curved furrow; the furrow running from them to the antennæ

wide and deep; malar space with a narrow furrow. Abdomen smooth, the second segment on the basal two-thirds irregularly wrinkled; suturiform articulation deep, crenulated, the curved lateral furrow is smooth; there is no distinct furrow on the third or following segments. Pleural furrow smooth; the parapsidal shallow, distinct on basal two-thirds of the mesonotum.

In the form of the abdomen this species forms a transition to *Bracon* s. str.

VIPIO TINCTIPENNIS, sp. nov.

Orange-luteous, the antennæ, a large mark longer than wide, the basal half obliquely narrowed to a point, a large mark, slightly gradually narrowed towards the apex, on the basal half of the middle lobe of the mesonotum, the greater part of the lateral lobes, the marks extending on to the base of the scutellum, the mesosternum and lower part of mesopleuræ, black. Wings fuscous hyaline, the greater part of the first cubital cellule and the part outside the recurrent nervure clear hyaline; the nervures fuscous, the basal two-thirds of the stigma whitish yellow. ♀.

Length 12 mm.; terebra 40 mm.

Cape Colony. Stellenbosch.

Face closely and strongly punctured and thickly covered with white pubescence; the sides of the front punctured, front and vertex smooth. Thorax impunctate, shining; base of metanotum depressed in the middle. Middle area of first abdominal segment transverse at the apex, gradually roundly narrowed to a point at the base; the lateral furrows with some irregular striæ. Second and third segments closely longitudinally punctured-reticulated; the triangular plate at the base lemon-yellow; suturiform articulation irregularly crenulated; its lateral branch roundly curved, obscurely crenulated; the apex of the segment raised, the sides roundly dilated; there is a distinct crenulated furrow on the base of the fourth segment; the apical segments smooth, tinged with lemon-yellow. Radial cellule short; the transverse median and recurrent nervures interstitial. The head and thorax thickly covered with white pubescence.

* *VIPIO PALLIDINERVIS*, sp. nov.

Rufo-testaceous, the face, orbits, and mandibles paler, more yellowish in tint; the four front legs yellowish, the hinder more rufous; a mark longer than broad, transverse at the base, roundly narrowed at the apex on middle lobe of mesonotum, a broad line on

the sides extending on to the base of the scutellum, mesosternum, fore coxæ below, the four hinder, the base of trochanters below and the fourth and following segments of the abdomen, black. Wings hyaline, tinged with yellow, their apex smoky; the stigma pale yellow, its base and nervures fuscous. Scape of antennæ blackish, the flagellum fuscous. Trophi testaceous; the labial palpi fuscous, testaceous at the base and apex. ♂.

Length 10 mm.

Cape Colony.

Head thickly covered with pale hair, smooth; the lower part of malar space punctured; indistinctly furrowed down the centre. Thorax smooth; the median segment thickly covered with white hair, weakly punctured. Middle of first abdominal segment closely covered with raised rugosities, some of them pitted; the second and third segments with similar rugosities, but more widely separated, especially on the third. Suturiform articulation wide, deep, crenulated; the apical segments thickly covered with white pubescence.

VIPIO MACULICEPS, sp. nov.

Red; the antennæ, trophi and palpi, ocelli, two large marks on the centre of the vertex, a mark, broader than long, rounded and narrowed behind, on the base of the central lobe of mesonotum, a broad line on the lateral, extending behind on to the sides of the scutellum, a broad line on the lower part of the propleuræ; a mark, broad at the base, gradually narrowed behind, on the middle of the mesopleuræ, the mesosternum, the mark extended on to the apex of the mesopleuræ, as a square projection; a large mark on the lower side of the coxæ and the four hind tibiæ and tarsi, black. Wings dark fuscous, the nervures and stigma black. ♀.

Length 9 mm.; ovipositor 10 mm.

Cape Colony. Malmesbury Distr.

Face closely and strongly punctured, the middle less strongly, more finely and irregularly. Malar furrow wide, shallow, finely punctured. Thorax shining, smooth; there is a short, deep, longitudinal furrow on the apex of the mesonotum; the part on either side of this is sparsely, weakly punctured. Base of metanotum smooth, the rest longitudinally striated and punctured; there is a distinct, moderately wide furrow down the middle. Apical half of metapleuræ aciculated, covered with long, black pubescence. Basal four segments of abdomen closely, longitudinally striated; the part on the sides behind the oblique furrows and the apices of the third and fourth segments narrowly, smooth.

VIPIO NIGRIPALPIS, sp. nov.

Length 8 mm. ; terebra 8 mm. ♀.

Cape Colony. Cape Town.

This species resembles closely *V. maculiceps* in colouration, including the four black hind tibiæ and tarsi, the reddish body and blackish wings; but may be separated as follows:—

Pro- and mesopleuræ marked with black; the middle and base of mesonotum for the greater part red; the smooth, shining plate on the sides of the second abdominal segment wider than long	<i>maculiceps</i> , Cam.
Pro- and mesopleuræ immaculate, mesonotum, except the apex of middle lobe, black; the smooth, shining plate on the sides of the second abdominal segment longer than wide	<i>nigripalpis</i> , Cam.

Antennæ, trophi, palpi and mesosternum black; head and thorax smooth, the face covered with blackish hair. Middle of first abdominal segment closely, longitudinally striated, keeled down the centre; the depressed sides irregularly striated in the middle; the second, third, and fourth segments longitudinally rugosely punctured, the second more distinctly striated than the others; the plates at the sides of the second and third smooth, shining; the first longer than wide at the base, gradually narrowed to a point; the second as long as wide, the inner side roundly curved. Suturi-form articulation deep, crenulated; the furrows leading from it curved roundly, less strongly crenulated; the apices of the third and fourth segments raised, smooth, yellowish. The mark on the vertex is narrowed behind and is united to a larger transverse one on the top of the occiput.

VIPIO NATALENSIS, sp. nov.

Reddish luteous, the flagellum of antennæ black; wings dark fuscous, the base of stigma pale ochraceous, the costa and nervures black, the apical abscissa of radius as long as the basal two united; metanotum strongly, closely punctured, the punctures deep, round, clearly separated, furrowed down the middle, the furrow with stout, irregular keels. ♀.

Length 11 mm. ; ovipositor 22 mm.

Natal. Maritzburg.

Face below the antennæ closely, but not strongly punctured, the rest of the head smooth and shining. Mesonotum shining, strongly, sparsely punctured; the parapsidal furrows complete but becoming

wider and shallower towards the apex. Pro- and mesopleuræ impunctate, the furrow on the latter smooth, wide; the metapleuræ strongly and closely punctured above, almost impunctate below. Basal three segments of abdomen strongly, closely, reticulated-punctured; the furrows bordering the centre of first wide and marked with some transverse keels; the suturiform articulation wide, deep, and strongly crenulated; the furrow on the third segment is narrow and smooth; the lateral depression on the base of second is wide, oblique; closely striated on the basal narrowed part, with some longitudinal furrows on the wider apical; the oblique furrows on the sides of the third is deeper, but not so wide and is more closely, strongly striated; the basal half of the fourth segment is closely punctured.

Characteristic of this and the following species is the strongly punctured metanotum.

VIPIO STICTONOTUS, sp. nov.

Rufous, the antennæ black; the breast infuscated; wings dark fuscous; the apical abscissa of radius as long as the basal two united; the apex of the mesonotum with a large, squarish, coarsely reticulated part in the centre; its middle with a keel down the centre; the rest, except the apex of the lateral lobes, sparsely punctured, as is also the scutellum. Metanotum closely, strongly punctured, and with a distinct furrow down the middle; the lower part of metapleuræ sparsely punctured. Basal four abdominal segments coarsely rugosely punctured, the punctures running into reticulations, the sides of the second and third segments at the base punctured; the furrows wide, deep, crenulated. Apical abscissa of radius slightly longer than the basal two united. Trophi testaceous; labial palpi black. ♀.

Length 10 mm.; terebra 20 mm.

Southern Rhodesia. Sebakwe.

This species closely resembles *V. natalensis*; it may be known by the black antennal scape, by the large reticulated space on the apex of the mesonotum, and by the much shorter prothorax.

VIPIO FUMIPENNIS, sp. nov.

Rufous, the basal half of the middle lobe of mesonotum, the greater part of lateral, mesosternum, the fourth and following segments of the abdomen, the coxæ and basal joint of trochanters,

black; the wings uniformly fuscous, the stigma, except the apex, ochraceous, the nervures black. ♂.

Length 11 mm.

Cape Colony. Stellenbosch.

Head and thorax smooth, the face sparsely covered with black, the metanotum more thickly with pale hair. The greater part of maxillæ and labial palpi black; maxillary palpi black at base, the rest dark testaceous. Basal two segments of abdomen closely longitudinally striated; the furrows crenulated; the third with raised dots, the fourth similarly dotted, but more weakly; the others smooth, sparsely haired. Sutureform articulation broadly curved backwards in the middle, the sides obscurely crenulated.

I have in my collection an example of what is probably a variety of *fumipennis* which has the maxillæ yellowish to near the apex, not black, yellow laterally at the base only as in the type; the black stripe on the mesonotum is not prolonged on to the middle of the scutellum along the sides. Another variety has the basal segments of the abdomen largely suffused with black.

VIPIO LONGICAUDIS, sp. nov.

Red; the antennæ, apex of mandibles, a large, squarish mark on the base of the middle lobe of the mesonotum, a broad line on the lateral lobes, extending from near its base to near the middle of the scutellum, the mesosternum, a narrow line below the middle of the propleuræ, the coxæ and basal joint of the trochanters, black; wings dark fuscous, the basal three-fourths of the stigma ochraceous. Palpi black. ♀.

Length 11 mm.; terebra 30 mm.

Cape Colony. Stellenbosch.

Face, front, and vertex sparsely covered with long black hair; smooth, the sides of the face and base of mandibles punctured. Malar space as long as the third and fourth antennal joints united; furrowed down the middle. Pro- and mesothorax smooth, shining; the base of the metanotum smooth, the rest punctured; the sides infuscated; the metapleuræ irregularly punctured; deeply, obliquely furrowed down the middle. Middle area of first abdominal segment rugosely punctured; the second closely, rugosely longitudinally striated; the third more weakly striated to near the apex; the fourth still more weakly to near the middle.

The apical joints of the maxillary palpi are testaceous towards the apex.

This species is closely allied to *V. nigronotatus*, Bé.; the main differences between the two are these:—

Front and vertex largely black, the coxæ and trochanters not marked with black	<i>nigronotatus</i> .
Front and vertex immaculate; the coxæ and trochanters black	<i>longicaudis</i> .

* *VIPIO SPILOCEPHALUS*, sp. nov.

Red; the antennæ, apex of mandibles, palpi, trophi, a broad band on the front and vertex, narrowed behind and continued on to the top of the vertex; there is a large transverse mark incised in the middle above on the latter, a triangular mark on the central lobe of the mesonotum, a broad line on the lateral, continued on to the scutellum to shortly beyond their middle, a line down the centre of the propleuræ, a line, irregularly dilated at the base, above and below and continued to the apex, where it is united to a large black mark on the mesosternum, the under side of the coxæ and the trochanters, black. Wings dark fuscous, the stigma and nervures black. ♀.

Length 8 mm.; terebra 12 mm.

Cape Colony.

Face sparsely punctured and covered with black hair. Pro- and mesothorax smooth, the breast covered with white hair. Median segment covered with long white hair; the metanotum irregularly punctured, the basal half furrowed. Basal three segments of the abdomen closely, irregularly striated; the fourth on the sides striated to the middle, on the centre to shortly beyond the middle. Apical abscissa of radius longer than the basal two united.

This species is closely related to *V. maculiceps*; the two may be distinguished thus:—

The mark on centre of vertex narrow, indistinct; the marks on the occiput separated; four hind tibiæ and tarsi black, apical abscissa of radius not longer than the basal two united	<i>maculiceps</i> .
The mark on centre of vertex broad; the marks on occiput united; the hind legs not black; the apical abscissa of radius longer than the basal two united	<i>spilocephalus</i> .

VIPIO QUINQUEMACULATUS, sp. nov.

Red; the antennæ, a broad band on the middle of the vertex and front, narrowed to a sharp point above, maxillæ and palpi, apex of mandibles, a large mark on the middle lobe of mesonotum, narrowed towards the apex, but not to a point, it being transverse there and about one-fourth of the width at the base; the greater part of the

lateral lobes to the base of the scutellum, mesosternum, the basal joint of the trochanters below and the hind tibiæ and tarsi, black. Wings dark fuscous; the nervures and stigma black. ♀.

Length 12 mm.; ovipositor 8 mm.

Cape Colony. Spectakel; Namaqualand Distr.

Head and thorax smooth; the face closely, but not strongly punctured. Malar furrow not quite reaching to the apex, deep, rounded and gradually, but not much, widened towards the apex. Middle lobe of first abdominal segment stoutly, irregularly striated from near the base; the lateral lobes irregularly transversely striated; the second segment closely, longitudinally striated; the third segment closely, longitudinally striated to near the apex, inside the lateral furrows and largely marked with black; the fourth is obscurely striated in the middle at the base; both are marked with black at the base. The furrows are deep, crenulated.

The middle tarsi are blackish; the anterior infuscated.

VIPIO SEXFOVEATUS, sp. nov.

Red; the antennæ, occiput, front and vertex, three marks on the mesonotum, the basal shorter and broader, a mark below the apex of the fore wings and mesosternum, black. Wings fuscous, a hyaline cloud in the first cubital cellule; one outside the recurrent nervure, the greater part of the apical basal half of the hind wings and a longitudinal one at the stigma. Palpi testaceous, covered with white hair. Apex of mandibles black. ♂.

Length 10 mm.

Cape Colony. Neighbourhood of Cape Town.

Face closely, distinctly punctured, sparsely covered with black hair; a black keel below the antennæ; a smooth plate, dilated before the apex, narrowed above, below. Abdomen smooth, shining, impunctate; central area of first segment rounded at the apex, the basal half gradually narrowed; keel on second segment gradually narrowed from the base to the apex, it reaching to the base of the apical third; the lateral oblique furrows are deep; on either side of the apex of the keel is a fovea, longer than wide; there is a shorter, less distinct keel on the base of the following two segments, with a rounded fovea on either side. Legs immaculate, coloured like the body. Metanotum impunctate.

This species differs from the other Cape forms I have seen in the front and vertex being entirely black. Characteristic, too, are the six distinct foveæ on the back of the abdomen.

BACUMA, gen. nov.

Abdomen long, of uniform thickness to the penultimate segment, with eight distinct segments; the basal four longer than wide; the basal six closely, strongly rugosely punctured; the seventh and eighth segments large; the seventh longer than the sixth. Radial cellule long, reaching to the apex; transverse median nervure interstitial; the recurrent nervure received in the first cubital cellule; second cubital cellule below twice longer than wide. Mesonotum trilobate. A deep, obscurely crenulated furrow at the base of the scutellum. Legs long and slender; the hind tibiæ at least three times longer than thick; fore tarsi twice the length of the tibiæ.

There is a short, wider than long, smooth plate on the base of the second abdominal segment; the hypopygium is very large, broad; it commences at the base of the fifth segment. Occiput not margined. Eyes large, parallel; there is a distinct malar space. Calcaria minute; the claws are more prominent. Front excavated; a raised, furrowed keel down its centre. Antennal scape about four times longer than wide, of equal thickness throughout; the basal joints of flagellum of equal length. Anal nervure not interstitial.

In the table of Szépligeti (Gen. Insect. Braconidæ, 11) this genus would come in near *Syntomomelus* and *Coeloides*, with neither of which can it be confounded.

BACUMA MACULIVENTRIS, sp. nov.

Luteous, the apex of mandibles, antennæ, middle of front broadly, the greater part of vertex, the mesonotum, except for a large mark, longer than broad, its sides at the base slightly prolonged, on the apex in the middle, a mark on the basal joint of the hinder trochanters below; the hind femora except on the top and apex and the hind tibiæ and tarsi, four large marks on the ventral surface, cleft in the middle at the apex and the large cultriform hypopygium black, the black continued broadly along the sides of the segment behind. Wings dark fuscous; the basal half of stigma orange-yellow; a cloud runs from the orange part of the stigma, obliquely to the apex of the wing; there is a hyaline cloud near the apex of the median and submedian cellules, a small one at the base of the hind wings, and an oval one below the base of the cubitus. Face rugose, covered with long fulvous hair; the front and vertex shining. Thorax smooth, shining; there is an elongated tubercle on the base of the metanotum. Middle of first abdominal segment stoutly,

irregularly striated; the second and third closely, strongly, rugosely reticulated; the fourth and fifth longitudinally rugosely striated; the seventh and eighth smooth.

The middle of the front is finely closely punctured; there is a keel, margined on the top down the middle. First abscissa of the radius two-thirds of the length of the first transverse cubital nervure; the second half the length of the third; the second cubital cellule twice longer than wide; the recurrent nervure is received close to the apex of the first cubital cellule. Antennæ stout, shorter than the abdomen. Plate on second abdominal segment smooth, broader than long, narrowed to a sharp point.

Length 19 mm.; terebra 55 mm.

Southern Rhodesia. Sebakwe.

* *BACUMA FUMIPENNIS*, sp. nov.

Black, face, clypeus, malar space, base of mandibles broadly, upper inner orbits narrowly, the greater part of prothorax, base of metanotum narrowly, its apex in the centre broadly, a streak along the edge of the mesosternum, the basal four abdominal segments, a narrow line on the apex of the fifth and the apical one, rufo-testaceous; antennæ fuscous towards the apex; wings smoky; the first cubital cellule and the apex, before and behind, more hyaline; costa, nervures and apical half of stigma blackish; the basal half of stigma pale ochraceous. ♀.

Length 11 mm.; terebra 15 mm.

Cape Colony.

Face closely, irregularly reticulated, covered with black hair; there is a narrow black streak down the middle; the rest of the head smooth and shining, as is also the thorax. Parapsidal furrows distinct. First abdominal segment smooth, the apex of middle lobe laterally irregularly striated; the second, third, and fourth segments are coarsely, irregularly punctured-reticulated; the fifth and sixth are similarly, but more weakly, punctured-reticulated-striated; the rest smooth. The basal area on the second segment is wider than long, gradually narrowed to a blunt point. The alar nervures are as in the preceding species. The hypopygium is not prominent, not projecting beyond the apex of the dorsal segments; it is testaceous, streaked with black. The anterior two legs testaceous, the middle testaceous, the coxæ and under side of the femora black; the hind pair black, apex of trochanters, of femora and the tarsi testaceous.

SCHIZTOBRACON, gen. nov.

Abdomen with seven segments, the third to sixth deeply, widely depressed in the middle; the sixth with a semicircular incision in the middle and with a wider incision on the sides of the apex, *i.e.*, trilobate; the last segment broad, transverse; the second with a large, clearly limited triangular area. Radial cellule long, narrow; transverse median nervure interstitial. Wings spotted. All the abdominal segments longitudinally striated on the transverse depressions.

This genus cannot well be confounded with any of the genera of the *Braconinae*. The form of the abdomen reminds one of some of the species of *Spinaria*, but that belongs to the *Exothecinae*. Apart from the peculiar structure of the sixth abdominal segment the type of the genus might be referred to *Iphiaulax*.

SCHIZTOBRACON ORNATIPENNIS, sp. nov.

Pale lemon-yellow, the antennæ, front, vertex and upper half of occiput, the middle lobe of mesonotum to shortly beyond the middle, lateral entirely, scutellum, the greater part of the mesopleuræ, apex of mesosternum broadly, and the base of metapleuræ broadly, black. Wings yellowish-hyaline, the first and second discoidal cellules and the parts beyond the first transverse cubital nervure smoky, more hyaline along the second transverse cubital nervure; basal two-thirds of stigma luteous, the apical black. Antennæ black, longer than the body. ♀.

Length 10 mm.; terebra 4 mm.

Southern Rhodesia. Sebakwe.

Palpi testaceous. Head and thorax smooth; the face covered thickly with fuscous hair. Parapsidal furrows narrow, indicated at the base only. Middle lobe of first abdominal segment rugose; the base with a smooth, oblique slope; the second closely, longitudinally striated on the middle area; the sides irregularly wrinkled; the oblique lateral depression irregularly striated; the raised, rounded base of the segments are smooth; the striæ on the depressions are strong, regular and longish; the lobes on the sixth segments are smooth. The apical abscissa of the radius is slightly turned upwards in front; the recurrent nervure is received clearly in the apex of the first cubital cellule. Tarsi and apical two-thirds of hind tibiæ blackish.

RHOGADINÆ.

RHOGADINI.

RHOGAS, Nees.

RHOGAS MELANOCERUS, sp. nov.

Testaceous, the antennæ, apex of hind tibiæ broadly and the hind tarsi, black; wings hyaline, the nervures, costa and stigma black. ♂.

Length 7 mm.

Transvaal (Rustenburg).

Head and thorax closely, finely, distinctly punctured, the metanotum more rugosely punctured. Basal three segments of abdomen closely longitudinally striated; the longitudinal keel on the basal two distinct, on the third distinct on the middle only; the furrow on the base of the third segment is wide, crenulated. Second cubital cellule longer than wide, of equal width throughout.

RHOGAS MELANOCEPHALUS, sp. nov.

Rufous, the antennæ, head, the third abdominal segment, except narrowly at the base, and the whole of the following, black; the apex of the hind tibiæ, the greater part of the posterior and the greater part of the four anterior, blackish; wings hyaline, the stigma and nervures black; the costa and subcostal nervure at the base testaceous. ♂.

Length 9 mm.

Natal. Estcourt.

Head closely punctured, the face and clypeus more closely than the top; the face with a longitudinal keel above; a double furrow runs down from the ocelli, with two transverse keels near the top; two or three keels or striæ run from them to the eyes; the lower, outer part is obliquely striated, more closely on the outer than on the innerside; the punctuation runs into reticulations. Base of mandibles dark testaceous; the palpi black, stout, covered with white pubescence. Thorax closely punctured, more or less shagreened and striated. Scutellum narrowed towards the apex, the sides keeled. Median segment more strongly punctured than the rest; there is a fine longitudinal keel on its basal half. Basal segment of abdomen closely punctured-reticulated; the second closely longitudinally striated, the punctures interlacing; the third closely finely striated; the other segments smooth; the keels down the middle of the first and second segments are fine, not very distinct.

EXOTHECINI.

EXOTHECUS, Wesm.

This genus is represented by some of the handsomest of the South African Braconidæ. The position of the radius on the stigma varies; t may issue from beyond the middle (*forticornis*) or behind the middle (*elizabethæ*).

The following table will serve to distinguish the species :—

- | | | |
|---------|---|---|
| 1 (2). | Abdomen, legs and wings black | <i>flaviceps</i> . |
| 2 (1). | Abdomen and legs not black. | |
| 3 (6). | Wings fuscous, spotted with yellow, body testaceous. | |
| 4 (5). | Length 18 mm., keel on second abdominal segment ending in a sharp point, not bordered by furrows | <i>flavofasciatus</i> . |
| 5 (4). | Length 13 mm., keel on second segment ending in a blunt point, bordered by furrows | <i>forticornis</i> . |
| 6 (3). | Wings yellow, black at base or maculate. | |
| 7 (8). | Wings yellow at base only, the apical fuscous part with yellow spots, the hind tibiæ and tarsi black | <i>canaliculatus</i>
and <i>tibialis</i> . |
| 8 (7). | Wings yellow, spotted with fuscous; the tibiæ and tarsi black. | |
| 9 (10). | Rufous, the abdomen not black at the apex; the keel on second abdominal segment triangular, indistinct; length 19 mm. | <i>pulchripennis</i> . |
| 10 (9). | Yellow, the abdomen black at apex; the keel on second segment long, ending in a sharp point; length 13 mm. | <i>elizabethæ</i> . |

EXOTHECUS ELIZABETHÆ, sp. nov.

Pale luteous, the antennæ, the third segment except the part at the sides inside the lateral furrows, the whole of the following segments, the hind tibiæ, except their extreme base and the tarsi, black; wings yellowish hyaline, a narrow smoky cloud at the base of the stigma, extending from the base of the first discoidal cellule obliquely to the apical lower angle, it becoming narrowed towards its apex, a small rounded cloud on the apex of the second discoidal, the apex of the radial cellule, except the extreme base, the cloud above continued round the top, the apex and round the lower apical margin and along the anal nervure to shortly behind the middle; and there is a small smoky cloud in the apex of the hind wings. ♂.

Length 13 mm.

Cape Colony. Port Elizabeth.

Smooth and shining; the face covered with longish fuscous hair. Antennal scape twice longer than its width at the apex. Tips of mandibles black. Plate on second abdominal segment reaching to

the base of the apical fourth, becoming narrowed towards the apex, but not to a sharp point; the narrowed apex is keeled above and is bordered laterally by a deep depression, rounded on the outer side and continued backwards to near the base of the keel; the lateral furrow is deep, moderately wide, and extends from the base to the apex; there are distinct, smooth furrows, with distinct, oblique lateral branches on the base of the third, fourth and fifth segments.

EXOTHECUS PULCHRIPENNIS, sp. nov.

Ferruginous; the antennæ, hind tibiæ and tarsi black; the upper and lower side of mesothorax tinged with black; wings yellowish hyaline, an irregular cloud extending from the apex of the costa across the transverse basal to shortly below its middle, more narrowly on the base of cubitus, irregularly, obliquely across the first discoidal cellule, it being narrowed to a point, a smaller cloud in the second discoidal, occupying the apex, narrowed in front, the apex with a longer slope than the base; a cloud round the apex of the wing, irregularly dilated towards the second cubital cellule, where it is narrowed with a dilated part on its base in the middle; the apex of the hind wings, the cloud continued along the lower side of the cubitus to near the middle of the wings, it becoming gradually wider towards the base; above it and reaching to the apex is an irregular cloud. ♀.

Length 19 mm.; terebra 22 mm.

Cape Colony. Neighbourhood of Cape Town.

Face rugosely punctured, the clypeus and a large space on either side of it smooth. Smooth, shining; the metanotum and base of abdomen pilose. Area on second segment triangular, as long as its width at the base, not very clearly defined at the apex, which does not quite reach to the middle. Antennal scape about four times longer than wide, as in *E. flavofasciatus*. Hypopygium short, not projecting much beyond the apex of the last dorsal segment.

EXOTHECUS FLAVICEPS, sp. nov.

Black, the head yellow; the pro- and mesothorax red; the anterior legs testaceous; wings dark fuscous, iridescent, tinged with violaceous, a yellowish-hyaline cloud on either side of the second transverse cubital nervure, extending shortly beyond the cubitus, and broadest on the outer side. ♀.

Length 16 mm.; terebra 10 mm.

Natal. Malvern.

Smooth and shining. Metanotum and base of abdomen covered with long black hair. Area on second abdominal segment, gradually narrowed from the base to the apex, which is bluntly pointed; it is about one-third longer than its width at the base; it reaches to the base of the apical third of the segment; the furrows are smooth; the suturiform articulation has a distinct lateral apical branch. The third abscissa of the radius is shorter than the second.

EXOTHECUS FLAVOFASCIATUS, sp. nov.

Head and thorax dark, the abdomen light ferruginous, the mesonotum black; the second abdominal segment yellowish; legs coloured like the head and thorax; the hind tibiæ and tarsi blackish; wings dark fuscous, iridescent, slightly tinged with violaceous; a broad, clear yellowish hyaline cloud on either side of the second transverse cubital nervure, extending slightly into the radial cellule and more broadly into the discoidal, at the transverse cubital nervure; stigma testaceous, the costa and nervures black. ♀.

Length 18 mm.; terebra 21 mm.

Cape Colony. Neighbourhood of Cape Town.

Smooth and shining; the median segment thickly covered with fuscous pubescence; the base of abdomen more sparsely with long fuscous hair. Upper half of face closely rugosely punctured, the lower smoother, only sparsely punctured. Abdomen as long as the head and thorax united; the area on second segment distinct, gradually narrowed to a sharp point, not reaching to the base of the apical third of the segment; the furrows are smooth; the base of the third segment and a thin transverse line on the base of the fourth yellow. The third abscissa of the radius is shorter than the second; the recurrent nervure is received not quite the length of the first abscissa of the radius from the apex of the cellule; the transverse median double its length from the transverse basal.

? *EXOTHECUS FORTICORNIS*.

Reddish luteous, the antennæ black, the hind tibiæ from near the base and the hind tarsi blackish; wings fuscous, a yellowish-hyaline cloud in the first cubital cellule, extending into the discoidal, and a larger one on either side of the second transverse cubital nervure, extending into the discoidal and radial cellules; the costa and stigma pale yellow, the apex of the former black. ♀.

Length 13 mm.; ovipositor 15 mm.

Transvaal. Potchefstroom.

Antennæ stout; the scape shining, sparsely covered with black hair; it is not quite three times the length of the width of the apex; the third joint is slightly longer than the fourth. Front and vertex smooth; the temples longer than the eyes, rounded behind. Middle of face smooth, clearly separated; the sides sparsely punctured. Mandibular teeth black. Parapsidal furrows distinct only on the basal slope. Abdomen not quite so long as the head and thorax united; smooth, bare, shining; the area on the second segment large, wide, reaching to shortly beyond the middle of the segment, bordered by wide, deep furrows; its apex not narrowed to a point, transverse, half the width of the base. Second abscissa of radius slightly longer than the third; recurrent nervure received in first cubital cellule; second cubital cellule about three times longer than wide; the radius issues from shortly beyond the middle, thereby differing from *Exothecus* as defined by Szépligeti, *Genera Ins. Braconidæ*, i., 50, in which it is inserted behind the middle. Suturi-form articulation narrow, smooth; it is the only transverse furrow. The antennæ are shorter, stouter than usual, and not narrowed at the apex.

EXOTHECUS CANALICULATUS, Cam.

Annals Albany Museum, i., 167.

This species is in the collection from Mossel Bay and East London in Cape Colony and from Durban in Natal.

The size of the yellowish-hyaline spots at the transverse cubital nervures varies; on the second it may extend into the radial and discoidal cellules. The ovipositor is 16 mm. long. The ♀ appears to be, in collections at least, rare compared with the ♂. *E. tibialis*, Cam. (*Records Alb. Mus.*, i., 156), is probably only a small form.

TELERDA, gen. nov.

Abdomen closely striated all over; the basal segment short, sessile, broader than long; the second segment with a large triangular area; all the segments separated by deep, crenulated furrows; the second furrow without a lateral branch; there are seven segments. Metanotum punctured, deeply furrowed down the middle. Parapsidal furrows distinct; there is no pleural furrow; apex of mesonotum with a large squarish depression in the middle, commencing at the end of the basal lobe. Temples as long as the eyes, rounded behind. Radial cellule long, reaching to the end of the wing, commencing at the middle of the stigma; it is not quite so long as the basal two

united; the basal abscissa half the length of the second, not quite so long as the first transverse cubital nervure; recurrent nervure received close to the apex of the first cubital cellule. Antennal scape short, ovate; the second joint is longer than the third. There are more or less distinct longitudinal furrows on the centre of the abdominal segments. Hind coxæ long. Post-scutellum stoutly keeled down the middle on the basal half, the keel touching the apex of the scutellum. Stigma lanceolate. Transverse median nervure received beyond the transverse basal. Malar space longish.

Characteristic of this genus are the punctured metanotum, furrowed down the middle, closely striated abdomen, with the segments deeply separated and furrowed down the middle, and short, broad, sessile first segment. The two species known to me may be separated as follows:—

Reddish, with black head; wings fuscous, with two hyaline clouds near the stigma *nigriceps*.
 Yellowish luteous, wings fuscous, yellow at the base, the head yellow, with a large black mark. *maculiceps*.

TELERDA NIGRICEPS, sp. nov.

Reddish-ferruginous; the head, except a line above and below on the inner orbits, the clypeus, a line, longer than it and narrowed above, projecting from it, this part being keeled, the malar space and apex of mandibles, black; the face sparsely haired, the front finely aciculated. Basal joints of palpi black, the apical testaceous. Lower part of prothorax at the base, a large oval mark on the middle of mesopleuræ and tegulæ, black. The metanotum covered with fuscous hair; it is sparsely, but strongly punctured; the furrow widens out gradually towards the apex. Abdomen closely, regularly longitudinally striated, the striæ interlacing, forming almost reticulations on the sixth segment; the penultimate is more strongly, sharply striated; the last is smooth, with black cerci. The basal half of the costal and submedian cellules smoky, the apical fuscous-yellowish; the first cubital cellule broadly in the middle and a cloud outside the recurrent nervure hyaline; the stigma red, black at the apex. ♀.

Length 12 mm.; terebra 2 mm.

* TELERDA MACULICEPS, sp. nov.

Luteous, the antennæ, a large mark on the front and vertex prolonged as a small triangle on to the top of the occiput, black; the base of the second abdominal segment, the greater part of the third

and the sides of the others suffused with black; the ventral surface deep black; wings fuscous, the basal third yellowish hyaline in both wings, the yellow part becoming obliquely widened towards the costa. ♀.

Length 13 mm.; terebra 3 mm.

Cape.

Occiput, front and vertex sparsely covered with longish black hair; the face and oral region more thickly with longer paler hair. Thorax shining; the median segment strongly, but not closely punctured; the furrow becomes gradually widened at the apex; the narrowed basal part is obscurely striated. Abdomen strongly, closely, sharply longitudinally striated, the striæ becoming stronger towards the apex; the furrows deep, crenulated; the longitudinal furrows narrow, not very distinct; the segments densely covered with pale pubescence; the striæ in places appear of a golden hue. The furrows bordering the area on the second segment are obscurely striated.

The wings in this species are more ample than in *nigriceps*.

DORYCTINÆ.

LATANA, gen. nov.

Cheeks stoutly margined. Face and malar space deeply excavated. Front depressed in the centre. Transverse basal nervure interstitial; the recurrent received in the first cubital cellule. Abdomen as in *Iphiaulax*, with a smooth area on the second segment. Antennæ issuing from broad raised tubercles, bordered on the outer side by a projecting rounded plate; third joint of antennæ longer than the fourth. Radial cellule long, reaching to the apex of the wing; the second cubital cellule twice longer than wide. Metatarsus shorter than the following two joints united.

If it were not for the margined cheeks this genus might be considered an *Iphiaulax*. The first abscissa of the radius is not longer than the thickness of the middle of the stigma, much shorter than the second; the basal two joints of the fore tarsi are as long as the tibiæ; the fifth not double their length. Penultimate abdominal segment short; the hypopygium long. The trophi form a large mass.

In the arrangement of Szépligeti this genus would come in near *Gymnobracon* and *Osmophila*.

LATANA EXCAVATA, sp. nov.

Luteous, the antennæ, the front, the vertex to shortly beyond the end of the eyes and the middle broadly to the occiput and the hind tibiæ and tarsi, black; wings fuscous, a paler, broad cloud beyond the stigma; the costa, nervures, and apical half of stigma black; the basal half of stigma pale ochraceous; the recurrent nervure is received in the apex of the first cubital cellule. ♀.

Length 7 mm.; terebra 5 mm.

Natal. Durban.

Face largely and deeply excavated, the excavation longer than its width below; the top half narrowed obliquely, the width of the bottom. Malar space excavated. Temples as long as the eyes, rounded behind. Head and thorax smooth and shining. Abdomen closely longitudinally striated; the area on second segment smooth, narrowed to a point; suturiform articulation wide, deep, crenulated.

ACANTHOBRACON, Kriechb.*ACANTHOBRACON MACULICEPS*, sp. nov.

Reddish luteous, the antennæ, the space below the antennæ, front and vertex broadly, the band on the latter continued as a semi-circular mark on to the top of the occiput, black; the pro- and mesothorax suffused with fuscous; wings fuscous, an oblique hyaline cloud in the first cubital cellule and one dilated below on the outer side of the recurrent nervure; the costa, stigma, and nervures black. ♀.

Length 13 mm.; terebra 7 mm.

Mozambique. Delagoa Bay.

Head, pro-, and mesothorax smooth; the propleuræ with a wide band of stout striæ on the middle depression; the furrow on the base of the mesopleuræ wide, curved, crenulated; there is a narrower crenulated furrow along the outer edge of the mesosternum. Metanotum reticulated, more widely and irregularly on either side of a longitudinal keel on the basal part; the metapleuræ from shortly above the middle irregularly, somewhat strongly punctured. The first abdominal segment entirely, the second to near the apex, and the base of the third, fourth, and fifth broadly striated, the striæ becoming gradually weaker; the suturiform articulation roundly curved, strongly crenulated. The second cubital cellule is short, longer than wide, of equal width throughout; the third abscissa of the

radius more than twice the length of the basal two united; the apical abscissa of the cubitus not quite so long as the basal two united; both are thickened at the base. Face coarsely irregularly rugose-reticulated; a wide deep furrow on the top and a narrower one on either side of the clypeus. Scape stout, densely pilose, as long as the eyes. Coxal tooth stout, curved, narrowed towards the apex, projecting slightly beyond the apex of the coxæ.

* *ACANTHOBRACON NIGRIPES*, sp. nov.

Black; the metanotum, abdomen, and tegulæ pale orange-yellow; the anterior wings yellowish hyaline to the transverse median and transverse basal nervures, dark fuscous beyond; the posterior hyaline, only slightly tinged with yellow, the apex smoky. ♀.

Length 10 mm.; terebra 4 mm.

Transvaal.

Face coarsely, rugosely punctured-reticulated; the top depressed in the centre, with a smooth longitudinal keel; oral region above with a tuft of long testaceous hair. Front, vertex, outer orbits, and malar space smooth and shining, almost bare. Pro- and mesothorax smooth and shining; the base of pronotum raised, irregularly reticulated; the propleuræ with a wide crenulated furrow below the middle; there is an oblique, irregularly crenulated furrow below the tegulæ; there is a deep, crenulated furrow above the sternum, commencing at the base but not extending to the apex. Median segment strongly, closely irregularly reticulated, the pleuræ more strongly than the rest. Basal segment of the abdomen strongly closely striated; the second more finely striated near to the apex, which is smooth, as is also the rest of the abdomen. The oval transverse area on the second segment is clearly defined; the furrows are crenulated. Parapsidal furrows irregularly crenulated at the apex. Apical slope of scutellum closely strongly striated. Post-scutellum stoutly keeled in the middle. Basal coxal spine long, curved, sharply pointed; the lower spine much shorter, blunter, roundly sloped above, the lower part straight. Apical abscissa of radius longer than the basal two united; the second cubital cellule almost square, but widest at the base; the recurrent nervure is received near its apex.

ODESIA, gen. nov.

Transverse median nervure placed behind the transverse basal, the median cellule therefore shorter than the costal; radial cellule

short, the radius ending half-way between the stigma and apex of the wing; second cubital cellule much narrowed in front, the first and second transverse cubital nervures converging in front. Occiput not margined. Malar space nearly as long as the antennal scape. Mesonotum trilobate. Abdomen narrow, of equal width, longish; there is no area on the second segment; it is indistinctly keeled down the middle; the third and fourth are keeled throughout. Antennæ and ovipositor very long.

This does not fit very well into any of the sections into which the *Braconinæ* are divided. The *Braconini* have the transverse median nervure interstitial; in the *Exothecini* it is received beyond the transverse basal; in the *Aphrastobraconini* it is as in the present genus; but then the type and only genus (*Aphrastobracon*) has the eyes large, extending to the base of the mandibles, there being no malar space; also it has a long radial cellule, extending to the tip of the wings.

ODESIA LONGICORNIS, sp. nov.

Testaceous, the antennæ, tips of mandibles, a large, longish mark on each lobe of the mesonotum, the greater part of the first abdominal segment, a large mark, narrowed towards the apex on the centre of the second and two marks, longer than wide, on the base of the third and fourth segments, black; wings hyaline, the apex of the anterior from near the second transverse cubital nervure, dark smoky. ♀.

Length 10 mm.; terebra 20 mm.

Southern Rhodesia. Sebakwe.

Face distinctly, but not closely punctured; a smooth space in the middle below. Pro- and mesothorax smooth; the metanotum, except at the base, closely, distinctly punctured; the pleuræ are not so closely, but fully more strongly punctured. Apex of first abdominal segment in the middle closely, transversely rugose; the others closely striated-punctured longitudinally; suturiform articulation deep, crenulated; there is a curved, weakly crenulated furrow on the base of the fourth segment and a weaker one on the fifth. Basal two abscissæ of radius equal in length; both united are shorter than the apical. The second cubital cellule is clearly narrowed in front; the recurrent nervure is interstitial.

ICHNEUMONIDÆ.

OPHIONINI.

HENICOSPILUS, Steph.

HENICOSPILUS NATALENSIS, sp. nov.

Rufous, the apex of the abdomen infuscated, the eye orbits ivory-white, the palpi pale testaceous; wings hyaline, the stigma fuscous, paler in the middle, the nervures black, except the thickened base of the radius which is rufo-testaceous; the horny points pale, conical, the basal larger than wide, the apical not much longer than its width at the base. Transverse basal nervure interstitial. Basal abscissa of cubitus half the length of the recurrent which is received far behind the apex of the basal abscissa of the radius. ♀.

Length 13 mm.

Natal. Newcastle.

The yellow line on the inner orbits is narrow, on the outer it is broader, about half the width of the temples. Face closely, minutely punctured. Ocellar region much raised, tinged with yellow. Scutellum transversely aciculated; the keels weak towards the apex, where they are wide apart; the lateral slopes closely, strongly striated; the sides of post-scutellum weakly keeled; the sides somewhat strongly, obliquely striated. Base of metanotum irregularly longitudinally striated in the middle; the part behind the keel strongly aciculated, the rest closely, irregularly transversely reticulated. Pro- and mesopleuræ closely, distinctly punctured; the sides of the latter obscurely striated; the metapleuræ closely, obliquely, and somewhat closely striated. The tibiæ and tarsi are paler than the femora; the fore tarsi are paler than the others. The discoidal cellule is narrow, compared with its greatest width, which is less than the space between it and the radius opposite its widest part. The thickening on the radius is only conspicuous on the basal half.

This species comes close to *H. rufus*, Bé., the latter is larger, has only one horny point in the wings, has the eye orbits largely white, and the apical three or four abdominal segments are black.

HENICOSPILUS DAMARENSIS, sp. nov.

Uniformly pale yellow; the antennæ rufous; wings hyaline, the stigma pale yellow, the costa darker coloured, the nervures blackish. The head is more distinctly yellow than the body; face closely, but not very strongly, punctured; the clypeus sparsely punctured, its

apex almost transverse. Ocelli very large, rufous. Sides of scutellum keeled; the keels not meeting at the apex, towards which they become fainter; the lower part of the apex is bordered by a stouter, more rufous, rounded keel. Base of metanotum deeply, widely depressed; there are no transverse keels; the surface, beyond the basal depression, is irregularly obliquely, not very distinctly striated, punctured. Propleuræ smooth; the mesopleuræ closely punctured, closely obliquely striated in the middle; the upper part of metapleuræ somewhat stoutly, obliquely striated. Apical abscissa of radius roundly curved towards the front; transverse cubital nervure half the length of the recurrent, as long as the apex of the third discoidal cellule. The transverse median nervure is received behind the transverse basal. The basal horny point is triangular, its base rounded; the second irregularly crescent-shaped. ♀.

Length 17 mm.

Damaraland. Walvisch Bay.

PLEURONEUROPHION, Ashm.

PLEURONEUROPHION PRUINOSUS, sp. nov.

Rufous, densely covered with a whitish, silky pile; the eye orbits narrowly on the lower half of the inner, the outer from the inner edge of the lateral ocelli ivory-white; wings hyaline, the stigma dark rufous, the costa and nervures black. Antennæ black, dark rufous at the base. ♀.

Length 33 mm.

Natal. Durban.

Head, pro- and mesothorax smooth; the metanotum behind the basal keel irregularly wrinkled; the rest coarsely, transversely, closely reticulated. Scutellum with a stout keel bordering the sides; they meet at the apex in the middle, where they are continued half-way down the apical slope as one; the apical half has a blistered appearance and is covered with white pubescence; the lateral slopes behind the keels are more thickly covered with longer, soft white pubescence; there are four or five longish stout keels on the apical slope. Post-scutellum clearly separated by a depression from the scutellum; it is transverse at the base, the apex roundly narrowed; its apex has a longish steep slope, and is keeled down the middle. Petiole cylindrical; the post-petiole distinctly widened. Transverse median nervure received distinctly behind the transverse basal; the disco-cubital nervure broadly rounded beyond the middle, not angled. Transverse median nervure in hind wings broken near the top of the lower third.

This species differs from the normal species of the genus in the disco-cubital nervure being broadly rounded, not angled, and in the transverse median nervure in the hind wings not being broken so low down. The only African species of its size is *Enicospilus trimaculatus*, Tosq.

I have a ♂ without note of a particular locality in my collection ; it is about 30 mm. long.

EURYOPHION, gen. nov.

Wings uniformly fuscous violaceous ; the base of radius thickened, transverse median nervure received very shortly beyond the transverse basal, almost interstitial ; radial cellule long, narrow. Disco-cubital nervure not broken, the curve rounded ; not interstitial. Transverse median nervure in hind wings broken in the middle. Apex of clypeus transverse. Malar space very small. Eyes parallel, not incised. Ocelli widely separated from each other, and, to a less extent, from the eyes. Median segment bearing stout, irregular, curved keels. Spiracles of second abdominal segment placed shortly beyond the middle. Claws pectinated. Scutellum roundly convex, its sides not keeled. Both the thorax and abdomen are stouter, broader than usual.

The apical abscissa of radius is not appreciably turned up towards the costa as in *Ophion*, &c. ; the radial cellule is long and narrow. The radius in the hind wings is thickened at the base. The transverse basal nervure in fore wings is also thickened. Mesosternum flat ; its sides bordered by a wide, shallow furrow, roundly narrowed on the inner side. There are no blisters in the fore wings.

A distinct genus. Characteristic are the blackish wings. *Ophion* differs in having the disco-cubital nervure broken by a stump of a nervure, in the eyes converging above, in the basal abscissa of the radius not being swollen, and in the metanotum being smooth, with only a transverse keel. *Pleuroneurophion* has the basal abscissa of the radius swollen (as has also *Enicospilus*, which has, however, blisters in the wing) but the eyes distinctly converge above, the disco-cubital nervure is sharply angled, the transverse median nervure in hind wings is broken far, or at least distinctly, below the middle, and the transverse median nervure is placed behind the transverse basal.

EURYOPHION NIGRIPENNIS, sp. nov.

Dark ferruginous, the third and following segments of the abdomen black ; wings dark fuscous, tinged with violaceous, the nervures and

stigma black ; the costa and base of stigma dark ferruginous. Head and thorax closely, distinctly, but not very strongly punctured and covered closely with a short pale pile. Scutellum more closely, rugosely punctured than the mesonotum. Base of metanotum depressed ; the keels commence at the apex of the depression ; there is a keel down the centre, from its base one runs round the edges ; there is an area on the outer edge in the middle, straight on the outer side, roundly narrowed on the inner. The basal abscissa of the cubitus is as long as the recurrent nervure. Abdominal petiole dilated beyond the stigma. The eyes are very black and shining. Abdomen strongly compressed, broader than usual viewed from the sides, sabre-shaped ; it becomes gradually wider from the base of the second segment. The antennæ are shorter and thicker than usual (shorter than the abdomen) ; they taper towards the apex. ♀.

Length 28 mm.

Natal. Durban.

OPHIONEURA, Cam.

To the description of this genus (Records Albany Museum, i., 147), should be added : Apex of clypeus triangularly incised. I have two species to add to the genus. The three may be separated as follows :—

Head and thorax rufous marked with yellow, legs with
coxæ rufous *flavomaculatus*, Cam.

Head and thorax black, marked with yellow ; legs
rufous, the coxæ and trochanters black, marked with
yellow.

Face, centre of mesonotum, and pleuræ immaculate. . . *rufidens*.

Face, centre of mesonotum, and pleuræ maculate . . *bidentatus*.

OPHIONEURA RUFIDENS, sp. nov.

Black ; the abdomen, except the first segment, ferruginous, a line on the inner orbits, a broader one on the outer, two triangular spots on the sides of the mesonotum at the base ; the scutellums, a large mark on the apical half of the metanotum, tripartate at the base, the projections narrowed to a point, the central being the longer and sharper, yellow. Legs ferruginous, the four anterior coxæ and trochanters for the greater part yellow, the hinder black, the coxæ with a large mark above ; the hind tarsi black. ♂.

Length 16–17 mm.

Cape Colony. Grahamstown.

Face and clypeus strongly and closely punctured, the sides of the latter smooth. Front and vertex strongly punctured, the centre of the former strongly, closely transversely striated. Clypeal teeth large, broad, rufous as is also the apex of the clypeus; their inner side straight, oblique, the outer rounded. Pro- and mesothorax closely, strongly punctured; the apex of the mesonotum depressed in the middle, irregularly reticulated. Scutellum closely, but not very strongly punctured. Post-scutellum striated. Base of metanotum depressed, bordered behind by a curved keel; the rest reticulated; the pleuræ below the keel more closely rugosely punctured, the punctures running into reticulations at the apex. First abdominal segment smooth and shining.

OPHIONEURA BIDENTATUS, sp. nov.

Black; the second and following segments of the abdomen rufous; the eye orbits all round, the line narrowed above, the face, except for a square black mark in the middle, joined to the black of the clypeus by a short peduncle; the black below with two irregular yellow marks; the apex of the clypeus, except for a reddish line below, mandibles except at the apex, two large marks, rounded on the inner and narrowed at the base and with the apex slightly roundly incised, a line along the tegulæ, two short lines in the middle opposite them, scutellums, metanotum, except for two large marks at the base, slightly narrowed and rounded at the apex, a longish mark below the tegulæ, one longer than wide at the base below it, a small irregular one below its apex, a large curved, broad line on the apical two-thirds below, and the apex of the metapleuræ largely in the centre, yellow. Legs rufous; the hinder darker coloured; the fore tarsi paler, more yellowish in tint; the four anterior coxæ and trochanters yellow; the hinder coxæ and trochanters black; the coxæ largely yellow above; the hind tarsi black. Wings hyaline, the stigma and nervures black. ♂.

Length 17 mm.

Cape Colony. Grahamstown.

STICTOPHION, gen. nov.

This genus has the neururation of *Ophioneura* and *Erythroption* here described. The three genera may be separated thus:—

Sides and apex of scutellum not keeled; base of metanotum areolated; body largely marked with yellow *Ophioneura*.

Sides and apex of scutellum keeled, base of metanotum keeled,
body not maculate with yellow.

Tibiæ (especially the four anterior) thickened, contracted at
the base, body red *Erythrophion*.

Tibiæ slender, not contracted at the base, body black *Stictophion*.

Head, seen from the front, long, owing to the longish malar space. Clypeus not separated from the face, its apex bidentate. Scutellum roundly convex, its sides keeled, bordered on the inner side by a furrow. Median segment coarsely rugosely punctured; its spiracles large, linear. Abdomen long, slender, compressed; the petiole narrow, cylindrical, its spiracles placed at the base of the apical third; those of the second in the middle. Radial cellule short, not reaching to the apex of the wing; transverse median nervure interstitial; recurrent nervure received behind the transverse cubital; transverse median nervure in hind wings unbroken.

Ophioneura is further known from the two genera here described by the very short malar space, the head therefore not being rostriform.

The temples are broad; the occiput margined, roundly incised. Mandibles unequally bi-dentate, the posterior much shorter than the anterior, bluntly rounded, not projecting; the apex of upper bluntly rounded. Legs slender; the spurs minute; hind tarsi stout, spinose. Basal two joints of flagellum of antennæ about equal in length; the scape ovate, about twice longer than wide. Base of metanotum without keels.

The two species known to me may be separated thus:—

Legs, the stigma, and base of antennæ black *nigricans*.

Legs red, the stigma testaceous, base of antennæ red *rufipes*.

STICTOPHION RUFIPES, sp. nov.

Black, the legs, except the coxæ, red; the second and third segments of the abdomen of a more obscure red colour; wings hyaline, the costa and stigma testaceous, the nervures black. ♂.

Length 14–16 mm.

Cape Colony. Cape Town.

Basal half of mandibles red on the inner side. Head thickly covered with white hair; the face closely, strongly punctured, the sides on the upper part raised into a fold; clypeus more strongly, irregularly punctured, especially in the centre at the apex, where the punctures run into striæ. Front and vertex strongly and closely punctured; the former transversely striated in the middle. The

face and clypeus are more densely covered with white pubescence than the rest of the head; on the temples it is longer. Pro- and mesothorax closely, coarsely punctured, densely covered with white pubescence; the apex of the propleuræ coarsely irregularly striated; the punctures on the middle of the mesopleuræ run into striæ. Median segment more coarsely, rugosely punctured, densely covered with white hair; the punctuation in the middle runs into reticulations.

There is a small reddish spot close to the eyes, opposite the posterior ocelli; the hind tibiæ and tarsi may be blackish.

STICTOPHION NIGRICANS, sp. nov.

Black, the anterior femora, tibiæ, and tarsi lined irregularly with testaceous in front; the head and thorax covered with a short, white pubescence; the abdomen and legs with a white pile; wings hyaline, highly iridescent, the nervures and stigma black. ♂.

Length 16 mm.

Cape Colony. Cape Town.

Face closely, strongly punctured; the clypeus more strongly, but also more sparsely and irregularly; the malar space with an opaque, coarsely aciculated band on the inner side; the rest of the head is more strongly, if not quite so closely punctured. Pro- and mesothorax more strongly punctured than the head; the lateral lobe of the mesonotum is coarsely irregularly punctured at the base. Scutellum with a few large punctures at the base; the apex more finely and closely punctured; its sides are raised, furrowed on the inner side, the furrow irregularly striated. Post-scutellum rugosely punctured. Median segment coarsely, irregularly reticulated, the base in the middle more rugosely punctured than reticulated; the basal curved keels are not very distinct, and, on the inner side, merge into the punctuation. The furrows at the sides of the post-scutellum are wide, stoutly striated and with a raised border on the outer edge. Metapleuræ obliquely, irregularly striated, the striæ strongest in the middle, where they are twisted.

ERYTHROPHION, gen. nov.

Face elongate, malar space large, the clypeus largely projecting beyond it; its apex ending into two stout, clearly separated teeth. Scutellum stoutly keeled laterally, gradually, roundly depressed from the base to the apex. Metanotum rounded at the base, reticulated-punctured, without keels. Spiracles large, linear. First

abdominal segment, long, curved, slender; its spiracles close to the apex; the spiracles of second segment close to the middle; ovipositor long. Four front tibiæ thicker than the femora; their base distinctly contracted. Radial cellule short, its apex widely distant from the apex; the recurrent nervure received behind the transverse cubital; transverse median nervure interstitial; median nervure in hind wings unbroken. Clypeus not separated from the face.

The affinities of this genus are with *Ophiononeura* Cam.; that genus may be known by the tibiæ not being distinctly contracted at the base, by the longer radial cellule, by the sides of the scutellum not being stoutly keeled, and by there being two areæ on the base of the metanotum.

ERYTHROPHION FERRUGINEUS, sp. nov.

Ferruginous, the apex of the abdomen darker coloured; the wings short, hyaline, highly iridescent, the stigma dark rufous, the costa and nervures blackish. Face strongly and closely punctured, the clypeus much more strongly, but also much more sparsely punctured. Apical half of mandibles black. Palpi dark fuscous. Pro- and mesothorax closely and strongly punctured; the mesonotum irregularly transversely striated. Metanotum closely, stoutly, irregularly reticulated; the base less strongly so; the apex in the middle transversely striated, where it is depressed. Metapleuræ irregularly, widely reticulated, much more closely below, the lower part rugosely punctured; bordered below by a stout keel. Base of mesosternum bordered by a stout, deep furrow. ♀.

Length 13–15 mm.; terebra 7–8 mm.

Cape Town. Stellenbosch.

ANOMALONINI.

TRICHOMMA, Wesm.

? TRICHOMMA BREVIPENNE, sp. nov.

Black, the palpi, the four front legs except the coxæ, lemon-yellow, the apical joint of the hind trochanters, femora and tibiæ red, their tarsi black; the basal segment of the abdomen and the apices of the third and fourth dark red; wings short, not much more than half the length of the abdomen; hyaline, the costa, stigma, and nervures black. ♂.

Length 11 mm.

Cape Colony. Neighbourhood of Cape Town.

Hind wings with the apical nervures entirely obliterated, *i.e.*, the radius and cubitus; there is only one basal cellule. Face and clypeus closely rugosely punctured, the punctures (especially above) running into close reticulations, covered with white pubescence. Mandibles broadly rufous at the apex. Front and vertex rugosely punctured, more or less striated laterally. Thorax closely rugose; the upper part of the mesopleuræ for the greater part longitudinally striated, the striæ more or less curved, stout. Scutellum flat, coarsely alutaceous, without distinct punctures. Metanotum with three basal areæ; the central is the smaller, and is open at the apex; the lateral open at the apex on the outer side; the centre is transversely striated. On the upper half of the base of the metapleuræ are a number of stout, irregular longitudinal striæ, bordered at the apex by a keel running from the top to the bottom. Abdominal petiole not so long as the following three segments united, slender, its apical third distinctly nodose.

The eyes do not converge more below than they do above. Clypeus not separated from the face. Temples very short; the occiput transverse. Tibiæ and tarsi spinose; the long spur of the hind tibiæ more than half the length of the metatarsus. Hind trochanters shorter than the coxæ, the basal joint on the outer side shorter than the apical, longer on the inner. The eyes are distinctly incised on the inner side. The hind tarsi are slender, the basal joints not dilated.

I am in doubt about the generic position of this species. The eyes do not appear to be hairy, but this may be owing to the pubescence having been rubbed off. The hind wings, too, are more deficient in nervures than in typical *Trichomma*; the hind trochanters are shorter, the scutellum flatter, and the thorax broader at the base than in that genus. The generic location must remain in doubt until fresh specimens have been examined. The pubescence on the eyes is liable to be rubbed off, as I find to be the case with an Oriental species of *Trichomma* I have examined.

? *TRICHOMMA CARINISCUTUM*, sp. nov.

Black, the four front legs, except the coxæ, stramineous, the hind legs, except the coxæ and trochanters, rufous; wings short, hyaline, the nervures and stigma black. Abdomen red, the extreme base of first segment, the upper part of the second, and the sixth and seventh black. ♂.

Length 10 mm.

Natal. Frere.

Face and clypeus thickly covered with longish white pubescence, as is also the eye incision. Front and vertex opaque, alutaceous; the former keeled in the middle. Mesonotum closely rugose; the scutellum flat, finely coriaceous. Metanotum finely rugose, thickly covered with white longish pubescence; an irregular, semicircular area on either side at the base; the centre closely transversely striated; the middle with two longitudinal keels diverging at the apex. Apical half of propleuræ strongly, obliquely striated; upper half and apex of mesopleuræ less strongly longitudinally striated; there is a longitudinal, oblique keel above the middle of the metapleuræ; the part above it is closely, rugosely punctured, below irregularly obliquely striated, the striæ clearly separated; the base above has a keel running from the top to below, and having a few striæ forming areæ inside it.

The recurrent nervure is received almost the length of the transverse cubital nervure beyond the latter; there are two basal cells in the hind wings, the anterior being the larger. Antennæ shorter than the abdomen. Post-scutellum keeled in the middle. Antennæ stout, shorter than the abdomen.

As in ? *T. brevipenne*, I cannot find any pubescence on the eyes. The two may be easily separated:—

The second to fifth segments black; post-scutellum not keeled; the keels on the base of metanotum straight on the inner side, forming an area of equal width.	<i>brevipennis</i> .
The second to fifth segments rufous; post-scutellum keeled; the keels on base of metanotum oblique, the area consequently widest at the apex	<i>cariniscutis</i> .

ODONTAGRYPON, gen. nov.

Transverse median nervure in hind wings not broken. Parallel nervure received near the top, the discoidal cellule therefore much narrowed at the base, not half the width of its apex. Transverse median nervure received shortly beyond the transverse basal; the recurrent nervure received shortly beyond the transverse cubital. Apex of clypeus rounded, its middle armed with a short, but distinct tooth. Front keeled in the middle. Parapsidal furrows obsolete. Scutellum roundly convex, keeled laterally at the base. Apex of median segment prolonged into a point; the spiracles about three times longer than wide. Hind spurs longer than the width of the apex of the tibiæ. Antennæ not much shorter than the body. Hind tarsi not much thickened; the claws not pectinated. Basal joint of the hind trochanters twice the length of the apical. Mandibular teeth unequal, the upper larger than the lower.

The alar neuration (including the unbroken transverse median nervure in hind wings) is pretty much the same as in *Agrypnon* and *Atrometus*, but the toothed apex of clypeus separates it from these genera. The hinder metatarsus is longer, compared with the other joints, than it is in *Agrypnon*. The two African species known to me may be separated thus:—

Mesonotum broadly black in the middle, hind coxæ immaculate,	
front not keeled	<i>silonotus</i> .
Mesonotum immaculate; hind coxæ broadly black in the middle;	
front keeled	<i>carinifrons</i> .

ODONTAGRYPON SPILONOTUS, sp. nov.

Rufous; the face, clypeus, mandibles, except at apex, and palpi yellow; the greater part of the front, middle of vertex, occiput, the middle of mesonotum broadly (the line dilated broadly at the base and to a less extent at the apex), the parts bordering the scutellums, the base of metanotum narrowly, the apex more broadly, the propleuræ, except for an elongated mark—somewhat triangular in shape—above, the lower part of the mesopleuræ broadly (the black on the basal half extending higher up than on the apical), the base narrowly—the line broadest above—and the lower half of the meta-pleuræ and the breast, black. Apical two segments of the abdomen black. Legs of the rufous colour of the thorax. Antennæ dark rufous, the basal three joints black above, the scape yellowish below. Wings hyaline, the stigma dark testaceous, the nervures black. ♂ and ♀.

Length 13–14 mm.

Cape Colony. Stellenbosch.

Head and thorax thickly covered with long white pubescence. Face and clypeus closely, somewhat strongly punctured, except along the edges; the front and vertex are more strongly rugosely punctured, the punctures running in the centre into reticulations. Occiput strongly margined, sparsely punctured above. Pro- and mesothorax strongly punctured, the punctures clearly separated; the apex of mesonotum finely, closely transversely striated. Scutellum, if anything, more strongly punctured than the mesonotum. Median segment coarsely punctured; in the centre the punctures run into reticulations.

* ODONTAGRYPON CARINIFRONS, sp. nov.

Rufous; the face, clypeus, mandibles, except at the apex and palpi, yellow; the greater part of the front, centre of vertex,

occiput broadly, the propleuræ, except for a wedge-shaped mark (the broad end at the apex) near the top, an oblique mark on the apex of the mesopleuræ in the middle, a broad line below, its base dilated upwards, the mesosternum, except in the middle, where there is a large, oval, red mark, the lower part of the metapleuræ broadly, the metasternum, a line on the top of the second abdominal segment, and the fifth and sixth broadly above, black. Legs coloured like the thorax; a broad, black line on the inner and outer sides of the hind coxæ and one on the top of the trochanters. Basal two or three joints of antennæ black above, the flagellum dark rufous, darker towards the apex. Wings hyaline, the costa and nervures black; the stigma dark testaceous. ♀.

Length 13–14 mm.

Transvaal.

Face and clypeus closely, but not very strongly punctured, thickly covered with white pubescence. Front and vertex much more strongly and closely punctured; there is a stout keel down the middle of the front; the punctures are transverse on either side of it. Face and clypeus thickly covered with long white hair. Pro- and mesothorax closely and strongly punctured; the median segment more strongly, rugosely punctured, and more thickly covered with white hair.

CAMPOPLEGINI.

CHAROPS, Hölmgr.

CHAROPS CARINICEPS, sp. nov.

Black; mandibles yellow, tinged with rufous; the palpi, four anterior legs, except the coxæ, reddish yellow, the femora with a more distinct reddish tint than the rest; the first segment and the sides of the third, fourth, and fifth broadly red; wings hyaline, the nervures, costa, and stigma black. ♂.

Length 10 mm.

Cape Colony. Cape Town. Natal. Durban; Maritzburg. Transvaal. Potchefstroom. Southern Rhodesia. Sebakwe.

Bred from a greyish cocoon attached by a thread half its length to a leaf; the ends are black; behind them is a row of large, irregular, more or less incised and separated, black marks; in the centre are two rows of small, irregular black dots.

Head and thorax covered with white pubescence. Vertex and lower part of front finely rugose; the upper part of front finely, irregularly reticulated; the front with a stout keel down the middle.

Face closely rugosely punctured; the sides more or less longitudinally striated-reticulated. Pro- and mesothorax coarsely alutaceous, the middle of the mesonotum at the apex more or less finely reticulated. Median segment with two keels down the middle; they diverge towards the apex; the space between transversely striated; the striæ more or less broken; the rest of the metanotum irregularly reticulated, the sides more or less stoutly striated; the metapleuræ with two rows of widely separated oblique striæ, the two separated by an oblique keel behind the middle. Scutellum flat, slightly hollowed in the middle, and stoutly transversely striated. Mesopleuræ at the base closely punctured-reticulated; the apex longitudinally striated; the striæ above extending from the apex to beyond the middle; below they are shorter. Propleuræ strongly, more or less obliquely striated. Abdomen about three times the length of the thorax. There is a large area on the base of the metanotum at the sides; it is as long as it is wide at the base, and becomes roundly narrowed towards the apex. Tarsi not thickly spinose.

This species may be separated from *C. spinitarsis*, Cam., thus:—

Hind legs black, median segment reticulated; the basal lateral area narrowed at the apex	<i>cariniceps</i> .
Hind legs rufous, the apical joint of the trochanters stramineous, the basal lateral area on the punctured median segment not narrowed at the apex	<i>spinitarsis</i> .

CAMPOPLEX, Gravenh.

CAMPOPLEX FULVICORNIS, sp. nov.

Black; the antennæ uniformly fulvous; the legs, except the coxæ, reddish fulvous, the anterior tibiæ and tarsi paler, more yellowish in tint; the first abdominal segment, the second, except for a broad black line on the basal three-fourths, and the third and fourth entirely red. Wings hyaline, the costa and stigma testaceous, tinged with fuscous; the nervures black; the areolet 4-angled; the nervures uniting in front. ♂.

Length 15 mm.

Cape Colony. Neighbourhood of Cape Town.

Mandibles fulvous, tinged with yellow, the teeth black. Face and clypeus closely strongly punctured; the punctures on the face interlacing; on the apex of the clypeus they are much more widely separated. Pro- and mesothorax closely rugosely punctured; the pleuræ strongly punctured, the punctures clearly

separated. Scutellum roundly convex, thickly covered with long white hair. Median segment closely rugosely punctured and thickly covered with long white hair; its middle broadly, distinctly furrowed.

CAMPOPLEX ERYTHROSPILUS, sp. nov.

Black, the antennæ, palpi, sides and apex of the mesonotum, scutellums, the base of the mesopleuræ irregularly below the wings and first abdominal segment, red; the greater part of the second and following segments of the abdomen ferruginous; wings hyaline, the costa and stigma testaceous, the nervures darker coloured. ♀.

Length 12 mm.

Cape Colony. Neighbourhood of Cape Town.

Mandibles rufous, their teeth black. Head closely, distinctly punctured; the face and clypeus thickly covered with white pubescence; there is an irregular keel in the middle of the front. Thorax closely, somewhat strongly punctured, thickly covered with white hair; the hair on the scutellums longer. Base of metanotum closely rugosely punctured; the rest somewhat strongly transversely striated; upper part of metapleuræ closely, strongly, obliquely punctured, the punctures running into striations on the apical slope. Areolet large, wide, 4-angled; shortly, but distinctly, appendiculated.

CAMPOPLEX RUFOSCAPUS, sp. nov.

Black; the antennal scape, legs, except the four hind coxæ, and tegulæ red; the apex of the second and the whole of the third and fourth segments of a darker red colour; wings hyaline, the apex slightly tinged with violaceous; the costa, stigma, and nervures black. ♀.

Length 18 mm.

Cape Colony. Neighbourhood of Cape Town.

Face and clypeus closely, uniformly strongly punctured, thickly covered with silvery pubescence; front and vertex closely, strongly punctured; the temples thickly covered with long white hair. Thorax closely punctured, the mesopleuræ not so closely and the metanotum more closely than the rest; the scutellums and median segment have the pubescence longer and denser than the rest of the thorax. Metanotum depressed in the middle, the base with two curved keels forming two areæ, which are more closely and finely punctured than the rest. The sides of the first abdominal segment are broadly red; there is a thinner red line on the sides of the

second at the base. Areolet large, oblique, shortly appendiculate, almost sessile in front. Mandibles rufous, tinged with yellow, their teeth black. Palpi rufous, thickly covered with white pubescence.

? CAMPOPLEX CRASSIVENTRIS, sp. nov.

Black; the apical half of the third and the greater part of the fourth and fifth abdominal segment, red; the four anterior femora and tibiae red; the fore tarsi yellowish, the hinder tibiae obscure red at the base; wings fuscous, tinged with violaceous; areolet triangular, appendiculated; the recurrent nervure is received close to the apex. ♀.

Length 13 mm.

Cape Colony. Namaqualand; O'okiep.

Head, pro- and mesothorax closely punctured; the front transversely punctured, the middle smooth, finely keeled. Median segment closely rugosely punctured; the punctures running into reticulations; the centre broadly furrowed. Abdomen thick, not compressed, broad above; almost the apical half of the first segment nodose; the seventh shorter than the sixth, transverse, not narrowed at the apex; sheaths of ovipositor short, not projecting beyond the apex of the segment. Clypeus not separated from the face; its apex broadly rounded. Mandibles rufous behind the teeth. Palpi black. The transverse median nervure received very close to the transverse basal, almost interstitial.

The abdomen in this species is broader, less compressed, than it is in the typical species of *Campoplex*.

PIMPLOMORPHA, gen. nov.

Arolet absent; the recurrent nervure interstitial; transverse median nervure received shortly behind the transverse basal, almost interstitial. Stigma large, broad; the radius issues from shortly beyond its middle, and does not extend much beyond the middle, the radial cellule therefore being short. Transverse cubital nervure long. Parallel nervure broken shortly above the middle. Clypeus separated from the face; its apex broadly rounded. Upper tooth of mandibles longer than lower. Eyes parallel. Parapsidal furrows absent. Base of metanotum areolated; the areola large, longer than wide, the base narrowed to a point, the apex transverse; spiracles small, oval. First abdominal segment long, the apex dilated; the spiracles are placed at the base of the apical third; the segments are compressed, but moderately broad above; the ovipositor is longer than the abdomen, nearly as long as the

body. Legs slender; the middle tibiæ with two spurs; the claws pectinated at the base. The second abdominal segment is closely longitudinally striated; its spiracles before the middle.

There is no malar furrow; the areola is closed at the base and apex; there is a well-defined, deeply depressed petiolar area. Hind metatarsus as long as the following three united; the apices of the joints spinose; the last much longer than the fourth. Transverse median nervure in hind wings broken shortly below the middle, the recurrent nervure is largely bullated in front, the subdiscoidal nervure issues from above the middle of the recurrent nervure. Antennæ shorter than the body. The joints of the hind tarsi are of equal thickness; the metatarsus is more than half the length of the tibiæ.

Comes near to *Zaporus*, Foer. It looks more like a Pimplid than an Ophonid.

* *PIMPLMORPHA TRILINEATA*, sp. nov.

Head and thorax yellowish testaceous, the abdomen rufous, the sides and ventral surface tinged with yellow; the antennæ, a square mark on and below the ocellar region, two marks on the lower part of the occiput, three large marks on the mesonotum, almost the basal half of the metanotum, the mark dilated laterally at the base, a mark on the apex of the mesopleuræ near the top, the middle of the metapleuræ at the base and the mesosternum, black. Legs fulvous, the tibiæ and tarsi tinged with yellow. Wings hyaline, the stigma and nervures black. ♀.

Length 12 mm.; terebra 9 mm.

Transvaal.

Face closely, the upper part of the clypeus sparsely, the front and vertex more closely and strongly punctured; the parts immediately above the antennæ striated; the parts surrounding the black on the front and vertex and the greater part of the vertex are rufous. Thorax closely punctured; the metanotum more closely and strongly than the rest, except the base of the areola, which is smooth. Antennæ over 40-jointed, the third and fourth joints equal in length.

LIMNERIUM, Ashm.

The following species may be separated thus:—

- 1 (2). Areolet sessile; the abdomen entirely black *sessilinervis*.
- 2 (1). Areolet appendiculated, the abdomen not entirely black.

- 3 (4). Areolet square, the metanotum without areæ *fulvipalpis*.
 4 (3). Areolet triangular, the metanotum with areæ or keels.
 5 (10). Hind tibiæ and tarsi red, not maculate with black.
 6 (7). Hind coxæ black, the areolet open at the apex,
 mandibles black ; *melanostomum*.
 7 (6). Hind coxæ red; the areolet closed at the apex; the
 mandibles yellow at the base.
 8 (9). Length 8 mm.; the metanotum not areolated *Péringueyi*.
 9 (8). Length 6 mm.; the metanotum regularly areolated . . *areolatum*.
 10 (5). Hind tibiæ and tarsi pale yellow, marked with black.
 11 (12). Areolet small, closed at apex; the recurrent nerve
 received close to transverse cubital; length 8 mm. . . *capense*.
 12 (11). Areolet obsolete; the recurrent nerve clearly distant
 from transverse cubital; length 4 mm. *longiceps*.

LIMNERIUM FULVIPALPIS, sp. nov.

Black; the legs, except the coxæ and the basal joint of the hind trochanters, which are black, and the apical joint of the hind trochanters, which is yellow, rufo-fulvous; the apex of the second abdominal segment broadly, and the whole of the third, fourth, and fifth reddish-testaceous. Wings hyaline, the stigma dark testaceous, the nervures black. Mandibles rufo-fulvous, yellow at the base; the palpi rufo-fulvous. ♂.

Length 7 mm.

Cape Colony. Neighbourhood of Cape Town.

Head and thorax closely punctured, the metanotum more rugosely than the rest; covered with a close white pubescence. Median segment entirely without keels or areæ; thickly covered with white pubescence. Areolet appendiculated, square, the upper part of the transverse cubital nervure not being curved, but straight; the lower part being also straight, not curved or obliquely sloped; its apical part is pale.

This species should be known by the absence of areæ and keels on the metanotum and by the square areolet. The disco-cubital nervure is angled, not rounded beyond the middle.

LIMNERIUM CAPENSE, sp. nov.

Black; the mandibles, palpi, four anterior coxæ and trochanters, the base of the middle coxæ black above; the rest of the tibiæ and tarsi stramineous, the fore femora slightly, the middle distinctly tinged with fulvous; the hind legs with the coxæ and basal joint of trochanters black, the apical joint of the latter yellow; the femora rufo-fulvous; tibiæ white, a narrow fuscous band near the base and

a wider one at the apex, the tarsi fuscous, the basal two joints pale at the base. ♂.

Length 8 mm.

Cape Colony. Cape Town.

Head and mesonotum alutaceous, the rest of the thorax finely, closely punctured. Malar space as long as the antennal scape. Clypeus bluntly rounded; the apex in the middle shining; the sides above foveate. Petiolar area small, narrow, twice longer than wide; the lateral area large, triangular; the apical keel broken on the outer side, the area thus being made continuous with a smaller triangular one below it; spiracular area distinct beyond the stigma. Apices of the third and fourth segments, their sides and the sides of the fifth and sixth segments rufous. Wings hyaline, the stigma pale fuscous, the nervures slightly darker; the apical transverse cubital nervure is almost, if not quite, obsolete; the recurrent nervure is interstitial. The base of the ventral surface black, the second and third segments yellow, the other testaceous, marked with fuscous.

LIMNERIUM PERINGUEYI, sp. nov.

Black, the abdomen except the basal half of the first three segments and the legs rufo-fulvous; the mandibles, except at the apex and the tegulae yellow, tinged with fulvous; antennal scape reddish; palpi yellow. Wings hyaline, the nervures and stigma black. ♀.

Length 8 mm.; terebra 3 mm.

Cape Colony. Stellenbosch.

Head and thorax closely, minutely punctured, covered with a white pile; the face with longer white pubescence. Apex of clypeus bluntly rounded. Base of metanotum with only three areae; the basal small, square; the lateral large, broader than long, the sides straight, the apex rounded; the spiracular area large, wide, distinct; the apex longer on the outer than on the inner side, bordered by a stout keel; the base of the metanotum, outside the areae, with an oblique slope, distinctly depressed; the basal slope with some stout striae. Pedicle of areolet twice longer than the inner lower branch; the outer is very faint.

LIMNERIUM AREOLATUM, sp. nov.

Black, the abdomen, except narrowly at the base rufo-fulvous; the legs of a brighter fulvous red colour; the mandibles stramineous; the palpi fulvous; the antennal scape rufo-fulvous; the basal joints

of the flagellum of a dark red, obscured with fulvous. Wings hyaline, the stigma and nervures fuscous. ♀.

Length 5-6 mm.; terebra 1 mm.

Cape Colony. Neighbourhood of Cape Town.

Head, pro- and mesothorax alutaceous; the middle of mesopleuræ with an oblique, closely striated band in the middle; the apex of the propleuræ more strongly punctured. Median segment more distinctly punctured; there are five areæ on the base, besides the petiolar area; the areola is acutely pointed at the base, is twice longer than wide, and is not closed at the apex; there are two basal lateral areæ; the apical longer and narrower than the basal; there are three apical; the spiracular large; in all there are ten areæ. Areolet small; the pedicel clearly longer than it; it receives the recurrent nervure in the middle.

LIMNERIUM SESSILINERVIS, sp. nov.

Black, the mandibles, palpi, under side of antennal scape, the four anterior coxæ and trochanters pale stramineous-yellow; the four front femora, tibiæ and tarsi yellowish-fulvous, the femora darker, more fulvous coloured than the rest; hind legs black, the apical joint of the trochanters yellow, the tibiæ broadly testaceous in the middle; the spurs white. Ventral keel testaceous. Wings hyaline, the nervures and stigma black; the areolet not appendiculated, the nervures meeting in front; the second transverse cubital nervure largely bullated behind. ♀.

Length 9 mm.; terebra 3 mm.

Cape Colony. Grahamstown.

Head closely rugose, opaque; the face and front thickly covered with silvery pubescence; the face and clypeus flat, not separated; the front depressed in the middle below. Temples roundly, distinctly narrowed. Apex of clypeus distinctly, broadly rounded. Pro- and mesothorax closely, distinctly punctured, thickly covered with short, white pubescence; the apex of propleuræ striated in the middle; the median segment more strongly rugosely punctured. On the base of the metanotum are two large semicircular areæ; a not very distinct keel runs down from their middle to an indistinct one on the sides of the apical slope; the segment is densely covered with fuscous pubescence. Abdominal petiole shining, dilated at the apex, nearly as long as the hind femora, longer than the hind coxæ and trochanters united.

The recurrent nervure is interstitial with the second transverse

cubital; the metanotum between the basal areæ is distinctly transversely striated and, less distinctly, in the middle below.

LIMNERIUM MELANOSTOMUM, sp. nov.

Black; the second, third, and the greater part of the fourth abdominal segments and the legs rufo-testaceous, the coxæ black; a narrow rufous line on the hinder orbits; wings hyaline, the stigma dark testaceous, the nervures black; the areolet obsolete. ♂.

Length 8 mm.

Cape Colony. Neighbourhood of Cape Town.

Head and thorax finely, closely punctured, and covered with short white pubescence; the depression above the antennæ shining, smooth, and with two or three keels. Metanotum long; its base depressed, smooth, shining; petiolar area longer than broad, widened at the apex; areola twice longer than wide, widened and rounded at the base; posterior median area narrowed at the base, punctured there, the rest transversely striated; the segment is more strongly, closely rugosely punctured than the mesothorax. The apex of the discoidal nervure and the recurrent are largely bullated; the recurrent nervure is received very shortly beyond the transverse cubital.

LIMNERIUM LONGICEPS, sp. nov.

Black; the mandibles, palpi, tegulæ, and the four front coxæ and trochanters stramineous, the rest of the four anterior legs fulvous; the hind coxæ and basal joint of trochanters black; the apical joint of the latter stramineous, the femora dark fulvous; the tibiæ pale, a fuscous band near the base and a larger one at the apex; the tarsi fuscous, the basal joint broadly white at the base. The second abdominal segment rufous at the apex and along the sides. Wings hyaline, the stigma and nervures fuscous; the areolet small, the nervures thick; the pedicle nearly as long as the apical branch. ♀.

Length 4-5 mm.; terebra 1 mm.

Cape Colony. Cape Town.

Head and thorax alutaceous, covered with a short, white pubescence; the face with long silvery hair. Face longer than usual, owing to the longer malar space, which is as long as the antennal scape. Metanotum indistinctly areolated; there is a small, indistinct petiolar area followed by a long pedicle from which branch off keels which border the apical slope; there are two lateral areæ indistinctly separated; the apical gradually narrowed to a sharp point at the apex; spiracular area moderately distinct.

PANISCINI.

PANISCUS, Schr.

PANISCUS MELANOGASTER, sp. nov.

Dark rufous, the abdomen for the greater part black; the antennæ of a lighter rufous colour; the orbits, sides, and apex of the clypeus yellow; wings hyaline, the costa, stigma, and nervures black. ♂.

Length 21 mm.

Cape Colony. Neighbourhood of Cape Town.

Face and clypeus closely punctured, the latter (especially below) not so closely punctured. Mandibles tinged with yellow, black at the apex. Clypeus separated by a furrow from the face. Scutellar keels distinct, black. Except at the apex the metanotum is closely transversely striated; there is a large depression, bordered behind by a keel, on the sides of the apex. Basal two segments of the abdomen as long as the thorax. Disco-cubital nervure with a slight indication of a stump of a nervure.

PANISCUS MELANOCOTIS, Bé.

This seems to be a variable species as regards the amount of black on the head and abdomen and of yellow on the head and thorax. The ocellar region may want the black, and the abdomen may be blackish from the second segment. The stump of a nervure on the disco-cubital may be distinct, indistinct, or even absent.

BANCHINI.

EXETASTES, Grav.

EXETASTES PERONATUS, sp. nov.

Black, a line on the base of the mesonotum in the middle, narrowed gradually behind and reaching near to the tegulæ, a large mark on the scutellum, commencing at the top of the basal slope, a narrow one on the apex of the post-scutellum, tegulæ, and tubercles, yellow; the apical four segments of the abdomen with their apices narrowly lined with white. Legs red; the coxæ, trochanters, apex of hind femora narrowly, apical half of hind tibiæ and the hind tarsi, black. Wings hyaline, the nervures and stigma black; the disco-cubital nervure broken by a stump of a nervure. ♀ and ♂.

Length 10–11 mm.; sheath of ovipositor 1 mm.

Cape Colony. Namaqualand Distr.; O'okiep; Klipfontein.

Face closely, distinctly punctured; the upper part of the clypeus more strongly, but not so closely punctured, the lower smooth; the front and vertex punctured somewhat like the face. There is a short yellow line behind the middle of the mandibles in front. Palpi blackish. Pro- and mesothorax closely and regularly punctured. Metanotum closely rugosely punctured, more or less finely striated-reticulated; the metapleuræ punctured like the mesopleuræ. Abdomen smooth and shining. Areolet 5-angled; the nervures not quite meeting in front; the transverse median nervure not quite interstitial.

RHYNCHEXETASTES, gen. nov.

Labrum large, longer than the clypeus, malar space distinct, as long as the antennal scape; the mandibles long, projecting downwards, their apices meeting in the middle of the labrum, enclosing the labrum; they end in two broad teeth. Trophi elongated; the maxillæ as long as the face and clypeus united. Occiput transverse, margined. Temples obliquely narrowed. Parapsidal furrows absent. Metanotum neither areolated nor keeled; the spiracles linear. First abdominal segment as long as the following two united; it becomes gradually widened towards the apex; the second is longer than its width at the apex; the third is square. Areolet shortly appendiculated; the disco-cubital nervure distinctly broken by a stump of a nervure; the transverse median is interstitial. Transverse median nervure in hind wings broken near the top. Third antennal joint as long as the following two united. Front with a keel between the antennæ.

The abdomen is smooth and shining; it is thickened towards the apex; the sheaths of the ovipositor are broad and as long as the apical two segments united. Hind legs long; the coxæ thickened, long; apices of tarsal joints spinose; the claws simple. The wings are uniformly fuscous violaceous.

The affinities of this species are with *Exetastes*, from which it may be known by the elongated trophi, fuscous violaceous wings, and by the disco-cubital nervure being distinctly broken. The elongated trophi allies it to the American genera *Agathilla*, West. and *Agathobanchus*, Ashm., but these have the trophi much more lengthened.

As I have said, the affinities of this genus are with *Exetastes* rather than with *Banchus*. Probably its nearest known ally is

Semnophrys, Foer.; it may be known from the present genus by its very broad head and by there being a horn between the antennæ.

* *RHYNCHEXETASTES VIOLACEIPENNIS*, sp. nov.

Rufous, the antennæ, the occiput, vertex, front broadly, a large mark on the sides of the clypeus, malar space except in the centre, the mesonotum, except a curved line, widest at the base along the sides, a transverse mark, wider than long, of equal width and length, propleuræ except narrowly at the base, mesopleuræ except for an irregular, somewhat pyriform mark (the narrowed end in front) at the apex below, the breast, a narrow line along the base of the metapleuræ, two streaks on the apical half of the first abdominal segment, two broader ones, dilated at the apex, on the second, the third except at the sides, and the whole of the others, black. Legs coloured like the body, the apex of the hind tibiæ and the hind tarsi, except at the base and apex, black. Wings uniformly fuscous violaceous, the nervures and stigma black. ♀.

Length 12 mm.

Cape Colony.

Head closely punctured; the labrum is of a paler, more yellowish hue and is much less distinctly punctured; the rufous colour of the mandibles has a yellowish tint; the teeth are black. Palpi fuscous. Pro- and mesothorax closely punctured, the punctures distinctly separated; the metapleuræ punctured like the mesopleuræ; the metanotum closely rugosely punctured, striated in the middle. Abdomen smooth and shining.

ALLOTHECA, gen. nov.

Metathoracic spiracles small, oval. Basal third of abdominal petiole narrowed, the apical part dilated; the basal part of it becomes gradually wider, the apical (and larger) is of equal width; the other segments are not much compressed. Parapsidal furrows obsolete. Clypeus not separated from the face, its apex bluntly rounded. Malar space long, not quite so long as the antennal scape. Eyes parallel, not emarginate within. Scutellum roundly convex. Metanotum with the apex widely and deeply depressed. Areolet 4-angled, the nervures meeting in front. Transverse median nervure interstitial. Sub-discoïdal nervure originating below the middle of the recurrent nervure. Disco-cubital nervure rounded in the middle, not broken. Basal abscissa of radius roundly curved downwards; the apical

straight, oblique. Apical nervures in hind wings almost, if not quite, obsolete. Antennæ shorter than the body, the third joint distinctly longer than the fourth. Claws simple. Mandibles bidentate. Labrum large, projecting. Palpi and trophi normal.

The head in front is elongate, clearly longer than wide; it is somewhat rostriform, but not so much as in *Rhynchetastes*. The characteristics of the genus are the campanulate abdominal petiole, narrowed clearly at the base, large, hollowed labrum, hollowed centre of metanotum, and semi-obsolete apical nervures in hind wings. The transverse median nervure in the latter appears to be broken close to the bottom. The ovipositor, too, is longer than in the normal *Banchini*. The long ovipositor makes it look more like a Pimplid than anything else.

ALLOTHECA ANNULIPES, sp. nov.

Black, the labrum and middle of the antennæ dark red; legs red, the coxæ and the greater part of the trochanters black; the outer side of the four front tibiæ yellowish white; the outer side of the hinder white in the middle, the base and apex broadly black; the hind tarsi black; the base of the first joint and of the second more narrowly white; the spurs white; wings hyaline, the nervures and stigma black; tegulæ white. ♀.

Length 9 mm.; ovipositor 3 mm.

Cape Colony. Neighbourhood of Cape Town.

Head and thorax closely punctured, thickly covered with short white pubescence. Scutellum roundly convex; its apex more closely, rugosely punctured than the base. Metanotum rugosely punctured; the centre transversely striated, more closely and finely above than below; the upper part of the pleuræ more coarsely rugosely punctured than the metanotum. Abdomen shining, smooth; the apical segments shortly pilose; the sheaths of the ovipositor broad, densely pilose, dilated at the apex.

PORIZONINI.

RICRENA, gen. nov.

Wings without an areolet; the transverse cubital nervure thick, short, the recurrent nervure received shortly beyond it, the cubitus sloping down to receive it; transverse median nervure interstitial; the second cubital cellule closed. The apical nervures in hind wings almost obsolete, only the radius being faintly indicated. Median

segment, if anything, longer than usual; it is completely areolated; the areola is three times longer than wide, obliquely narrowed at the base, transverse at the apex; the spiracles are separated from the pleural keel. Second abdominal segment closely, longitudinally striated. Antennæ about 34-jointed, shorter than the body. Parapsidal furrows distinct. First abdominal segment spiracles minute, placed near the base of the apical third. Clypeus separated from the face. Malar space distinct. Occiput margined, but not strongly. Ocelli large, more prominent than usual. Hinder metatarsus shorter than the following two joints united; claws small, simple. Palpi slender, of moderate length.

In the Foersterian-Ashmeadian system this genus would come in near *Dolichopselephus* and *Temelucha*. From the very large size (as in *Ophion*) of the ocelli and from the colouration I should think the type of this genus is of nocturnal habits. The wings have a slight milky tint.

* *RICRENA PALLIDIPENNIS*, sp. nov.

Rufo-testaceous, the flagellum of antennæ, a line uniting the posterior with the anterior ocelli, the parts at the sides of the scutellum, the base, apex and middle of metanotum, mesosternum and base of first abdominal segment, an oblique mark on mesopleuræ below the tubercles and the lower side of the metapleuræ, black. Wings hyaline, with a slight milky tint; the nervures black, the stigma dark fuscous. ♂.

Length 7 mm.

Cape Colony.

Face minutely punctured, the inner orbits, malar space and base of mandibles pale yellow. Mandibular teeth black. Ocelli amber-coloured, the hinder are separated from each other by a distinctly greater distance than they are from the eyes; the anterior has a semicircular keel in the middle. Thorax closely punctured, shining; the lower part of the propleuræ, the parapsidal furrows and tegulæ are yellow; the median segment is more irregularly and not so strongly punctured; the posterior median area is closely, transversely striated. Legs slender, the tarsi longer than the tibiæ; the anterior more than twice their length; the basal two joints united being longer than them. The disco-cubital nervure near the apex and the upper half of the recurrent nervure are bullated; the short, transverse cubital nervure is much thickened; the costa between the stigma and where it receives the transverse basal nervure is thickened.

PIMPLINÆ.

ACÆNITINI.

PARACOLLYRIA, gen. nov.

Fore wings without an areolet; the transverse cubital nervure short, the recurrent nervure is received beyond it. Transverse median nervure received behind the transverse basal, almost interstitial. Disco-cubital nervure broken by a stump of a nervure. Transverse median nervure in hind wings broken distinctly above the middle. Head cubital, the temples broad, the occiput transverse or roundly incised. Antennæ in ♀ short, stout, the third joint longer than the fourth; in ♂ longer, stout. Parapsidal furrows deep. Median segment with only a semicircular area on the apex; the spiracles are placed in the middle; they are large, linear. Malar space long, not much shorter than the eyes, which are parallel. Apex of clypeus transverse, or bluntly, broadly rounded; it is not separated from the face. Labrum hidden. Mandibles edentate, curved, the apical half narrowed. First abdominal segment stout, broad at the base, gradually widened towards the apex, which is twice the width of the base; it is as long as, or longer, than the following two united; the spiracles are placed shortly behind the middle. Hypopygium cultriform, projecting. Second abdominal segment wider than long. Legs stout; the hinder greatly lengthened; much stouter than the anterior; their basal joint is slightly longer than the following two united. Four anterior claws cleft; the hinder long, curved, simple.

The four species I have included in this genus are rather diverse in colouration, but all have the characteristics enumerated above. In Ashmead's table (Bull. U.S. Nat. Mus. xxiii. 48) it would enter into *Chorischizus*, but it can hardly be referred to that genus. Its nearest ally known to me is *Siphimedia* from the Oriental Zoological Region. That genus may be known by the stoutly bidentate mandibles, areolated metanotum, by the apex of the clypeus not being transverse, and by the transverse median nervure in hind wings being broken in the middle, and by the interstitial recurrent nervure. The species may be recognised by the following table:—

α. Thorax and abdomen black.

Wings fuscous with a hyaline cloud at the apex; the disco-cubital nervure broken by a stump of a nervure, head red, antennæ ringed with white *ruficollis*.

Wings yellowish hyaline, their apex smoky; the disco-cubital nervure not broken; head black, antennæ not ringed. *flavipennis*.

b. Thorax and abdomen red.

Wings smoky, with two small hyaline clouds near the apex; hind tibiæ not entirely black *fumipennis*.

Wings yellowish hyaline, with smoky clouds on the apical half; hind tibiæ entirely black *pulchripennis*.

Obs. The Malayan genus *Phalega*, Cam. (Entomologist, 1905, 170) is closely related to *Paracollyria*; it may be known by the dentate apex of clypeus, bidentate mandibles, and by the transverse median nervure in hind wings not being broken so near the top.

PARACOLLYRIA RUFICOLLIS, sp. nov.

Black, the head, mandibles, except at the apex, and the prothorax, except the propleuræ above narrowly, red; the wings fuscous-violaceous, the nervures and stigma black; there is a clear hyaline cloud on the outer side of the recurrent nervure and touching it, which extends from the costa to the discoidal nervure. ♀.

Length 15 mm.; terebra 8 mm.

Southern Rhodesia. Sebakwe.

Face and centre of clypeus punctured, but neither closely nor strongly. Malar space two-thirds of the length of the eyes. Upper apical part of the propleuræ weakly punctured; the crenulated apical furrow commences shortly above the middle. Base and lower part of the mesopleuræ sparsely punctured; the apex beyond the crenulated furrow is much more closely and distinctly punctured. There are two keels down the base of the metanotum; between the middle and the apical keel there is a strong belt of stout, irregular, transverse striæ, bordered on the outer side by a longitudinal one. The abdominal petiole is as long as the following three segments united.

PARACOLLYRIA FLAVIPENNIS, sp. nov.

Black; the lower half of the clypeus, labrum, mandibles, except at the apex, palpi and four front legs, rufo-testaceous, the middle coxæ black on the outer side. Wings yellowish hyaline, the nervures and stigma yellow; a small cloud below the apex of the disco-cubital nervure, not touching the recurrent nervure, a small cloud below it and a cloud round the apex, widest in the cubital cellule and below extending not far from the discoidal nervure. ♂.

Length 17 mm.

Natal. Newcastle.

Antennæ stout, not tapering towards the apex, 31-jointed, thickly covered with short, black, stiff pile. The raised central part of the face and the sides strongly, but not very closely punctured. Thorax smooth and shining; the lower part of the propleuræ at the apex striated; the base of the mesopleuræ, from near the top, strongly and closely punctured behind the depression which is stoutly crenulated. Abdomen smooth and shining; the basal four ventral segments are cream-coloured at the apex, the basal segment broadly so. The recurrent nervure is received the length of the transverse cubital nervure beyond it.

PARACOLLYRIA FUMIPENNIS, sp. nov.

Rufo-fulvous; the antennæ, more than the apical two-thirds of the hind tibiæ and the hind tarsi black; wings fuscous, a small hyaline cloud, wider than long, at the base of the stigma, a larger, broader one extending from the costa to the discoidal nervure, the part in the radial cellule, wider slightly at both sides than that beyond it. ♂.

Length 15 mm.; terebra 7 mm.

Natal. Newcastle.

Antennæ not quite so long as the body, stout, not tapering towards the apex; the pubescence minute, sparse; denser towards the apex; the last joint somewhat compressed laterally, as long as the preceding two united; there are twenty-nine joints. Face strongly, but not very closely punctured; the clypeus depressed, smooth. The curved apical half of the mandibles black; the rufous of the base is tinged with yellow. The upper side of the thorax is smooth; there is a curved keel on the apex of the metanotum, with a keel down its middle; there is a row of punctures on either side; behind these a double row of punctures in the middle above the keel. Propleuræ smooth, except for a crenulated furrow down the apex. Mesopleuræ closely punctured except at the apex above. Abdomen smooth and shining; the basal two segments are largely marked with black above; the ventral segments are edged with pale yellow at the apex; the basal much more broadly than the others.

PARACOLLYRIA PULCHRIPENNIS, sp. nov.

Rufous; the antennæ, mandibular teeth and the hind tibiæ and tarsi, black; the wings yellowish hyaline; a triangular cloud along the transverse basal nervure, not reaching to the costa and the narrowed end in front, the apex from the commencement of the

disco-cubital nervure and the base of the radius, except for a yellowish-hyaline cloud, commencing at the base of the radius, extending to not far from its apex and going along the inner side of the recurrent nervure to shortly beyond the discoidal nervure and extending forwards to its middle. ♀.

Length 15 mm.; terebra 7 mm.

Natal. Newcastle.

Antennæ stout, 27-jointed, densely covered with a minute pile, the apical joints brownish; the last somewhat compressed, longer than the preceding two united. Face strongly but not closely punctured; the clypeus more sparsely punctured. Front and vertex smooth; the latter stoutly, somewhat irregularly keeled down the middle; the keel weaker above than below. Apex of clypeus depressed, smooth below, punctured above. Thorax smooth; the mesopleuræ, except the upper, apical half punctured. The recurrent nervure is received at a greater distance than its length from the transverse cubital.

PIMPLINI.

PERITHOUS, Holmgr.

? PERITHOUS VIOLACEUS, sp. nov.

Dark blue, tinged with violaceous, smooth and shining; the metapleuræ, except at the apex, strongly closely punctured; wings violaceous, iridescent, the nervures and stigma black; the areolet sessile or shortly appendiculated. ♀.

Length 18–20 mm.; ovipositor 21–24 mm.

Cape Colony. Stellenbosch.

Parapsidal furrows narrow, but distinct in front. Metanotum with a shallow furrow running from the base to near the apex; the parts bordering the furrow roundly, broadly raised; the apex with two deep foveæ, wider than long, rounded behind and separated by a broad keel. Abdominal segments smooth; the first more than double—nearly three times—longer than its width at the apex; the base with a triangular depression; the middle with an elongated fovea; the second is longer than wide, the third almost square, the others wider than long; the third, fourth, and fifth broadly roundly tuberculate laterally; the raised parts on the third longer than wide, on the fourth and fifth wider than long. Disco-cubital nervure irregularly roundly curved, not broken; transverse median nervure interstitial; transverse median nervure in hindwings angled and broken shortly, but distinctly above the middle. Face thickly

covered with black hair; the clypeus bounded behind by a narrow, but distinct keel. Tarsi spinose; the claws not toothed. The recurrent nervure is received beyond the middle. Metathoracic spiracles oval. Hind coxæ about three times longer than wide; with the trochanters they are as long as the femora; the last joint of hind tarsi about four times longer than the preceding.

This species agrees fairly well with *Perithous*; it certainly agrees with it better than with *Ephialtes*. Kriechbaumer (Verh. z. b. ges. Wien, v., 488) describes an *Ephialtes violaceus* from Kaffraria, which appears to be closely allied, having the same colouration of the wings and body, and not differing greatly in size.

ECHTHROMORPHA, Holmgr.

ECHTHROMORPHA CONTINUA, Brullé.

A specimen from Natal (Durban) is probably this species. It is, however, very much discoloured, probably through having been killed, judging from its almost vermilion tint, by cyanide of potassium. The species is recorded by Krieger, Berich. d. Naturf. Gessel. zu Leipzig, 1898, p. 57, from Natal. Cf. also Kriechbaumer, Berl. Ent. Zeits., xxxix., 50.

XANTHOPIMPLA, Sauss.

XANTHOPIMPLA NATALENSIS, sp. nov.

Luteous, the antennæ except at the base black, the scape yellow below; an irregular mark enclosing the ocelli, a large mark in the centre of the occiput, three marks on the base of the mesonotum, the central much smaller, irregular and placed opposite the base of the others, which are twice longer than wide, an irregular smaller mark at the base of the scutellum, two irregularly oval marks on the base of the metanotum; two marks, wider than long, on the base of the third, fourth, and fifth segments, that on the fourth wider than on the others; and a larger and wider one on the sides of the seventh, black. Hind tarsi black. Wings hyaline, the stigma and nervures black. ♀.

Length 13–15 mm.

Natal. Durban.

Areola quadrangular, wider than long, of equal width throughout; the tooth-bearing area long, narrow, the inner side half the width of the outer. Face closely, strongly punctured, flat, the sides obliquely depressed. Clypeus roundly convex, less strongly punctured than the face; both are thickly covered with fuscous pubescence. Thorax

smooth, shortly pilose; the pile on the scutellum longer. Areolet triangular, shortly appendiculated; the recurrent nervure received in the middle. First abdominal segment smooth, the second sparsely punctured, the third to seventh closely punctured, their apices smooth; the third to sixth with an indistinct transverse furrow near the apex. Hind tarsi short, stout, not much longer than the tibiæ.

The ♂ is similarly coloured, except that there are ten black spots on the abdomen, the sixth segment having a pair like the others. The size and shape of the central spot on the mesonotum varies. The clypeus at the base laterally is bordered by a large fovea; the labrum is large, narrowed to a bluntly rounded point.

XANTHOPIMPLA APPENDICULATA, sp. nov.

Yellow; the central area of the abdominal segments tinged with rufous; wings hyaline, the apex slightly smoky, the stigma fuscous, the nervures black; the areolet wide, distinctly appendiculated, the recurrent nervure received shortly beyond the middle; it is roundly broadly curved in front. ♀.

Length 10 mm.; terebra 2 mm.

Natal.

Antennæ blackish above, the scape yellow, the flagellum brownish below. Face somewhat closely punctured, the front and vertex smooth. Thorax smooth; the mesopleuræ closely punctured. Scutellum thickly covered with long fuscous hair; the lateral keels moderately high. Areola large, 6-angled, longer than wide, the base more than half the width of the apex; the tooth-bearing area large, not much narrowed on the inner side. Ocellar region black. Abdomen immaculate, closely, strongly punctured; the first segment twice longer than wide; the centre of the second to fifth segments raised; the raised part roundly narrowed laterally; the apical two segments smooth; the last large; in its centre are two keels forming a triangle, with a short pedicle at the base of the segment.

The areola in this species is much larger than usual.

DELAULAX, gen. nov.

Wings uniformly fuscous; the disco-cubital nervure broken by the stump of a nervure; areolet 4-angled, the transverse cubital nervures united in front. Transverse median nervure in hind wings broken in the middle. Apical joint of antennæ shorter than the preceding two united. Clypeus separated by a narrow line from the

face; its apex with a semicircular depression. Abdomen punctured, with transverse depressions; the first segment twice longer than it is wide at the apex; the apical slope depressed; the apex of the segment not raised in the centre; the second segment longer than wide; the third slightly longer than wide; the others wider than long. Metathoracic spiracles small, almost round. Parapsidal furrows deep at the base of mesonotum.

I only know the ♂ of this genus. Its characteristics are the uniformly fuscous wings, red body colour, long first abdominal segment and transverse median nervure in hind wings broken in the middle. The similarly coloured species of *Pimpla* may be at once known by the transverse median nervure in hind wings, being broken above the middle. In Ashmead's arrangement the genus would come in near *Itopectis* and *Eremochila*.

DELAULAX RUFUS, sp. nov.

Rufous, the antennæ, the centre of the front and vertex broadly, the centre of the occiput broadly, the line narrowed above and continuous with that on the vertex, the sides of the mesonotum broadly, the parts at the sides of the scutellums broadly, the mesosternum and the hind tibiæ and tarsi, black. Wings uniformly fuscous violaceous, the stigma and nervures black. ♂.

Length 9-10 mm.

Cape Colony. Cape Town.

Shining, covered with white pubescence on the body and legs, on the face with black hair. Median segment closely, strongly punctured, a broad smooth space down the middle of the metanotum; the lower part of the metapleuræ only weakly punctured. Basal slope of the first abdominal segment smooth, the rest of it strongly, but not closely punctured; the second to fourth are more closely and quite as strongly punctured; the fifth is more weakly punctured; the sixth smooth and densely pilose; the apices of all the segments are smooth.

HOLCOPIMPLA, gen. nov.

Median segment neither keeled nor areolated, a wide, distinct furrow down the middle; the spiracles small, oval. Scutellum roundly convex, its sides not keeled. Parapsidal furrows distinct on the basal half. Clypeus separated from the face by a narrow furrow; it is largely depressed on the apical half; the depression is narrowed above. Abdomen closely punctured, the segments depressed at the base; the first segment longer than wide, the second as long as

wide, obliquely depressed laterally at the base; the other segments wider than long; the ovipositor longer than the abdomen. Transverse median nervure in hind wings broken in the middle; areolet 4-angled, the transverse cubital nervures uniting in front. Legs moderately stout; the basal joint of hind tarsi as long as the following two united; the claws bear a very large, broad, bluntly rounded projection on the basal half. Colour yellow.

The eyes are bare, parallel, neither converging above nor below; the malar space is not quite so long as the antennal scape. The last antennal joint is as long as the preceding two joints united. The disco-cubital nervure is slightly angled in the middle, not broken by a stump; the transverse median nervure interstitial.

The clypeus is not separated so strongly by a furrow as it is in *Pimpla*. Its nearest known ally is *Erythropimpla*. The yellow colouration gives it the appearance of a *Xanthopimpla* or *Theronia*; but the absence of keels from the median segment separates it from both; the stoutly keeled scutellum of the former and the smooth abdomen of the latter are further points of distinction.

HOLCOPIMPLA NIGRICORNIS, sp. nov.

Yellow; the antennæ black; there is a black mark on either side of the apex of the median segment, and a transverse one on the apex of the second abdominal segment near the outer edge. Wings hyaline, the stigma and nervures black, the areolet oblique, very shortly appendiculated; the recurrent nervure is received shortly beyond the middle. ♀.

Length 11 mm.; ovipositor 9 mm.

Cape Colony. Kimberley.

Head smooth, sparsely covered with short white pubescence. Mandibular teeth black. Pro- and mesothorax are smooth and shining; the metanotum closely and strongly punctured, except the central furrow which is smooth; the upper part of the metapleuræ is more sparsely weakly punctured. Metapleural keel stout, becoming weaker towards the apex. Abdomen, except the last segment, closely, rugosely punctured; the apices of the segments are depressed, smooth; the last is smooth, raised, triangular, bordered by two furrows, which unite at the base. Hind tarsi black. Sheath of ovipositor black; slender.

I have a specimen from the Transvaal which is only 7 mm. in length. Such differences in size are not uncommon with the *Pimplinæ*.

SPILOPIMPLA, Cam.

SPILOPIMPLA RUFITHORAX, Cam.

Dunbrody.

PIMPLA, Fabr.

* PIMPLA NATALENSIS, sp. nov.

Rufous, the antennæ, ocelli, and the hind tibiæ and tarsi, black; the wings yellowish hyaline, an irregular cloud commencing on the stigma near its base, shortly behind the radius and extending to the opposite side, a wider cloud at the apex of the wing, both being united by a cloud as wide as the basal at the posterior edge of the wings; there is a cloud, as wide as that on the apex of the front wings, on the hinder pair; the part of the stigma enclosing the cloud is black; its base, costa, and nervures are yellow. ♀.

Length, body and ovipositor, nearly 10 mm.

Natal.

Head smooth and shining, the face covered with long fulvous hair. Apex of mandibles black. Antennæ covered with a dense microscopic black pile; the apical joint brown, as long as the following two united. Temples not narrowed, rounded behind. Areolet shortly appendiculated, almost sessile, oblique; the recurrent nervure is received at the base of the apical fourth. Transverse median nervure in hind wings broken shortly above the middle. The discocubital nervure is distinctly broken. Abdomen twice longer than the head and thorax united; the basal five segments closely, strongly punctured except at the apex; the transverse depressions are shallower than usual; on the base of the last segment are two furrows which unite at the base. Metanotal spiracles oval. Claws untoothed. The ovipositor is straight, projecting from the lower side of the abdomen.

This species has a great resemblance to *Cosmiopimpla vipoides*, but, apart from the fact that the latter has three clouds in the wings, it has also the transverse median nervure in hind wings broken below, not above the middle as it is in *Pimpla*.

PIMPLA LIMBATA, Tosq.

Mém. Soc. Ent. Belg., v., 1896, p. 295.

This species (described from the Cape) is in the collection from King William's Town District (St. Mathew's). It comes close to *P. shawi*, Cam., Records Albany Mus., i., 145. The two may be separated thus:—

The subapical band on the forewings continuous, median segment sparsely punctured; thorax entirely black; ovipositor longer than the abdomen *shawi*.

The subapical band on the forewings not continuous, median segment closely strongly punctured; thorax largely marked with pale yellow; ovipositor much shorter than the abdomen *limbata*, Tosq.

PIMPLA PROPERATA, Tosq.

There is a female in the collection, and I have also seen two males from the Cape. The amount of red or purple on the abdomen varies in the ♂; it may be black, only obscurely tinged with red or purple tints; the colour of the legs varies also; they may be almost entirely black, especially the posterior; and the amount of yellow on the anterior varies also. I consider it very probable that *P. mahalensis*, Grib., and *P. conchylata*, Tosq., may be forms of one species. So far as I can judge from the limited material at my disposal, I should think that the colouration of these forms is too unstable to be of much use for separating them specifically. (Cf. Tosquet, Mém. Soc. Ent. Belg., v., 295.)

PIMPLA MELANOSPILA, sp. nov.

Rufous, the abdomen darker coloured, the antennæ (the under side of the flagellum is brown), head, the breast—the black extending on to the pleuræ—the mesonotum narrowly near the wings, and the mandibles black; the palpi white, the four front legs for the greater part whitish yellow, the edges of the femora above and below, the tibiæ at the base narrowly and the greater part of the rest (the two parts separated by a narrow line) fuscous; the hind coxæ, tibiæ, except for a white band near the apex, the tarsi, except for a white band on the basal half, black; the trochanters white, femora red. Wings hyaline, the nervures and stigma black, the base of the latter narrowly white. ♀.

Length 9 mm.; terebra 2 mm.

Cape Colony. Cape Town.

Face closely, strongly punctured and covered with fuscous pubescence. Clypeus smooth, shining, roundly convex, broadly depressed in the middle. Median segment closely punctured, thickly covered with white hair. Basal five segments of the abdomen closely and strongly punctured; the sixth more weakly punctured, the seventh smooth; the first segment is twice longer than its width at the base; the apices of the segments are smooth. Areolet small, oblique, 4-angled, the nervures uniting in front.

PIMPLA HEXENSIS, sp. nov.

Black, the legs bright red, flagellum of antennæ brownish below; the palpi testaceous yellow; tegulæ pale yellow; the edges of the clypeus testaceous; the abdominal segments narrowly, but distinctly lined with rufous at the apex. Wings hyaline, the stigma fuscous, the nervures black. ♂.

Length 7 mm.

Cape Colony. Worcester Distr.; Hex River.

Face closely, strongly punctured, bluntly keeled in the middle, thickly covered with white pubescence. Apex of clypeus smooth, depressed, brownish, paler round the edges. Front punctured in the middle. Temples broad, obliquely roundly narrowed. Mesonotum very smooth and shining. Scutellum more opaque, finely punctured. Metanotum closely, somewhat strongly transversely striated; the apical slope smooth. Propleuræ smooth, the apex with a striated band. Mesopleuræ smooth and bare above, below punctured and covered with white pubescence. Metapleuræ closely, distinctly punctured, the punctures running into striæ at the apex. There is a crenulated furrow near the apex of the mesopleuræ. Abdomen closely punctured; the punctures becoming weaker towards the apex; the first segment three times longer than its width at the apex; its spiracles prominent; there are no transverse depressions. Areolet oblique, sessile, almost appendiculated, the recurrent nervure is received shortly beyond the middle; the discocubital nervure is angled and broken by a distinct stump of a nervure before the middle; the transverse median nervure in hind wings is broken shortly above the middle. The first joint of the flagellum is about one-fourth longer than the second; the last is shorter than the preceding. Eyes not emarginate. Parapsidal furrows obsolete. Metathoracic spiracles small, oval. Claws untoothed.

This is not a typical *Pimpla* as now defined, but having only a single male I leave it in that genus for the present.

COSMIOPIMPLA, Cam.

COSMIOPIMPLA FERRUGINEA, Cam.,

Trans. S. Afric. Phil. Soc., vol. xv., 1905, p. 198.

This species is probably identical with *Pimpla vipoides*, Brullé (Hymén., iv., 96). Most of the specimens in the collection have a small black mark on the sides of the second and third abdominal segments. The ♂ is similarly coloured to the ♀, except that it may

be paler, more testaceous in colour, the yellow tint in the wings being also paler. In the collection from Rondeburg, September, is a closely allied species or variety, differing from the type in having the median segment and the hind legs largely suffused with black, and in the first abdominal segment being black. The punctuation on the abdomen is closer. Probably the species is variable in colouration, as it certainly is in size.

GLYPTA, Gravenh.

GLYPTA NIGRO-ORNATA, sp. nov.

Rufous, the face, inner orbits, mandibles and palpi yellow, tinged with rufous; the front and vertex broadly, the occiput, outer edge of the outer orbits, the outer, upper half of the malar space, mesonotum at the sides behind the tegulæ, propleuræ from shortly below the middle, prosternum, meso- and metasternum, the black extending on to the pleuræ, a narrow line behind the tubercles, a broad line along the lower two-thirds of the apex of the mesopleuræ, the scape of the antennæ above and the flagellum entirely, black. ♂.

Length 9 mm.

Cape Colony. Stellenbosch.

Face and clypeus minutely punctured and covered with a white pubescence; the front and vertex smooth and shining. Malar scape longer than the antennal scape. Mandibular teeth equal in length. Mesonotum strongly, but not closely punctured, the punctures in rows, the sides of the central lobe smooth at the base; it is clearly separated to near the apex. Scutellum roundly convex; it is strongly punctured; post-scutellum smooth. Pleuræ and mesonotum strongly and closely punctured—more closely and strongly than the mesonotum. First abdominal segment except at the base, and the second to fourth strongly closely punctured; the others smooth, pilose, the last tinged with yellow; genital armature large, black. Wings hyaline, the nervures and stigma black; the areolet oblique, shortly appendiculated; the second transverse cubital nervure the longer; it is also fainter. The four front legs are largely tinged with fulvous; the hinder are redder in tint and have the apex of the tibiæ and the calcaria black.

The first abdominal segment is twice longer than wide; the second and third are wider than long; the furrows are deep. There is a deep, oblique furrow on the lower half of the metapleuræ, its lower part touching the base; on the lower basal half is a leaf-like, obscure yellow keel, immediately over the coxæ. The transverse median

nervure is received beyond the transverse basal. First joint of flagellum distinctly longer than the second. The disco-cubital nervure is thickened shortly behind the middle, almost broken; the recurrent nervure is interstitial; the transverse median nervure in hind wings is broken below the middle; the issuing nervure is faint.

Allied to *G. rufescens*, Tosq.

XANTHEPHIALTES, gen. nov.

Second abdominal segment twice longer than wide, the third slightly longer than wide, the others wider than long; the third to fifth segments with two large oval raised tubercles behind the middle; there are two indistinct ones on the second. Areolet large, wide, the transverse cubital nervures meet in front; they are curved, the basal longer than the apical. Disco-cubital nervure unbroken. Transverse median nervure in hind wings broken almost in the middle. Claws with a stout tooth at the base; the last joint of hind tarsi fully four times longer than the preceding. Median segment smooth; the spiracles oval, of moderate size.

The temples are straight, the occiput transverse. Mandibles unequally toothed, the upper tooth turned inwardly. Malar space short, but distinct. Colour yellow; the wings black and yellow. Parapsidal furrows absent. Scutellum flat, longer than wide.

The relationship of this genus appears to be close to *Ephialtes*; that genus has the abdomen much longer, all the segments, except the apical, being much longer than wide; the transverse median nervure in hind wings is broken distinctively above the middle, the median segment is not smooth, the wings hyaline and the parapsidal furrows are distinct at the base.

This genus is founded on *Ephialtes oculatus*, Bé., Hymén., iv., 81; Tosquinet, Mém. Soc. Ent. Belg., v., 278; which is in the collection from Cape Colony, King William's Town Distr. St. Mathew's. (A. Lightfoot.)

LISSONATA, Grav.

The species may be separated by means of the following table:—

- | | | |
|--------|--|----------------------|
| 1 (1). | Abdomen rufous. | |
| 2 (3). | Thorax rufous, only black at the base and apex of mesonotum; head black, not marked with yellow, the apex of abdomen black | <i>fulvipalpis</i> . |
| 3 (2). | Thorax black, marked with yellow; the head black, maculate with yellow; apex of abdomen not black. | |

- 4 (5). Metanotum entirely black, basal segment of abdomen black, except at the apex *spilocephalus*.
- 5 (10). Metanotum black, middle and apex marked with yellow.
- 6 (7). Scutellum black, the sides and apex yellow, pleuræ black, the mesopleuræ with a curved yellow line; the metapleuræ with a yellow spot *interstitialis*, Cam.
- 7 (6). Scutellum yellow, a small black spot at the base; the pleuræ for the greater part yellow.
- 8 (9). Breast yellow; apical cloud in fore wings small, fuscous; the ovipositor longer than the body *marshalli*.
- 9 (8). Breast black; apical cloud in fore wings large, black; the ovipositor shorter than the body *fuscicornis*.
- 10 (5). Metanotum rufous; the rest of the thorax rufous, marked with yellow *africana*, Cam.
- 11 (1). Abdomen black, the segments lined with yellow.
- 12 (13). Pleuræ black; the mesopleuræ with a curved yellow line at the bottom *curvilineata*, Cam.
- 13 (12). Pleuræ yellow, slightly marked with black.
- 14 (17). Apical segments of abdomen not lined with red.
- 15 (16). Mesonotum black, with two yellow lines, base of abdomen black; the wings not smoky at the apex *lineaticeps*.
- 16 (15). Mesonotum yellow with three black marks, base of first abdominal segment broadly yellow; the wings smoky at the apex *ethiopica*.
- 17 (14). Apical segments of abdomen lined with red. *pulchribalteata*.

LISSONATA LINEATICEPS, sp. nov.

Yellow; the antennæ, a line, dilated above, down the middle of the face, one along the sides of the clypeus, the pronotum, a broad line going out from the black on it to the pleuræ, three broad lines (the yellow lines separating them narrow) on mesonotum, the metanotum, except for a reversed T down the middle, and an irregular longish oval mark on the sides at the base, the sides and top of the mesopleuræ, the basal line dilated obliquely below, the apical wider, narrowed above, the top of the lower part obliquely dilated, and the abdominal segments, except at the apex, and the first segment narrowly on the sides at the base, black. Four front legs yellow; the trochanters and femora lined with black behind; the coxæ largely marked with black at the base behind; the hind legs are fulvous; the coxæ broadly black on the inner side and with a broad line on the basal two-thirds below; the trochanters largely marked with black; the femora lined with black above; the tarsi darker coloured than the tibiæ. Wings clear hyaline, the nervures and stigma black; the areolet with the pedicle as long as the inner branch, which is straight; the outer is rounded; the recurrent nervure is received in the middle and is bullated above; the transverse median nervure is interstitial. ♂.

Length 8 mm.

Cape Colony. Grahamstown.

Face sparsely punctured, roundly dilated; the front and vertex are more strongly punctured. Thorax strongly and closely punctured. Covered with a thick pale pubescence. Palpi fuscous. Basal half of the mandibles yellow, the apical black. Mesosternum black, with a yellow line down the sides, these lines being narrower than the outer black ones.

May be known from *L. æthiopica*, Cam., by the broader black lines on the mesonotum, and on the metanotum, by the base of the first abdominal segment not being black, by the broad black lines on the mesosternum and by the line on the face.

LISSONOTA ÆTHIOPICA sp. nov.

Yellow; the following parts black: the antennæ, the occiput, except at the sides, the vertex broadly, the front more narrowly, a broad line in the centre of the mesonotum extending from the base to shortly beyond the middle, a similar line on the apical three-fourths of the sides, the parts bordering the scutellums, two broad lines, united at the apex, on the sides of the mesonotum, the inner curved roundly, the outer straight, a narrow line, dilated below, on the base of the mesopleuræ, a broader one on the apex, its upper third narrowed, a line down the middle of the mesosternum dilated laterally at the base and apex, a large mark near the middle of the first abdominal segment, its base narrowed to a blunt point, its apex transverse; the others are black except at the apex; the second having also two irregularly triangular yellow marks at the base. Four front legs yellow, the femora broadly lined with black behind, the edges there fulvous; the hind legs fulvous, the coxæ and trochanters yellow, the former almost entirely black on the inner side, on the outer with a broad black line; the tarsi infuscated. Wings hyaline, their apices smoky; the smoky cloud on the anterior commences near the end of the radial cellule; areolet small, oblique, triangular; the pedicle oblique, longer than the branches; the recurrent nervure is received near the middle. ♀.

Length 8-9 mm.; terebra 6 mm.

Cape Colony. Cape Town.

The ♂ is similar, but smaller; there is a continuous line on the base of the second abdominal segment; the black mark on the front and vertex is broader, on the pleuræ the lines and marks are smaller; the line on the mesosternum is interrupted and narrowed.

LISSONOTA PULCHRIBALTEATA, sp. nov.

Black, the head yellow, except a short black line in the centre of the face below the antennæ, a broad black mark on the front and vertex, that on the latter the broader and dilated in the middle, and the occiput, except at the edges; except the clypeus and outer orbits it is closely punctured; on the thorax the following are black; a transverse line on the centre of the pronotum, a broad line on the basal half of the mesonotum, rounded and narrowed at the apex, a broader line on the sides, commencing close to the base and extending to the apex; a small mark at the base of the scutellum, a large irregular mark on the sides of the median segment, longer than broad, narrowed at the apex, where there is a small incision; it extends from the base to near the apex; in the centre of the basal half is an elongated yellow mark, twice longer than wide; on the apex is a black mark, dilated in the middle. Abdomen black, the base of the first and the apex of all yellow; behind the yellow on the fourth and following segments is a rufous band; the apical segments are covered with a white pile; the middle ones are punctured. Legs fulvous; the coxæ, trochanters, four anterior femora and tibiæ in front yellow; all the trochanters and femora are lined behind with black; the hind coxæ are broadly black on the inner side and, on the basal half below, there is a black line. Areolet small, triangular; the pedicle distinctly longer than the lateral nervures; the recurrent nervure is received near the middle.

Antennæ black. Mesosternum yellow, lined with black on the sides; the metasternum black. There is a black line on the base of the mesopleuræ, which above runs below the tubercles, is extended to the apex underneath; its apex is black, triangularly dilated below the middle. ♂.

Length 10–11 mm.

Cape Colony. Neighbourhood of Cape Town.

LISSONOTA FUSCICORNIS, sp. nov.

Head and thorax black, largely marked with yellow; the abdomen bright ferruginous-red; the base of the first broadly and the apices of all the segments narrowly and obscurely yellow; wings hyaline, the apex with a blackish cloud which commences at the apical fourth of the radial cellule. Legs of a paler red colour than the abdomen; the four front coxæ and trochanters pale yellow; the

hind coxæ pale yellow, broadly streaked with black on the inner and outer side; the base of the coxæ broadly black above. ♀.

Length 14; terebra 11 mm.

Cape Colony. Kentani.

On the face a broad line runs down from each of the antennæ to the middle; between them is a slightly longer line, with the apical half dilated. The clypeus is clearly separated; its sides bordered with black; the black lines project straight upwards. On the front and vertex is a broad black line, which is broadest on the vertex, where it is roundly dilated in the middle and is continued, as a much broader mark, on to the vertex. Mandibles pale yellow, black at the apex. The head is strongly punctured. Vertex, front and face strongly closely punctured. Areolet small, triangular, the lateral nervures curved, shorter than the pedicle; the recurrent nervure interstitial with the apical. The following pale yellow markings are on the thorax: a large triangular mark on the propleuræ, tubercles, a large oblique mark on the centre of the mesopleuræ, rounded at the base above, its apex slightly projecting and transverse, a line along the base of the metapleuræ above, a large, somewhat pyriform mark in the centre, the narrowed end above, projecting and curved, two elongated triangular marks on the base of the mesonotum, a squarish mark in the middle of the apex; scutellums, a line on the centre of the metanotum, which becomes broadly, roundly dilated at the apex; there being thus formed, with the yellow of the pleuræ, two large triangular black marks at the base of the segment; they extend to shortly beyond the apex; the outer side is straight, the inner rounded; inside, at the base, is a squarish yellow mark. The apical transverse keel on the metanotum is only weakly indicated at the sides.

LISSONOTA FULVIPALPIS, sp. nov.

Rufous, the head, basal joints of antennæ, and the fifth and seventh segments of the abdomen, black; the flagellum of antennæ, except at the base, brown; legs coloured like the body, the fore coxæ paler in tint; the base of pro- and mesosternum, black. Wings hyaline, the costa and stigma rufo-fuscous, the nervures blackish; on the apex of the forewings is a deep black-violaceous cloud, which commences at the middle of the radial cellule and extends shortly beyond the areolet; there is a small faint cloud in the apex of the radial cellule of the hind wings. ♀.

Length 15 mm.; terebra 17 mm.

Transvaal. Rustenburg Distr.

Head closely and rather strongly punctured, sparsely covered with short black pile; the apex of the clypeus is pale fulvous; the mandibles pale fulvous-yellow behind the teeth and narrowly below; the upper tooth is longer than the lower. Thorax closely and strongly punctured all over; the apex of the scutellum less strongly and closely punctured and tinged with yellow; there is a large black mark, of equal width throughout, extending from the base to the middle; and there is a mark of similar size, but transverse, across the base, close to the scutellum. The middle segments of the abdomen are streaked with black. Areolet triangular, the pedicle slightly longer than the branches; the recurrent nervure is received in the middle; transverse median nervure received beyond the transverse basal.

LISSONOTA MARSHALLI, sp. nov.

Head and thorax lemon-yellow, largely marked with black; the abdomen rufous, the basal three segments at the apex narrowly marked with yellow; the four front legs lemon-yellow, the base of the anterior coxæ and the femora lined with black behind; the hind legs rufo-testaceous, their coxæ broadly lined with black, within and without, the basal joint of hind trochanters black, the apical yellow; the hinder tarsi infuscated. Wings hyaline, the apex with a smoky cloud; the areolet slightly longer than wide, rounded, not much narrowed in front; the apical transverse cubital nervure is rounded, the basal straight, oblique; the pedicle is slightly longer than the latter. ♀.

Length 12 mm.; terebra 17 mm.

Southern Rhodesia. Salisbury.

Antennæ black. The following parts on the head and thorax are black: front and vertex broadly, occiput, except narrowly round the edges, the mesonotum except two somewhat triangular spots at the base, the part bordering the scutellums, two large triangular marks on the metanotum, extending from the base to near the apex; the outer side straight, the inner roundly curved, and there is a square yellow mark on the outer side of the base; a line along the sides and top of the mesopleuræ, the line on the apex broader and irregularly dilated in the middle, the basal line being also broader below. Face closely and finely punctured; the clypeus smooth. Thorax closely and strongly punctured. The recurrent nervure is received in the middle of the areolet.

LISSONOTA CURVILINEATA, Cam.

Records Albany Museum, i., 147.

The example of this species described is a ♂. There is a ♀ in the South African Museum from Dunbrody (Rev. J. A. O'Neil). It resembles the ♂, but with the yellow markings more extended; and the apical four segments of the abdomen are for the greater part rufous, the basal four, as in the ♂, being bordered at the apex with yellow. The ovipositor is from 4 to 5 mm. long; body length 8 to 10 mm.

? LISSONOTA SPILOCEPHALA, sp. nov.

Black, head yellow, the middle of the front and vertex broadly, the occiput, three lines on the face, the central the longer and thicker, two marks below leading into the clypeal foveæ, becoming gradually wider; a broad line on the outer orbits at the top uniting the eyes to the black on the vertex, black. Thorax black, two narrow lines on the mesonotum, scutellums, a line on the top of the prothorax, a narrower one on the lower edge, a broad band, obliquely narrowed at the apex on the lower part of the mesopleuræ, the middle roundly incised above, below broadly roundly dilated, and a broad band, widest behind, in the centre of the metapleuræ, lemon-yellow. First abdominal segment black except at the apex; its apex and the rest of the abdomen dark rufous, the apical segments marked with black. Four front legs fulvous, tinged with yellow; the coxæ and trochanters yellow; the hind legs rufous, their coxæ yellow above. Wings hyaline, the stigma and nervures black, the former fuscous at the base; areolet shortly appendiculated; the transverse median nervure received shortly, but distinctly beyond the transverse basal. ♂.

Length 8 mm.

Cape Colony. Stellenbosch.

Head shining, smooth, the ocellar region slightly punctured; buccate, the malar space as long as the lower side of the antennal scape. Clypeus not separated from the face, its apex sharply rounded. Mandibles yellow, their teeth black. Palpi fuscous. Thorax shining, the pleuræ closely and strongly punctured; the mesonotum weakly, somewhat sparsely, the scutellum as strongly, but not so closely punctured as the sides. Metanotum punctured slightly more strongly than the sides; there is a distinct transverse keel close to the apex, extending to the pleuræ; the spiracles are small, oval. Metapleural keel distinct, dilated roundly at the base. Disco-cubital nervure not angularly broken, without a stump of a nervure. Claws not distinctly pectinated.

RHYNCHOTREVORIA, gen. nov.

Head rostriform, the malar space half the length of the eyes. Clypeus longish, narrowed to a rounded point below; not separated from the face; the lateral fovea distinct. Maxillæ long, projecting beyond the mouth. Third joint of antennæ twice the length of the fourth. Apex of metanotum without a transverse keel; its spiracles small, oval. Metapleural keel distinct. Areolet with a long pedicle; disco-cubital nervure broadly rounded, not angled or broken by a keel; transverse median nervure almost interstitial; the median nervure in hind wings broken below the middle. Claws simple. Legs slender.

There are thirty-three joints in the antennæ, all distinctly separated; the last is fully one-half longer than the penultimate. Basal segments of the abdomen smooth, the others weakly aciculated, almost smooth. Claws of moderate length, slender. Ovipositor long. Abdomen sessile.

The rostriform head and elongated trophi distinguish this genus. In Ashmead's System it comes near to the American genus *Trevoria* Ashm.

RHYNCHOTREVORIA ROSTRATA, sp. nov.

Head and thorax yellow; the ocellar region, the mark produced below to the antennæ, and incised in the middle behind; the lower part of the occiput in the centre below, a broad line on the basal half of the mesonotum in the centre; one on the apical two-thirds close to the sides, narrower and curved inwards at the apex; a square mark near the sides of the scutellum at the base, two broad lines on the basal half of the metanotum, straight on the outer side, rounded on the inner, and a line on the outer and inner sides of the hind coxæ, black. The apices of the basal three segments of the abdomen are yellow; the first is broadly black in the middle; the rest rufous, tinged with black. Four front legs and the hind coxæ and trochanters pale yellow; the hinder fulvous. Wings hyaline, the nervures and stigma black, the latter white at the base. ♀.

Length 8 mm.; terebra 4 mm.

Cape Colony. Near Cape Town.

Covered with a short white pile, closely punctured on the head and thorax, the abdomen smooth, as are also the outer orbits and the malar space and the apex of the clypeus. Apex of scutellum broadly rounded, keeled round the lower edge. Pedicle of areolet

slightly longer than the transverse cubital nervures; the recurrent nervure is almost interstitial with the second. The basal two joints of the fore tarsi are as long as the tibiæ. Hind coxæ fully three times longer than wide.

XORIDINI.

GONIOPRYMNUS, gen. nov.

Antennæ about the length of the thorax; densely pilose; the apex with a 3-jointed projection, which sticks out at an angle; the joint from which it springs bears three stout longish spines, the middle being the stouter. Between and above the antennæ is a flat plate, which, above, extends to the antennæ, the upper part reduced to a narrow keel, the lower part obliquely narrowed above. Clypeus roundly depressed. Mandibles curved, edentate. Labrum large, oblique, its apex rounded. Parapsidal furrows indistinct. Median segment broadly rounded, closely reticulated, without keels, its spiracles oval. Wings without an areolet; the recurrent nervure received shortly beyond the transverse cubital; the transverse median behind the transverse basal. Disco-cubital nervure not broken. Transverse median nervure in hind wings broken very shortly above the middle. The first abdominal segment becomes gradually wider towards the apex; it is more than twice longer than the width at the apex; the second and third have transverse furrows near the apex; the third has two oblique furrows which, with the apical transverse one, form a triangle. Legs short; the coxæ longish; the tarsi shorter than the tibiæ; the calcaria and claws short.

The ovipositor and palpi are long. Occiput transverse; the edge bordered by a projecting keel, hollowed on the inner side. Eyes slightly converging above; the ocelli are placed well in front of their hinder edge. Temples distinct, not narrowed. Pterostigma longish.

The peculiar form of the antennæ readily distinguishes this genus from any of the known African or European genera of *Xoridini*. A somewhat similar apical process is found on the antennæ of the Malay genera *Epixorides*, *Cyanexorides* and *Spiloxorides*, but these genera are readily separated, *inter alia*, by the areolated metathorax and by the different structure of the antennal whip.

GONIOPRYMNUS MACULICEPS, sp. nov.

Black, the thorax, except the lower side of the propleuræ, the breast, an oblique mark on the lower side of the mesopleuræ at the

apex, the metapleuræ below the keel, pale rufous; the apical nine or ten joints of the antennæ (but not the apical appendicular joints), a white line on the sides of the face close to the eyes, commencing above their middle and extending to the clypeus, becoming gradually wider and more irregular below. Legs black; the four anterior tibiæ and femora white in front and the base of their tarsi of a more obscure white colour. Wings hyaline; there is a brownish narrow cloud along the transverse basal and the transverse median nervure; the nervures and stigma black. On the sides of the furrow on the second abdominal segment is a small irregular white spot; the apex of the fourth and the whole of the fifth, sixth, and seventh segments are white above. There is a broad white band near the apex of the ovipositor. ♀.

Length 12 mm.; terebra 10 mm.

Cape Colony. George.

Covered rather closely with white pubescence. Front closely, the vertex more sparsely punctured. Face strongly closely reticulated; the oral depression irregularly striated. Labrum dirty white, darker in the middle above. The frontal keel is bordered by striæ; outside these above is a smooth, shining space. Pro- and mesothorax strongly, but not very closely punctured; the under side of the propleuræ reticulated; the apex of the mesopleuræ smooth. Median segment more closely and strongly punctured; the punctures on the metanotum running into reticulations. Basal 3 abdominal segments closely punctured; the punctures on the second and third running into reticulations; the basal half of the fourth is irregularly reticulated; the other segments are smooth. Legs densely covered with white pubescence; the four anterior coxæ are marked with white at the apex; the hind tibiæ are broadly brownish at the base. The first and second ventral segments are largely white.

HEMIGASTERINI.

CTENOTOMA, gen. nov.

Abdomen petiolated, the post-petiole dilated; the spiracles are placed at the base of the apical third, *i.e.*, at the base of the dilated post-petiole. Abdomen smooth, without furrows; it is stout, somewhat compressed; the ovipositor projects from the lower surface; it is as long as the apical two or three segments. Wings without an areolet; the recurrent nervure is received shortly beyond the transverse cubital; the transverse median nervure is received distinctly

beyond the transverse basal; the disco-cubital nervure is unbroken. Transverse median nervure in hind wings broken shortly below the middle. Mesonotum trilobate; the furrows narrow, but distinct. Mesosternum not bordered by a suture. Head largely dilated behind the eyes; the occiput roundly incised. Clypeus not separated from the face by a transverse furrow; there is a large, deep fovea on either side; it is gradually narrowed to a point at the apex, which forms a blunt tooth. Mandibles short, broad; there are two stout, equal teeth. Metanotum depressed in the middle; the apex with irregular keels; the spiracles large, linear. Legs long, slender, the hind metatarsus as long as the other joints united; the fore tibiæ are not narrowed at the base; the four anterior claws are not pectinated at the base; the posterior stouter, more curved and simple. Pterostigma long, narrow; the sub-discoidal nervure originates below the middle of the discoidal.

The known species of this genus are large, stout-bodied rufous and black insects, with fuscous or fuscous and yellow wings. Their systematic position is not quite clear. They have some of the characteristics of the *Xoridini*, but they differ in the form of the first abdominal segment and in the position of the spiracles on it. I feel inclined to refer them to the *Hemigasterini*, a tribe of the *Cryptinæ*, which has, like my genus, no areolet in the fore wings; but the group in question agrees with the other *Cryptinæ* in the species having a furrow bordering the mesosternum: this furrow is absent in *Ctenotoma*.

The three species known to me may be separated by means of the following table:—

- | | | |
|----|--|------------------------------|
| a. | Wings fuscous, except for two or three small hyaline clouds at the stigma. | |
| | Abdomen and hind legs black; the occiput yellowish | <i>fuscipennis</i> . |
| | Abdomen and hind coxæ, trochanters and femora red; the occiput black | <i>nigriceps</i> . |
| b. | Wings fuscous, the base broadly yellow; the apex of abdomen broadly and the hind tibiæ and tarsi black | <i>ruficeps</i> . |

CTENOTOMA FUSCIPENNIS, sp. nov.

Rufo-testaceous, the face paler, more yellowish in tint; the antennæ, front and vertex, the greater part of the outer orbits; the abdomen, except the basal segment and the hind legs, black, the hind coxæ obscure rufous in the middle above, wings fuscous, with three hyaline spots. ♀.

Length 23 mm.

Natal. Estcourt.

Head and thorax densely covered with pale fulvous pubescence.

Face closely and strongly punctured; its centre is raised broadly; on the top is a short, wide furrow. Clypeus more sparsely and deeply punctured above, the apex smooth; the lateral foveæ are large and deep. Occiput, except round the edges, pale yellow. In the centre of the base of the metanotum is a deep depression, longer than wide and rounded at the apex; beyond it the centre is depressed; the apical slope is depressed; on it are three stout, curved, irregular keels; the outer edges are irregularly reticulated. The hinder edge of the apex of the costa and of the base of the stigma are luteous; below the base of the stigma is a cloud, which extends, on the outer side, obliquely to the disco-cubital nervure, the inner side is bilobate, the front lobe being the larger and rounder there is a smaller, elongated cloud in the centre of the base of the third discoidal cellule, and a still smaller square one at the base of the first apical cellule at the discoidal nervure.

CTENOTOMA NIGRICEPS, sp. nov.

Rufous, the antennæ, front and vertex black; the lobes of the mesonotum infuscated; the face, clypeus and mandibles yellowish testaceous; the wings fuscous, tinged with violaceous; there is a hyaline—slightly tinged with yellow—cloud, extending from the apex of the costa to the opposite side of the wings; its inner edge is irregular; its outer is dilated along the disco-cubital nervure. Apex of hind tibiæ broadly, and hind tarsi black. ♀.

Length 22 mm.; terebra 3 mm.

Natal. Durban. "Bred in Cape Town."

Head and thorax densely covered with a short, fulvous pile; smooth and shining. On the centre of the base of the metanotum is a depression which is wider than long, its sides obliquely sloped from above to the bottom; the outer border raised into a bluntly, rounded tubercle; the apical slope, except broadly in the middle below, is stoutly, irregularly reticulated. Pleuræ smooth, shining, more densely pubescent than the mesonotum.

Probably the amount of black on the mesonotum and on the hind tibiæ varies. The ♂ has the ventral segments of the abdomen more largely splashed with dirty, lead-coloured white than the ♀; probably the amount of this colour varies.

CTENOTOMA RUFICEPS, sp. nov.

Rufo-testaceous, the antennæ, ocellar region and middle of front broadly, the apex of the third and the following abdominal segments entirely, ovipositor, a spot on the apex of the hind femora and the

hind tibiæ and tarsi, black. Wings fuscous, tinged with violaceous, the base to near the commencement of the transverse median and basal and the hinder pair to near the middle yellowish hyaline; the costa at the base of the stigma yellow. ♀.

Length 19–20 mm.; terebra 3 mm.

Natal. "Caught in window of room in Cape Town in which were divers pupæ of Saturnidæ."

Antennæ nearly as long as the body, covered with a short, dense, stiff microscopic pile. Centre of front closely, finely punctured; covered with a blackish pile. Face strongly punctured, its centre with a longitudinal furrow and with a similar furrow on either side; the raised central part of the clypeus is furrowed, the furrow narrowed at the apex; the part bordering the furrow is flat, smooth and shining. Thorax densely covered with fulvous pubescence. There is a wide furrow down the middle of the metanotum; the base of the latter is smooth, the apex stoutly irregularly reticulated. Pleuræ smooth and shining. Abdomen smooth, shining, bare; the sides of the apical two dorsal segments below are whitish testaceous.

AROTES, Gravenh.

? AROTES FLAVESCENS, sp. nov.

Yellow, darker above, the mesonotum infuscated, the apical segments of abdomen black above; the antennæ, except for a white band of four joints between the middle and apex, the ocellar region, the hind tibiæ, except their apical half below, and the hind tibiæ, black. Wings hyaline, the apex with a narrow smoky band; the nervures and stigma black. ♂

Length 13 mm.

Cape Colony. George.

Antennæ nearly as long as the body; the scape and pedicel yellow below. Face and clypeus strongly, closely punctured, the latter not separated from the former; the labrum large, broad, nearly as long as the clypeus; its apex transverse. Eyes slightly converging above. Malar space as long as the antennal scape, furrowed in the middle. Mesonotum and scutellum sparsely punctured; the parapsidal furrows deep. Metanotum smooth at the base, the rest with stout, roundly curved striæ. The middle and apex of propleuræ stoutly, closely striated; the mesopleuræ obscurely striated at the apex above; the rest and the metapleuræ obscurely punctured. Abdomen smooth; the first segment slightly longer than the following two segments united; the second is as long as it is wide at the apex; the third broader than long, the others shorter.

The recurrent nervure is interstitial; the transverse median received shortly behind the transverse basal; the disco-cubital is distinctly broken by a stump of a nervure; the transverse median in hind wings is broken shortly above the middle. The hind legs are stout and long; the four front claws are cleft; the hinder long, curved, largely dilated at the base; the hind femora stout, dilated; they are as long as the coxæ and trochanters united.

This may not be a true *Arotes*, which has not, in the typical species, the recurrent nervure interstitial, but is received before it. There is no other genus in which it could be placed, except *Siphimedia*, but that, *inter alia*, has a hidden labrum and a rounded clypeus.

TRYPHONIDÆ.

EXOCHINI.

PLESIOEXOCHUS, Cam.

PLESIOEXOCHUS RUFIPES, Cameron.

Trans. South African Phil. Soc., xv., 1905, p. 203.

Cape Colony. Neighbourhood of Cape Town.

EXOCHUS, Gravenh.

? EXOCHUS FULVOPILOSUS, Cam., *l.c.* 202.

Cape Colony. Stellenbosch.

BASSINI.

BASSUS, Fabr.

BASSUS LÆTATORIUS, Fab.

This now (originally European) cosmopolitan species is in the collection from Cape Town, where it has been taken as early as 1874, and is now probably established. It has been taken in 1884 and 1887, and I have seen an example captured recently. It would be interesting to know on what Dipteron it is parasitic. Probably it has followed one of its European hosts—perhaps *Eristalis tenax*—in its progress round the globe.

TRYPHONINI.

PHILOTYMMA, Först.

PHILOTYMMA ? FLAVICEPS, sp. nov.

Pale yellow, the back of the abdomen rufous; the ocellar region, the part surrounding the scutellum, the centre of the metanotum,

except the sides and apex (the black mark rounded at the apex), a broad band on the centre of the basal three-fourths of the first abdominal segment, the flagellum of the antennæ and the upper part of the antennal scape (its lower part yellow), black; the greater part of the front, of the occiput, three large marks on the mesonotum and two oval marks behind the centre of the oval part of the metanotum, rufous. Legs rufo-fulvous, the coxæ and trochanters yellow, the tarsi infuscated. Wings hyaline, the stigma fuscous, the nervures black. ♂.

Length 7 mm.

Cape. Neighbourhood of Cape Town.

Vertex, front and face closely punctured, the clypeus smooth, its apex broadly rounded. Mandibular teeth black, the upper the larger. Thorax closely punctured, the centre of the metanotum obscurely transversely striated. Transverse median nervure received shortly beyond the transverse basal. Transverse median nervure in hind wings broken below the middle; the apical nervures are faint. The spiracles of first abdominal segment are prominent; the sides below them are keeled. Metasternum distinctly margined. Last joint of hind tarsi longer than the fourth and shorter than the third. Basal three segments of the abdomen closely distinctly, the fourth weakly, punctured, the others smooth. The third joint of antennæ longer than the fourth. Tarsi long; the basal two joints of the anterior are together as long as the tibiæ.

In Ashmead's tables (Bull. U.S. Nat. Mus., xxiii., 74) this species runs into *Philotymma* and *Scopesis*; it differs from the former in the metasternum being margined; from the latter in the spiracles of the first abdominal segment being prominent.

METOPINI.

METOPUS, Panz.

* METOPUS ERYTHROSPILUS, sp. nov.

Black, the inner orbits, malar space, the face, except for a large oval black mark in the centre, labrum, clypeus, mandibles, palpi, a narrow line on the hinder edge of the pronotum, tegulæ, the sides narrowly, the apex of scutellum more broadly, post-scutellum, a small oval mark on the sides of the metanotum at the apex, tubercles, a mark below and touching them, longer than wide and rounded below, the sides and apex of the first abdominal segment narrowly, the apex of the second yellowish, with a rufous band behind extending to the apex, the third similarly coloured but with the black basal

band narrower, and the whole of the other segments except for a narrow black band at the base, rufous. Legs entirely rufous. Antennæ of a duller rufous colour. Wings hyaline, the apical half of the radial and the whole of the apical cubital cellule smoky; the costa and stigma fulvous, the nervures black. ♂

Length 12 mm.

Cape Colony.

Face somewhat strongly punctured, the clypeus and labrum more closely rugosely punctured. Front closely punctured, the lower part closely transversely striated; the part immediately below the ocelli shining, smooth, except for a few keels. Thorax closely rugosely punctured, the punctures running into reticulations in the centre of the mesonotum. Scutellum more strongly rugosely punctured than the mesonotum, the keels bluntly rounded at the apex. Metanotum with two stout keels in the middle, extending from the base to the apex, where they are roundly curved. Mesopleural furrow wide, shallow. All the abdominal segments are longer than wide; the basal strongly, the apical weakly punctured; their apices are transverse. Areolet sessile; the recurrent nervure is received at the base of the apical third.

This species differs from the other Cape forms in the greater expansion of the rufous colour and in the absence of yellow; in the areolet being sessile, and in the recurrent nervure being received beyond the middle.

METOPIUS NIGRO-ORNATUS, sp. nov.

Black, the face, a broad line on the lower half of the upper inner orbits, a longish broad line on the centre of the pronotum, reaching nearer to the apex than to the base, tegulæ, scutellar keels, apical half of scutellum, post-scutellum, an irregularly oval spot on either side of the apex of the metanotum, tubercles, a large mark on the base of the mesopleuræ, commencing near the top and extending below the middle, about twice longer than broad, rounded above, transverse below and of equal width throughout; a band on the apex of the first abdominal segment, largely dilated laterally, and narrower bands, also dilated laterally, on the apices of the others, pale whitish yellow. Four front legs whitish yellow, the femora with a broad rufous line on the base above; the hind legs red, the coxæ black, except for a large mark, oblique, narrow at the base, broadly dilated towards the apex, the basal joint of the trochanters, a large line, dilated at the top, on the under side of the femora, and a smaller one

on the apex, whitish yellow; the upper apical half of the femora blackish. Wings hyaline, the apex slightly infuscated; the costa and stigma fulvous; the nervures blackish. Antennæ rufous, darker above; the scape whitish yellow below; they are as long as the abdomen and half the thorax. ♂.

Length 14 mm.

Face closely punctured, the centre raised; its apex broadly rounded, with a minute projection in the middle. Clypeus black, punctured, its apex raised, transverse. Labrum white, as are also the palpi and the basal half of the mandibles. Front and vertex closely punctured; below the ocelli is a triangular area formed by two stout keels which converge below and are continued as one to the antennæ. The pubescence on the head is dense and white; it is longer on the temples. Thorax strongly and closely punctured; the scutellar keels are large, leaf-like, project largely on the sides at the apex, the projection rounded and narrowed to a blunt point below. On the base of the metanotum are two longitudinal keels, rounded at the apex, forming a square area open at the apex; outside this, at the base, is a shining square area, irregularly wrinkled. There is a broad furrow along the sides of the mesosternum, which is widened and shining at the apex. Abdomen nearly twice the length of the thorax; it is slightly narrower than it; the basal three segments are more strongly and not quite so closely punctured as the others; the third is irregularly punctured-reticulated in the middle. Areolet wide, shortly, but distinctly appendiculated; the recurrent nervure is received in the middle.

Allied apparently closely to *M. albipectus*, Tosq.

Probably from near Cape Town.

METOPUS LATIBALTEATUS, sp. nov.

Black, the face, lower half of the upper inner orbits broadly, the sides and apex of labrum, a spot on the inner side of the malar space, palpi, a line on the pronotum, narrowed at the base and apex, a mark at the sides of the scutellar depression, scutellums, a large mark on the sides of the median segment, the tubercles; almost the basal half of the mesopleuræ; the mark widened and rounded below, the first abdominal segment except the basal slope and the apical half of the others, lemon-yellow. Legs lemon-yellow, the four anterior femora tinged with rufous above; the hind coxæ on the inner side, the greater part of the femora on the inner side, the black continued below and as a large oblique mark in the middle of the outer; the tibiæ and tarsi rufous. Wings hyaline, the apex with

a fuscous violaceous cloud; areolet shortly, but distinctly appendiculated. Antennæ rufous, stout, as long as the head, thorax and basal two segments of the abdomen united. ♂.

Length 17 mm.

Cape Colony. Stellenbosch (December).

Face closely, strongly punctured, the sides broadly depressed; the apex obliquely rounded to a bluntly rounded point. Frontal keel stout, yellow. Front and vertex closely rugosely punctured. Thorax closely, strongly punctured, the sides of the scutellum smooth; the metanotum more strongly, rugosely punctured, and with some striæ; without a defined central, or other area. Scutellar depression deep, clearly defined and bearing five stout keels. Abdomen closely, stoutly punctured, more closely and finely towards the apex; the last segment smooth; the first distinctly longer than it is wide at the apex; the apices of the segments are slightly dilated in the middle and more narrowly at the sides; the penultimate is roundly, widely incised.

METOPHIUS ALBO-ORNATUS, sp. nov.

Black, densely covered with a white pile, the face, lower half of the upper inner orbits, labrum, base of mandibles, palpi, a longish line on the pronotum, tegulæ, tubercles, a large mark, twice longer than wide, of equal width and rounded above, down the base of the mesopleuræ, scutellar keels, scutellums, and an irregular mark on the sides of the apex of the metanotum and the apices of the abdominal segments—the line on the first broader and incised in the middle—whitish yellow. Four front legs whitish yellow, the femora marked with rufous above; the hind coxæ black except for a large, oblique mark dilated at the apex on the outer side, the rest of the legs rufo-fulvous, except for the following whitish-yellow marks: a mark on the apex of the trochanters, a large mark, greatly dilated above, on the base of the femora on the outer side, the apex largely on the outer side, a small mark on the apex of the tibiæ and the calcaria, whitish yellow; the inner half of the femora is largely black. Wings hyaline, the apex with a small smoky cloud in front; the areolet is shortly appendiculated and receives the recurrent nervure shortly behind the middle. ♂.

Length 14 mm.

Natal. Estcourt.

Antennæ rufous, the scape yellow below; they are slightly longer than the abdomen. Face closely punctured, its centre slightly raised, the sides depressed; the apex broadly rounded, the middle

projecting into a minute point. Front and vertex closely rugosely punctured; a triangular area, formed of stout keels, continued as one below, beneath the ocelli. Thorax closely punctured; the scutellar keels large, roundly curved and narrowed towards the apex, projecting. Metanotum with a large square area in the centre of the base; the apex open except at the sides where the keels turn roundly inwardly; on the sides, at the base, is a large, shining, almost impunctate area. Abdomen closely punctured, more strongly and less closely on the basal than on the apical half; the first segment is square, the edges of the second and third project laterally at the apex; the sixth is broadly, squarely incised in the middle.

METOPUS DISCOLOR, Tosq.

This species (described Mém. Soc. Ent. de Belgique, v., 1896, 361) is in the collection from Estcourt.

CRYPTINÆ.

CRYPTINI.

CRYPTUS, Fabr., sec. Ashm.

- 1 (4). Head and thorax black, the abdomen and legs red.
- 2 (3). Orbits and apex of scutellum red; basal keel of metanotum indistinct; the space between the two keels reticulated; the area long, narrow, not widened at the base *spilocephalus.*
- 3 (2). Head and thorax not marked with red; the basal keel of metanotum distinct, the space between the two keels stoutly striated, the striæ clearly separated, the area distinct, widened at the base *simillimus.*
- 4 (5). Black; the head marked with yellow and red; the thorax largely marked with red *rufoplagiatus.*
- 5 (6). Head, thorax, and the greater part of the abdomen red, the latter not marked with white at the apex *nigropectus.*
- 6 (5). Head and thorax red, the abdomen black, marked with white on the apex.
- 7 (8). The apical slope and the upper and lower side of the metapleuræ broadly black, the space between the two keels on metanotum coarsely reticulated *natalensis.*
- 8 (7). The median segment not black.
- 9 (10). Apical slope of scutellum closely striated; the centre of metanotum stoutly longitudinally striated in the middle *æthiopicus, Cam.**
- 10 (9). Apical slope of scutellum finely, closely punctured, the centre of metanotum in the middle closely transversely striated *leighi.*

* Records Alb. Mus. i., p. 234, 1905.

Of *C. labilis*, Cam., I only know the ♂. It cannot well be confounded with any of the above. It has the metanotum strongly rugosely punctured-reticulated, with indistinct transverse keels; the scutellum is keeled laterally to the top of the apical slope; the labrum projects and is white; the abdominal petiole is long, narrow, not perceptibly dilated at the apex—more as in *Osprynchotus* than as in *Cryptus*—and the hind tarsi are annulated with white; the areolet is large, 5-angled; the disco-cubital nervure is broken by a stump of a nervure indistinctly; the transverse basal nervure is interstitial; the transverse median nervure is broken distinctly below the middle. The third antennal joint is not much longer than the fourth. Parapsidal furrows distinct on the basal half of mesonotum only. The species probably will form the type of a new genus allied to *Zonocryptus*, Ashm., and *Bathycrasis*, Cam.

CRYPTUS SPILOCEPHALUS, sp. nov.

Black; the post-petiole and the following segments of the abdomen, the legs, except the coxæ and trochanters, labrum, a line on the inner orbits shortly above the middle, a short one below the antennæ, a broader one on the top extended across behind the ocelli, the tubercles, and the apex of scutellum, red; the coxæ, trochanters, and almost the basal half of the first abdominal segments, black; wings hyaline, highly iridescent, very slightly tinged with fulvous; the stigma, costa, and nervures black; the transverse median nervure interstitial. ♀ and ♂.

Length 13 mm.; terebra 4 mm.

Cape Colony. Worcester Distr.; Hex River (January).

Antennal scape rufous-black below; the sixth to eighth joints marked with white below; the flagellum on apical half brownish. Ocellar region rugosely punctured; the front transversely striated, more closely in the middle above; a short, fine keel runs down from the ocelli. Face closely punctured, opaque; the top of the clypeus is more strongly, but not so closely punctured; the apex is much more shining, and only very sparsely punctured. Mandibles and palpi black, covered with white pubescence. Pronotum smooth in the centre, the sides stoutly striated; the centre is rufous behind, as is also the middle of the propleuræ at the base. Mesonotum closely, strongly punctured; the furrows crenulated, shallow; the scutellum more shining, strongly, but not closely punctured; the apex laterally, closely striated; the sides are stoutly keeled to near the apex. Post-scutellum piceous, marked with striæ.

The metanotum behind the keel is closely, rugosely punctured, more or less reticulated on the sides; the depressed basal slope smooth and shining; the part behind the keel is stoutly, irregularly, obliquely striated, the striæ twisted; the apical slope is closely, transversely rugose. The transverse keels are interrupted in the middle; the basal lateral tooth is minute; the apical prominent, broad; there is no distinct basal area, it being indicated by two longish, indistinct longitudinal keels. Propleuræ closely striated, more strongly in the middle than elsewhere; the meso- and metapleuræ closely rugose, more or less reticulated. Metanotal spiracles about three times longer than wide; the metapleural keel obsolete. Abdomen shining. Areolet 5-angled, the recurrent nervure received in the middle; transverse median nervure interstitial.

The ♂ is similarly coloured, except that the antennæ want the white ring, and the base of the petiole is not black; the face has a rufous mark in the centre; the red mark on the scutellum is more obscure and the two keels on the base of the metanotum are obsolete. The hind tarsi are not ringed with white, neither with the ♀ nor with the ♂.

Allied to *C. capensis*, Cam., and *C. muricatus*, Tosq.

* *CRYPTUS SIMILLIMUS*, sp. nov.

Black; the abdomen and legs red; the sides of the first abdominal segment and the coxæ and trochanters black; wings hyaline, the stigma and nervures black; the wings are iridescent; the transverse median nervure is received shortly behind the transverse basal; the stump on the disco-cubital nervure is distinct, longish; the recurrent nervure is received in the middle. ♀.

Length 14–15 mm.; terebra 5 mm.

Cape Colony.

Antennal scape black; the flagellum absent. Front in the middle closely transversely striated, more strongly above than below; the sides weakly punctured; there is no central keel. Ocellar region finely rugose. Face opaque, closely minutely punctured; the centre clearly separated, raised, depressed below. Clypeus more shining, minutely, distinctly punctured. Palpi black. Pronotal depression smooth in the middle, striated on the sides; the sides are closely rugosely punctured; the pleuræ stoutly closely striated, the striæ twisted in the middle. Meso- and metapleuræ coarsely rugosely punctured-reticulated. Mesonotum irregularly

punctured, the sides of the middle lobe and the furrows strongly closely striated. Scutellum weakly punctured, more strongly on the top of the apical slope; the apex of the latter is smooth. Sides of post-scutellum obliquely striated. Basal region of metanotum closely reticulated; the area distinct, narrowed towards the apex, but with the keels not meeting there; the space between the two keels is stoutly, closely obliquely striated; the apical slope is stoutly striated; the striæ on the middle transverse, on the sides more oblique; the two transverse keels are distinct, stout; the basal is slightly dilated at the sides, the apical bears a broad, bluntly pointed tooth. Metanotal spiracles about four times longer than wide. Tarsi closely spinose. The head, thorax, and coxæ are covered with a white pile.

Apart from the absence of red marks on the head, this species may be known by the stout transverse keels on the metanotum and by the distinct basal area.

CRYPTUS RUFOPLAGIATUS, sp. nov.

Black, a narrow line, broadest below, on the outer orbits, the mesonotum, except the sutures, scutellum, a broad line on the centre of the pronotum, a narrower, longer one on the lower edge of the propleuræ, tubercles, a large, quadrangular mark on the hinder two-thirds of the mesopleuræ above, a triangular mark below the hind wings, blood-red; a narrow line on the inner orbits, an irregular mark, broader than long, in the centre of the face, a large mark on the upper half of the clypeus and the basal half of the mandibles, pale yellow. Four front legs yellow tinged with red; their coxæ and trochanters black, their femora broadly black above; the hind legs obscure rufous; the coxæ above, trochanters, tibiæ behind, the basal joint of the tarsi, the second except at the base and the apical joint, black, the rest white. Wings hyaline, iridescent, tinged with violaceous, the stigma and nervures black. ♂.

Length 9 mm.

Cape Colony. Namaqualand Distr.; O'okiep (September).

Face and clypeus closely punctured. Upper half of front in the middle closely, somewhat strongly transversely striated. Mesonotum weakly punctured, the scutellum smooth. Metanotum opaque, finely rugose, the apical slope finely, irregularly striated; the basal keel is roundly curved backwards in the middle; it, and the apical, are not very distinct; the teeth are indistinct. The red

upper part of the propleuræ is distinctly, regularly punctured, the lower obscurely striated; the upper basal part of the mesopleuræ closely punctured; the raised apical smooth, the lower closely punctured-reticulated, as is also, but more strongly, the metapleuræ. Areolet 5-angled; the recurrent nervure is received shortly beyond the middle; the transverse median shortly beyond the transverse basal; the stump on the disco-cubital nervure is distinct.

* *CRYPTUS NATALENSIS*, sp. nov.

Head and thorax red; the sutures of thorax, the sides of the scutellum, base of mesonotum narrowly, the apical slope from the keel, the lower basal part of mesothorax, the middle of mesosternum, the sternal furrow, the upper edge of metapleuræ and the lower half, black; the abdomen black, the apex of penultimate and the whole of the last above, white. The anterior legs dark rufous, the four posterior black, the middle tibiæ tinged with rufous. The apex of the sixth antennal joint and the sixth to ninth joints white. Wings hyaline, the costa, stigma, and nervures black. ♀.

Length 10–11 mm.; terebra 3 mm.

Natal.

Centre of front transversely striated, with a smooth furrow down the middle; the sides punctured; the vertex strongly punctured between the ocelli, the sides much more obscurely punctured. Clypeus shining, smooth. Apex of mandibles black; the malar space black behind them. Mesonotum closely punctured; the apex of middle lobe closely reticulated; the furrows transversely striated. Scutellum sparsely punctured; its apical slope more closely and with a striated band on the sides. Base of metanotum closely reticulated; the middle behind the keel much more widely and irregularly reticulated; the black apical slope is irregularly longitudinally striated above and on the sides, the striæ being twisted; the centre is closely, rugosely reticulated. There is only one transverse keel—the apical; it is dilated into blunt teeth at the sides. Pleuræ closely punctured; there is a striated border on the apex of the latter; the apex of the metapleuræ is more broadly and somewhat strongly reticulated-striated. Antennal scape red. Areolet 5-angled, receiving the recurrent nervure shortly beyond the middle; the transverse median nervure received shortly behind the transverse basal.

CRYPTUS LEIGHI, sp. nov.

Dark red, the abdomen black, the sides of the basal segments obscure red, the apices of the last three narrowly testaceous; antennæ black, the scape red; the sixth to eighth white below; wings hyaline, the nervures and stigma black. ♀.

Length 10–11 mm.; terebra 3 mm.

Natal. Durban.

Metanotum with two transverse keels; the basal is continuous, if not very distinct; the middle at the base is curved backwards, the prolongations straight, oblique, united to the sides of the areola, which is longer than it is wide at the base; the carinæ do not unite at the apex; the second keel is weak in the middle and ends laterally in blunt, short teeth; the base of the segment is rugosely punctured; between the keels it is somewhat stoutly transversely reticulated-striated; the apical slope is obliquely striated round the edges above; the rest transversely, closely reticulated-striated; the spiracles are linear, about four times longer than wide. Pro- and mesothorax closely punctured; the lower half of the former strongly irregularly striated; the punctures on the latter, at the apex, run into striæ. Sides of post-petiole depressed, rufous; the four front legs are red, like the thorax, but darker; the hinder black, except the sides and upper part of the coxæ; the spines on the tibiæ and tarsi are weak, sparse. Transverse median nervure interstitial; the stump on the disco-cubital distinct; the recurrent is received in the middle of the areolet. Front in the middle closely striated; the sides finely closely punctured; there is a narrow smooth furrow running down from the ocelli. Palpi black, lighter coloured (fuscous) at the apex. Mandibles dark rufous, the teeth black. The metasternum is black.

C. rufolimbatus, Tosq., is a closely allied form; it should be known by the punctured, not striated front; closely allied, too, is *C. æthiopicus*, Cam., it may be known by the apex of the scutellum being striated, not closely, finely punctured, by the space between the metanotal keels being strongly striated, especially at the apex, by the striæ on the apical slope being stronger and more transverse; the basal keel being also stronger.

ONEILELLA, Cam.

ONEILELLA FORMOSA, Bé.

Cryptus formosus, Brullé, Hym. iv. 187, pl. 41, f. 3; Tosquinet, Mém. Soc. Ent. Belg. v. 150.

Oncilella formosa, Cam., Zeit. f. Hym. u. Dipt., 1904, 190.

A single ♂ from Durban, Natal.

The species has been reared from *Anaphe reticulata*. Cf. Cameron, *l.c.*

OSPRYNCHOTUS, Spin.

OSPRYNCHOTUS CAPENSIS, Spin.

Spinola, Guér. Mag. de Zool., 1841, 75; Brullé, Hymén. iv., 133; Tosquinet, Mém. Soc. Ent. Belg. v. 244.

Natal. Umvoti.

OSPRYNCHOTUS RUFICEPS, sp. nov.

Black, the thirteenth and fourteenth antennal joints entirely and the fifteenth and sixteenth below whitish yellow, the under side of the antennal scape, the head and the greater part of the prothorax, red; wings fuscous violaceous, the nervures and stigma black; the hinder tibiæ and tarsi yellow, the extreme base of the tibiæ, a band on the apex as long as the black hinder calcaria; a band on the base of the tarsi shorter than them, and the last joint of the tarsi with the claws, black. ♀.

Length 21 mm.; terebra 10 mm.

Cape Colony. Port St. Johns.

Face and clypeus finely closely punctured; the clypeus distinctly separated from the face; the lower part of the clypeus finely closely striated. Lower part of front black and smooth, the upper irregularly striated; the ocellar region black. Thorax thickly covered with short black hair; the mesonotum closely, the scutellum much more sparsely punctured and shining. Metanotum closely rugosely punctured at the base behind the keel, the middle closely reticulated; the apex stoutly transversely reticulated. Propleuræ smooth; the meso- and metapleuræ closely strongly longitudinally reticulated. The recurrent nervure is received at the apex of the basal third of the areolet. The hind coxæ are longer compared with their width than they are with *O. capensis*; they are densely covered with black hair. In the sculpture of the thorax it approaches more to *O. heros*, Schlett., from the Congo. The hinder metatarsus is as long as the following three joints united; the last is as long as the preceding two united; in its middle are two stout, longish spines.

Comes nearest, of the three known species, to *O. flavipes*, Bé.; that may be known, *inter alia*, by the much longer ovipositor. The second abdominal segment is three times longer than its width at the apex; the basal third is distinctly narrowed; it is as long as the following two segments united; the third is twice the length of the

fourth, which is not much longer than the fifth. Mandibles red, black at the apex. Palpi dark fuscous. The third antennal joint is fully one-fourth longer than the fourth; the apical joint is rufous and is not much shorter than the preceding two united.

MESOSTENINI.

STENAULAX, gen. nov.

Wings fuscous violaceous; the areola small, square, receiving the recurrent nervure near the middle. Disco-cubital nervure not broken. Transverse median nervure received behind the transverse basal. Radial cellule of moderate length. Transverse median nervure in hind wings broken shortly below the middle. Median segment short, rugosely punctured, without any transverse keels; the spiracles long. Antennæ slender, not thickened towards the apex, not ringed with white. Anterior part of clypeus depressed, flat, smooth, and shining, the upper part raised, not clearly separated from the face by a furrow. Temples moderately long, roundly dilated, not narrowed. Front widely, deeply depressed. Abdominal petiole long, the post-petiole largely dilated; the segments are smooth, impunctate. Legs stout, longish; the tibiæ sparsely, the tarsi thickly spinose; the fore tibiæ not contracted at the base; their tarsi long and slender. Mandibles short, broad, stoutly bidentate at the apex; the upper tooth is the longer. The furrow on the mesosternum is short.

The body is entirely black. It is stouter, broader than usual with the *Cryptinæ*. It has more the appearance of a Pimplid or of one of the *Xoridini* than of the *Cryptinæ*. Its areolet more resembles that of the *Mesostenini* than of the *Cryptini* and, in the ♀, which I have regarded as the type of the genus, the apical nervure is bullated. In the ♂ I have described, the transverse median nervure is interstitial; the face in the middle is more distinctly raised and separated, this being also the case with the clypeus. It has also the head and thorax densely covered with black hair. The spiracles are placed as in the genuine *Cryptinæ*, not as in the *Pimplinæ*; and I have no doubt that the genus is a true member of the former group.

STENAULAX PILOSULUS, sp. nov.

Black; the head and thorax densely covered with black pubescence; the wings uniformly fuscous violaceous, the nervures and stigma black. ♂.

Length 15 mm.

Cape Colony. Namaqualand Distr.; Springbok (September). O'okiep (August).

Face and upper part of clypeus closely, strongly punctured; the vertex and sides of front less closely and strongly punctured; the depressed centre of front strongly transversely striated above, the middle with a wide furrow, keeled in the centre; the lower part smooth and shining. Temples wide, obliquely narrowed. Face distinctly raised in the centre, the raised part bordered by a depression. Thorax closely, regularly, distinctly punctured, densely covered with short black hair; the apical slope of the metanotum closely, strongly reticulated; the metapleuræ somewhat coarsely reticulated; the hair on the segment is denser and longer than it is on the rest of the thorax. Basal three segments of the abdomen closely and strongly, uniformly punctured; the spiracles at the base of the clearly separated and dilated post-petiole are prominent. The areolet is small; it is not square; the recurrent nervure is received close to the apex; the transverse median nervure is interstitial; in the hind wings it is broken shortly below the middle.

STENAULEX RUFIPES, sp. nov.

Black, the legs, except the coxæ and trochanters red; the wings fuscous violaceous, the nervures and stigma black. Face and upper part of clypeus closely strongly punctured, the lower part of clypeus smooth and shining; the middle of the greatly depressed front is stoutly, closely transversely striated, the middle with a stout longitudinal keel; the vertex is irregularly, weakly punctured. Mesonotum and scutellum smooth. Base of metanotum weakly punctured, the rest strongly, closely reticulated. Upper basal half of propleuræ weakly, sparsely punctured; the rest stoutly, closely reticulated. Mesopleuræ closely, but not strongly punctured; the metapleuræ strongly punctured at the base above, the rest strongly coarsely, irregularly reticulated; the upper part coarsely, obliquely, widely reticulated-punctured. Mesosternal furrow wide, crenulated. Metasternal keel large, curved. Abdomen smooth, impunctate; it is not much longer than the head and thorax united. All the tibiæ and tarsi are thickly covered with short spines. The middle lobe of the mesonotum is narrowed to a sharp point. ♀.

Length 16 mm.; ovipositor 9 mm.

Natal. Durban.

The following ♂ agrees generically with the above described ♀, except that the transverse median nervure is interstitial.

* STENAULAX NIGER, sp. nov.

Black; the anterior tibiæ and tarsi fuscous; wings fuscous-violaceous, the nervures and stigma black; the areolet small, square, receiving the recurrent nervure near the apex, the transverse median nervure received behind the transverse basal. ♂.

Length 17 mm.

Cape Colony or Transvaal.

Face closely and strongly punctured; the upper half of clypeus more sparsely punctured, the apical smooth. Front deeply excavated; there is a short broad keel below the ocelli; the middle irregularly transversely striated; the ocellar region strongly and closely, the rest less closely punctured. Head not quite so wide as the thorax; the temples wide, rounded. Thorax closely punctured; the apex of the scutellum smooth; the metanotum irregularly rugosely punctured, almost reticulated; the spiracles large, about two and a half times longer than wide; the segment is closely covered with short, fuscous pile. The petiole becomes slightly, gradually narrowed to the spiracles; post-petiole distinct.

S. pilosulus may be known by the densely pilose head and thorax, by the interstitial transverse median nervure, and by the temples not being obliquely narrowed. The antennæ, too, are longer and more slenderly built.

MESOSTENUS, Gravenh., sec. Ashm.

The small species of this genus with dark rufous head and thorax may be separated by means of the following table:—

- | | | | |
|--------|---|---------|---------------------|
| 1 (2). | Abdomen and legs black | .. .. . | <i>rhodesiæ.</i> |
| 2 (1). | Abdomen and legs rufous, or dark rufous. | | |
| 3 (4). | Mesonotum stoutly transversely striated | .. .. . | <i>mimeticus.</i> |
| 4 (3). | Mesonotum punctured. | | |
| 5 (8). | Median segment closely reticulated, not more strongly between the keels than on the apical slope. | | |
| 6 (7). | Breasts, lower part of metapleuræ and hind coxæ black; palpi testaceous; length 10 mm. | .. .. . | <i>oneili, Cam.</i> |
| (6). | Thorax and hind coxæ without black, palpi fuscous; length 7-8 mm. | .. .. . | <i>elizabethæ.</i> |
| 8 (5). | Median segment strongly, widely reticulated, more strongly between the keels than elsewhere; palpi white. | .. .. . | <i>albipalpis.</i> |

MESOSTENUS RHODESIÆ, sp. nov.

Head and thorax red, the former darker coloured, with the oral region and apex of mandibles black; abdomen black, the apical two

segments lined with white above; legs black, the anterior suffused with testaceous; maxillary palpi black, the apical joints fuscous; the labial white. Antennæ black, the eighth to eleventh joints white. Wings hyaline, the stigma and nervures black. ♀.

Length 10 mm.; terebra 2 mm.

Rhodesia. Sebakwe.

Face closely punctured-reticulated; the clypeus smooth and shining; the upper part of front closely striated, oblique, almost reticulated; the depressed lower part smooth; the vertex closely punctured. Mesonotum closely punctured, the furrows deep. Scutellum on basal slope transversely striated, on apical more shining; punctured, but not closely or strongly. Median segment closely reticulated-punctured; there is only the basal keel. The middle of post-petiole is bounded by a keel; the base of the second segment is closely reticulated-punctured.

MESOSTENUS ALBIPALPIS, sp. nov.

Dark red, the apex of the fifth broadly and the greater part of the following abdominal segments clear white. Palpi clear white. The fore coxæ, femora and tibiæ and the middle femora and tibiæ white in front. The antennæ are rufo-testaceous, darker above. Wings hyaline, the stigma and nervures black. ♂.

Length 8 mm.

Cape Colony. Port Elizabeth.

The third joint of the antennæ is distinctly longer than the fourth. Face and clypeus closely, strongly punctured, the punctures on the apex of the clypeus sparser. Mandibles red; white at the base above, black below. Vertex closely, obliquely striated; below the ocelli are a few fine longitudinal striæ. Mesonotum closely punctured, more or less transversely striated. Scutellum shining, sparsely, distinctly punctured. Base of metanotum finely, irregularly, obliquely striated. Both the transverse keels are stout, complete; the space between them is stoutly striated, the striæ widely separated; in the middle they are twisted and curved; the apical slope is reticulated regularly all over; the reticulations are wide. Propleuræ obliquely striated above; below more strongly longitudinally striated; the meso- and base of metapleuræ are more closely longitudinally, the upper part of the latter more strongly obliquely, striated. Petiole smooth, the post-petiole punctured on the sides, the middle striated—finely striated at the base, more strongly longitudinally at the apex; the second to fourth segments are closely punctured.

MESOSTENUS ELIZABETHÆ, sp. nov.

Dark red; the apex of the fifth and the greater part of the three following abdominal segments clear white; the antennal scape dark red, the flagellum black; joints 8-11 are white. Legs black, tinged (especially the anterior) with red. Wings clear hyaline, the nervures and stigma black. ♀.

Length 7 mm.; terebra 2 mm.

Cape Colony. Port Elizabeth.

Face closely rugosely punctured; the upper part of the clypeus sparsely punctured, the lower smooth, slightly tinged with yellow. Mandibles rufous, black at the base and apex. Palpi fuscous. Vertex and upper part of front closely rugose; the latter with a keel in the middle; the part on either side of it is closely reticulated. Mesonotum closely rugosely punctured, the middle lobe is irregularly reticulated. Scutellum roundly convex, shining, punctured, but neither closely nor strongly. Metanotum at the base closely punctured; the rest closely irregularly reticulated; the second transverse keel is indistinct in the middle, dilated at the sides. Pro- and mesopleuræ closely punctured, more or less striated in the middle; the metapleuræ more strongly obliquely striated; more strongly on the upper than on the lower half, which is more or less reticulated at the base. Central part of petiole clearly defined by keels; the post-petiole clearly separated, wide, closely, irregularly striated; the sides strongly, but not closely punctured. The second and third and, to a less extent, the fourth segment are closely punctured.

MESOSTENUS LIGHTFOOTI, sp. nov.

Black, the thorax red, the clypeus, apices of the basal two abdominal segments narrowly, the apices of the fifth more broadly and the whole of the others yellow; the four front legs fulvous, the hinder black. Wings hyaline, the stigma dark fuscous, the costa and nervures black; the areolet minute, square. Antennæ broadly ringed with white. ♀.

Length 9-10 mm.; terebra 16 mm.

Cape Colony. King William's Town District; St. Mathew's.

Head distinctly wider than the thorax; the temples roundly obliquely narrowed; smooth and shining, the face opaque, pilose; front with a narrow keel down the middle. Pro- and mesonotum smooth and shining; the former with a transverse striated furrow near the apex. Scutellum shining, impunctate. Metanotum behind

the keel punctured; the punctures long, clearly separated; the middle closely, transversely striated; the apex almost smooth, bounded above by a semicircular keel. Upper half of propleuræ smooth, the base narrowly and the lower half closely, finely striated. Mesopleuræ finely, closely reticulated, more or less striated at the base. Metapleuræ more strongly but quite as closely reticulated as the mesopleuræ. Abdomen shining, dilated and compressed laterally towards the apex.

The parapsidal furrows are deep; the thorax is three times longer than wide; the metanotum has a gradually rounded slope and is without teeth.

MESOSTENUS LEVIFRONS, sp. nov.

Length 17 mm.; terebra 25 mm.

This species closely resembles *M. lissonotus*, from which it may be separated as follows:—

Clypeus and palpi white; the former not bordered laterally by a deep furrow; base of mandibles marked with white; breast and upper side of pleuræ black *levifrons*.

Clypeus and palpi black; the former bordered laterally by a furrow; base of mandibles black; breast and pleuræ red *lissonotus*.

Black; the clypeus, labrum, palpi, the apices of the first and second abdominal segments, of the third, fourth, and fifth more narrowly, in the centre; the apical half of the sixth and the whole of the seventh, white. Four front legs testaceous, their coxæ black; the under side of the femora black; the basal joint of the trochanters white. Wings hyaline, the nervures and stigma black, the small areolet square, receiving the recurrent nervure near the middle, the transverse median nervure behind the basal. ♀.

Length 17 mm.; terebra 27 mm.

Natal. Durban.

Front and vertex smooth, except for a few punctures on the sides; face closely rugosely punctured, except for a large semicircular space on the sides, the narrowed rounded part on the inner side. Clypeus and labrum smooth, shining. Mesonotum shining, impunctate, the furrows crenulated. Scutellum strongly, sparsely punctured. On the centre of the basal region of the metanotum are two strongly, but not closely, punctured areæ; the rest is closely, transversely striated; the base more closely and irregularly than the apex. Propleuræ smooth, except for a striated, curved band in the centre. Mesopleuræ closely strongly punctured, more or less reticulated; on the upper apical half are two large, longish

smooth spaces. Metapleuræ more strongly and closely punctured and more distinctly striated. The whole median segment is thickly covered with white pubescence. First abdominal segment smooth; the sides of the post-petiole sparsely punctured; the second and third segments are closely, finely punctured; the others smooth and shining.

MESOSTENUS LISSONOTUS, sp. nov.

Black, the thorax, except the prosternum, red; the eighth to thirteenth joints of the antennæ white, the apical joints fuscous; the labrum, a narrow line on the apex of the first and second abdominal segments, the apex of the fifth more broadly and the whole of the following white, the four front legs dark red, the greater part of their coxæ and trochanters black. Palpi blackish. Wings hyaline, the nervures and stigma black; areolet minute, almost square; the recurrent nervure received at the apex; the transverse median nervure received behind the transverse basal. ♀.

Length 14 mm.; terebra 25 mm.

Cape Colony. George. East London.

Front and vertex smooth; a stout furrow, obscurely striated on either side on the former. Face in the centre above irregularly striated. Clypeus broad, smooth, shining, bordered laterally by a deep furrow, curving upwards on to the face, which, in the centre, is not separated from the clypeus. Mesonotum shining, impunctate; the furrows crenulated. Sides of scutellum strongly punctured. Base of metanotum strongly punctured, more or less striated at the base; the rest closely, strongly striated; the apex more strongly and less closely than the base. Propleuræ smooth; the centre with a striated band; the lower part black. Mesopleuræ strongly, closely punctured, the upper part at the base striated, the apical smooth. Metapleuræ strongly, closely punctured, in the middle more or less striated. Basal segments of abdomen closely punctured; the apical and the first segment smooth and shining. The apex of the third segment may be narrowly white; the hind femora and tibiæ may be rufo-testaceous; the hind coxæ are strongly and closely punctured.

MESOSTENUS PARVIDENS, sp. nov.

Black, the thorax, except the prosternum, black; the sides and apex of the post-petiole, a narrow line on the apex of the second abdominal segment, white, largely tinged with red; the greater part of the penultimate and the whole of the last segment, white. The sixth to eleventh antennal joints white, except above. Legs black;

the fore femora in front, their tibiæ almost entirely; the middle femora fuscous with a whitish line in the middle in front, and the base and the anterior part of the middle tibiæ, white, tinged with fuscous, the hind femora tinged with fuscous. Wings clear hyaline, a small smoky, triangular cloud below the stigma and a larger one at the apex; the nervures and stigma black. Palpi dark fuscous. ♀.

Length 12 mm.; terebra 4 mm.

Natal. Durban.

Face closely, finely reticulated; the upper half of the clypeus distinctly punctured; the lower half of the clypeus rufous-testaceous, obscurely striated above, ending in two short blunt teeth. Basal half of mandibles closely, strongly punctured, the apical smooth, with a rufous band behind the teeth, which are equal in size. Vertex and upper part of front opaque, coarsely aciculated, mixed with striæ; there is a furrow down the upper part of the front. Pro- and mesothorax closely, somewhat strongly punctured, the punctures running into reticulations. Scutellum shining, strongly punctured, the punctures clearly separated. Metanotum closely, distinctly, regularly reticulated, the metapleuræ closely rugosely punctured; its second keel is weak in the middle, the outer edge dilated. The sides of the post-petiole are distinctly punctured, and there is a broad, irregular band near the apex; the second to fifth segments are closely punctured, the punctures becoming weaker towards the apex.

The antennæ are longer than the body; the basal joints of the flagellum are greatly elongated; the first joint is hardly longer than the second. Temples short, greatly narrowed. Transverse median nervure received shortly behind the transverse basal.

Comes close to *M. obesus*, Tosq.

CRYPTAULAX, gen. nov.

Thorax short, not much more than twice longer than wide; the parapsidal furrows entirely obsolete. Median segment short, without keels, closely, strongly reticulated; the spiracles long. Abdominal petiole long and slender, the post-petiole not clearly separated. Clypeus separated from the face, the apex broadly rounded, the apex in the middle minutely tuberculate. Areolet square, small, closed at the apex, the recurrent nervure received near the apex; the transverse median nervure received shortly beyond the transverse basal; disco-cubital nervure unbroken; the transverse median nervure in hind wings broken distinctly below the middle. The wings are

hyaline, spotted. Antennæ ringed with white, not greatly dilated at the apex. The ♂ offers no essential differences.

This genus should be known by the total absence of the parapsidal furrows. The abdominal petiole is long and slender and is not much dilated at the apex; it is as long as the following two segments united. The radial cellule is long and narrow, reaching to the apex of the wings. On the centre of the apex of the clypeus, in the ♂, is a small tubercle. There is no metapleural keel along the lower edge; but there is an oblique plate-like one bordering the apex of the middle coxæ. The hind legs are greatly lengthened. The ovipositor in the known species is short. Temples wide, oblique. The sides of the median segment at the apex are broadly rounded. There is a triangular fovea on either side of the base of the post-scutellum. The last joint of the hind tarsi as long as the third. There are no transverse keels on the metanotum. In the most recent arrangement of the *Mesostenini*, namely that of Dr. Schmiedeknecht, Opus. Ichneum., 560, this genus would come nearest to *Crypturopsis*, as it does also, through the shortness of the thorax, in that of Ashmead, Bull. U.S. Nat. Mus., xxiii., 44. *Crypturopsis* is an American genus.

CRYPTAULAX RUFICEPS, sp. nov.

Black; the head red, the apex of the fifth, the sixth to ninth, and the base of the tenth antennal joint, clear white; the antennal scape red. Wings hyaline, iridescent, there is a large cloud extending from the commencement of the transverse basal nervure to the commencement of the radius, where it is roundly narrowed; there is a cloud of similar size at the apex, commencing at the base of the apical third of the radius; both are distinctly violaceous in tint. ♀ and ♂.

Length 14 mm.; terebra 3 mm.

Natal. Malvern.

Face closely, but not strongly punctured; the top of the clypeus punctured; the centre flat, furrowed below, the furrow leading into the projecting apical tooth. Front and vertex smooth; the former keeled down the centre; the part above the hollow and below the ocelli is obliquely striated. Inner orbits distinctly margined above. Mesonotum closely, somewhat strongly punctured—reticulated, towards the apex in the centre striated. The scutellum shining, somewhat strongly, but not closely punctured. Median segment closely, strongly reticulated. Pro- and mesopleuræ closely, strongly longitudinally striated; the latter more closely below than above.

Abdomen smooth, shining; the apex of the apical segment is narrowly white.

The apex of the fore femora and the tibiæ are testaceous in front.

The ♂ has the wings fuscous violaceous except for a hyaline cloud extending from the commencement of the radius to the base of its apical third; the antennæ want the white ring; the sides of the face have the red colour tinged with yellow, the red on the base of the mandibles being also tinged with yellow; in it also the apex of the petiole has a violaceous tinge and the abdomen is more densely pilose; the second segment is narrow at the base; it becomes gradually wider towards the apex. The apex of the clypeus is more transverse than it is in the ♀. The palpi in both sexes are black; the mandibles broadly rufous at the base.

The ♂ I have described may belong to another species, as, *e.g.*, the fore wings are not hyaline at the base and the hinder pair are entirely smoky. The material at my command does not warrant me in describing the ♂ as a distinct species. *Cryptus pictipennis*, Tosq., from Caffraria (only the ♂ is known), is clearly another species of *Cryptaulax*. No mention is made of a tubercle or small tooth or projection on the apex of the clypeus, which is described as having the "margine anteriore rotundata"; and the posterior lobes of the "prothorax" are said to be transversely striated; and the pleuræ "are more finely punctured" than the mesonotum; in the ♂ I have described they are not punctured, but coarsely reticulated, although not quite so strongly as in the ♀. The transverse median nervure, however, is said to be interstitial; but the mesonotum is said to be "sans aucune division," and the transverse median nervure is broken above the middle. As the areolet is described as "small" it can hardly be a true *Cryptus*. It is further to be noted that the abdomen is said to be "smooth," which is certainly not the case with either the ♂ or ♀ I have described.

CRYPTAULAX ERYTHROSTOMUS, sp. nov.

Black, the clypeus and mandibles, except at the apex, red; wings hyaline; a cloud commencing on the inner side of the transverse basal and transverse median nervures, extending to the base of the stigma and the middle of the disco-cubital nervure, the cloud being therefore much narrowed in front, and the apex from shortly behind the base of the apical third of the radius, fuscous violaceous; the hind wings are entirely hyaline; the nervures and stigma black. ♂.

Length 12-13 mm.

Cape Colony. Mossel Bay.

Front and vertex smooth, except for some curved striæ bordering the upper part of the frontal depression. Face closely punctured, broadly dilated in the middle; the clypeus is more sparsely punctured. Palpi blackish fuscous. Mesonotum closely, somewhat strongly punctured and thickly covered with fuscous hair; the scutellum is more shining, less closely punctured and less closely haired. Metanotum closely, strongly reticulated-punctured; the pleuræ strongly, obliquely striated reticulated. The upper part of the propleuræ is punctured, the middle smooth, the lower strongly striated. The upper basal half of the mesopleuræ is irregularly striated, the apical smooth, the lower part is strongly punctured, more or less striated. Abdominal petiole long and slender, fully longer than the following two segments united; the post-petiole is hardly dilated; the spiracles are prominent; the second segment has the basal third narrowed. Legs thickly haired; they are entirely black; the hind coxæ are about three times longer than wide. There is a curved dark testaceous mark on the apex of the last segment.

SKEATIA, Cam.

* SKEATIA ANNULIPES, sp. nov.

Black, the centre of clypeus, face, inner eye orbits, the lower half of the outer more broadly, a longish broad line in the centre of pronotum, tegulæ, scutellar keels, scutellum except the basal slope, post-scutellum, a line round the edges of the apical slope of the metanotum, including the spines, the line triangularly dilated above, a short line on the lower basal edge of the propleuræ, tubercles, a mark on the lower basal part of the mesopleuræ, longer than wide, transverse below, obliquely narrowed to a point above, a smaller, irregular mark on the apex opposite it, a conical mark below the hind wings, a large, oblique mark longer than wide, on the centre of the metapleuræ, and lines on the apices of the abdominal segments—those on the fourth to sixth interrupted in the middle, pale yellow. Four front legs yellow, the femora reddish, the tibiæ and tarsi blackish below; the hind coxæ, trochanters, and femora red; the apex of femora, tibiæ, and tarsi black; the base of the tibiæ with a narrow white band, the basal joint of the tarsi and the second joint, except at the apex, white. Wings hyaline, the nervures and stigma black. ♀.

Length 16 mm.; terebra 6 mm.

Cape Colony.

The sixth to twelfth joints of the antennæ white, the apex moderately dilated. Front stoutly keeled in the centre, the upper part

transversely striated. Mesonotum closely, rugosely punctured. Scutellums smooth. Metanotum closely reticulated; the base on either side smooth; the areola not clearly defined, open behind; the reticulations on the apical slope stronger than elsewhere; the spines are long, stout—about three times longer than wide. Areolet narrow, about twice longer than wide.

LARPELITES, Cam.

LARPELITES RUFICOLLIS, Cam.

Records Alb. Mus., i., 145.

This species is in the collection from Estcourt, Natal (E. Haviland). *Cryptus celer*, Tosq., from Senegal (Mem. Soc. Ent. Belg., v., 161), is clearly another species of the genus. It is to be noted of *L. ruficollis* that the propleural keel curls round inwardly at the top.

STENOMERIS, gen. nov.

Wings uniformly fuscous violaceous; the areolet small, square; disco-cubital nervure not broken; transverse median nervure interstitial; the transverse median nervure in hind wings broken shortly below the middle. Median segment closely, rugosely punctured, without keels; the spiracles long. Abdominal petiole slender, long, not distinctly dilated at the apex; the post-petiole not separated. Temples wide, roundly, obliquely narrowed. Clypeus roundly convex, clearly separated by a deep depression from the face; its apex dilated in the middle, separated from the side, but not projecting downwards. Labrum hidden. Mandibles with two large teeth. Parapsidal furrows indistinct, narrow, shallow. Scutellum not raised above the level of the mesonotum; its basal depression large, deep.

It is doubtful if this genus should be placed in the *Cryptini* or *Mesostenini*; the form of the areolet does not give always a trustworthy distinction between the two. In the present species the areolet, although small, is closed at the apex; the general appearance of the insect, too, is more like the *Cryptini*.

The type of the genus is *Cryptus xanthopus*, Bé., Hymén., iv., 194; Tosquinet, Mém. Soc. Ent. Belg., v., 130, which is in the collection from Stellenbosch, December.

HEMITELINI.

XENOLYTUS, Först.

XENOLYTUS RUFIPES, sp. nov.

Black, the legs and abdomen from the base of the second segment red; the antennal scape testaceous below, the flagellum fuscous;

wings hyaline, the nervures and stigma black; the tegulæ whitish testaceous. ♀.

Length 5 mm.; terebra 1 mm.

Cape Colony. Stellenbosch.

Face closely punctured; the clypeus smooth and shining. Mandibles and palpi rufous. Front and vertex smooth, the former thickly covered with white pubescence. Antennæ 19-jointed, stout, the third joint slightly longer than the fourth. Thorax smooth and shining; the metanotum largely, obliquely depressed at the base; the areola large, the base not clearly closed; the middle widened, 4-angled, the apex transverse; the base slightly, obliquely narrowed; the apical slope depressed in the centre, the sides obliquely sloped; the sides, at the top of the apical slope, toothed. Abdomen smooth and shining. Transverse median nervure in hind wings received distinctly beyond the transverse basal. Stigma large.

The petiolar area large, almost square; the median segment regularly areolated; the lateral apical area is somewhat strongly transversely striated.

LIENELLA, Cam.

This genus of *Hemitelini* was described by me in the Transactions of the South African Phil. Soc., xv., 196, 1905. In the collection of the Cape Museum are some specimens which throw some light on the genus, but not enough to properly elucidate the generic distinctions. There seems to be two groups: one, represented by *L. nigriceps*, with a long, narrow abdominal petiole and sharply defined metanotal keels and areæ, of which I have only males, and, unfortunately, all of them have the apical joints of the antennæ broken off. Of this group I have to describe another new species, which differs considerably in the structure of the areæ on the median segment.

LIENELLA CANALICULATA, sp. nov.

Black; the pronotum, mesonotum with scutellum, and pro- and mesopleuræ, red; the sides of the second and third abdominal segments, the apex of the second broadly and of the third narrowly, testaceous; legs black; the anterior tibiæ and tarsi obscure testaceous; the hind tibiæ with a white band at the base, the white colour obscured with testaceous. Wings fuscous-violaceous, a clear hyaline cloud on the basal fourth of the anterior and on the basal half of the posterior, a squarish cloud at the stigma and a more

obscure hyaline cloud on the apex. Face and clypeus opaque, coarsely alutaceous, covered with short white pubescence; the front and vertex more coarsely alutaceous, obscurely transversely striated. Middle of mandibles with a red band. Abdominal petiole long and narrow, as long as the second and half of the third segment united; the spiracles prominent, smooth, the apex of post-petiole aciculated-striated, bordered by fine keels; the second and third segments closely longitudinally striated-aciculated. Median segment deeply depressed at the base; there are three rows of areæ of five each; the areola large, wider than long, its base bluntly rounded, the apex transverse. ♂.

Length 5 mm.

Cape Colony. Port St. Johns.

This species differs essentially from *L. nigriceps*, Cam., the type of the genus, in the form of the areola; but this may not, in this group of the *Hemitelini* (readily distinguished by the absence of an areolet in the fore wings), be of generic importance. The two species are readily separated.

Areola clearly longer than broad, extending to the posterior median area; wings hyaline, a narrow cloud at the stigma, antennal scape testaceous	<i>nigriceps</i> .
Areola wider than long, separated from the posterior median area by one longer than wide; wings smoky, the basal third hyaline	<i>canaliculata</i> .

As regards the other group, I give a generic description of it, based on females, the only sex known to me. Of the other section I only know males.

Antennæ 28-jointed. Metanotum with a distinct petiolar area, an areola longer than wide, obliquely narrowed at the base, transverse at the apex; and a large posterior median area, the keels of which curve round the sides; the lateral areæ are indistinctly defined; the base of the segment is obliquely depressed in the middle. Abdominal petiole long, longer than the second segment; it and the other segments are closely strongly striated; the second segment has a wide, curved transverse furrow near the middle; there are eight segments; the second and third are contracted laterally at the apex; the ovipositor is as long as the apical four segments united. Parapsidal and sternal furrows distinct. Clypeus not separated from the face. Mandibles bidentate, the teeth almost equal in length. Wings without an areolet; the recurrent nervure is received beyond the transverse cubital; transverse basal nervure interstitial. Radial cellule wide at the transverse cubital nervure;

it is short compared with its width; the basal abscissæ straight, oblique. The apical nervures in the hind wings are faint; the transverse median nervure is broken shortly below the middle.

As with most *Hemitelini*, the wings are spotted; the first and second joints of the flagellum are equal in length; the ocelli are widely separated from the eyes; the hinder from each other by about the same distance as they are from the eyes. The temples are half the length of the top of the eyes; the occiput is roundly incised.

The other three species known to me may be separated by the following table:—

- | | |
|---|------------------------|
| a. Basal segment of the abdomen red; areola broad at the base:— | |
| The stigmal cloud in fore wings of equal width throughout, extending uninterruptedly to the discoidal nervure, base of costa black, middle lobe of mesonotum furrowed down the middle | <i>quadriannulata.</i> |
| The stigmal cloud not of equal width, not extending uninterruptedly to the discoidal nervure; base of costa broadly white, middle lobe of mesonotum not furrowed down the middle | <i>rujicornis.</i> |
| b. Basal segment of abdomen black, areola narrowed to a point at the base | |
| | <i>latifasciata.</i> |

LIENELLA QUADRIANNULATA, sp. nov.

Head and abdomen black; the thorax and basal segment of the abdomen red; the apical four segments of the abdomen lined with white at the apex; the four front legs fuscous-testaceous, the hinder black, the coxæ broadly black at the base above, the base of the tibiæ with a white ring. Wings hyaline; the stigma and nervures are black, the former narrowly white at the base; a broad fuscous violaceous cloud extends from near the base of the stigma to its apex, then to the discoidal nervure, it extending slightly beyond the transverse cubital nervure and the recurrent; there is a small cloud on either side of the transverse median nervure and a wider cloud beyond it. ♀.

Length 7 mm.

Natal.

Antennæ 28-jointed, the middle joints fuscous. Head densely covered with white pubescence, finely rugosely punctured, the front furrowed down the middle; the antennal tubercles, apex of clypeus and mandibles, except the teeth, red; the palpi testaceous, covered with white pubescence. Face raised in the middle, the raised part

narrowed above. Thorax closely, rugosely punctured, thickly covered with white pubescence. Petiolar area large, narrowed towards the apex, where it is one-third of the width of the base; the areola large, longer than wide, obliquely narrowed towards the base, which is not quite half the width of the apex; the keel on the latter is indistinct. The hair on the apical slope of the median segment is longer than it is on the rest of the thorax. Petiole longer than the second segment; the post-petiole closely striated; the middle of the second segment is tinged with rufous. Tarsi shortly spinose; the calcaria pale, the long spur of the hinder one-third of the length of the metatarsus.

LIENELLA RUFICORNIS, sp. nov.

Black, the thorax, post-petiole, and antennæ red, as are also the antennal tubercles, apex of clypeus and mandibles; legs of a darker red, the hind tibiæ and tarsi black, the former with a broad white band at the base; wings hyaline, the nervures and stigma black; the tegulæ, base of costa and of stigma black; the cloud is brown, commences near the middle of the stigma and extends to its apex; it is rounded behind and reaches close to the middle of the recurrent nervure, there being another, fainter, smaller cloud beyond it; there is a smaller cloud behind the transverse median and the lower half of the transverse basal, it being narrowed to a point along the latter. The post-petiole, the second and the third segment, except at the apex, are closely, strongly longitudinally striated; the others smooth and shining; the post-petiole is broad at the apex, becoming gradually narrowed towards the base; there is no depression on the second segment; the fifth segment has a narrow, distinct band on the apex. ♀.

Length 6 mm.; terebra 1.5 mm.

Cape Colony.

Thickly covered with a white pubescence. The first joint of flagellum slightly, but distinctly, shorter than the second; the apical joints are unfortunately broken off. Head and thorax closely rugosely, finely punctured; the metanotum more coarsely than the rest. Areola longer than wide; it is broken by the lateral keel shortly beyond the middle, slightly narrowed towards the base, the apex closed, transverse; petiolar area distinct; there are eleven areæ, including the spiracular.

This species comes close to *4-annulata*; it differs essentially in its broader, triangular post-petiole, much longer ovipositor, and shorter, broader, more ovate abdomen.

* LIENELLA LATIFASCIATA, sp. nov.

Black, the thorax red, the legs black, the anterior knees, tibiæ, and tarsi testaceous, the hind tibiæ with a broad white band at the base; wings hyaline, a broad band extending from shortly behind the base of the radius to near the middle of the radial cellule, extending shortly beyond the recurrent nervure, into the second apical cellule, where it becomes roundly narrowed; there is a smaller cloud along the transverse median and apical half of the basal nervures, it being roundly narrowed in front and much broader behind than beyond the nervures; the nervures and stigma black, the base of the stigma white; tegulæ red. ♀.

Length 6-7 mm.; ovipositor 5 mm.

Cape Colony.

Head and thorax closely punctured, covered with white pubescence. Antennæ dark red. Mandibles except the teeth red; the palpi of a more obscure red, thickly covered with white pubescence. Metanotum more coarsely punctured than the mesonotum; the areola is clearly defined, longer than wide, the base obliquely narrowed from shortly before the middle, the keels almost uniting; the apex is slightly rounded inwardly; the petiolar area is open at the base; the two lateral areæ are open on the outer side; the apical triangular; the keels on the posterior median area are only distinct on the top; the spiracular area is not defined. First abdominal segment broad at the base, becoming gradually wider towards the apex; the centre of the post-petiole is raised, stoutly longitudinally striated; the sides rugose, with curved striæ; the second to fourth segments are closely, strongly longitudinally striated; the others smooth; there is a broad, curved furrow beyond the middle of the second segment, and there is a narrow crenulated furrow on the apex; there is a similar furrow on the base of the third and a wider one on the apex, the border being raised; the centre is broadly depressed.

ICHNEUMONINI.

ICHNEUMON, Linn., *sec.* Ashm.

ICHNEUMON RUFICAUDIS, sp. nov.

Black, the antennal flagellum and the legs, except the coxæ and trochanters, rufous; the hinder tarsi infuscated; the apices of the second and third abdominal segments narrowly and the whole of the sixth and seventh rufous, tinged with fulvous; the wings tinged with fuscous-violaceous, the stigma dark fulvous, the costæ and nervures black. ♂.

Length 12-13 mm.

Cape.

There is a narrow rufous line on the upper half of the inner orbits; the face closely, strongly punctured; the upper part of clypeus with some strong, deep punctures. Labrum fulvous, fringed with golden hair. Mandibles rufo-fulvous, black at the apex. Thorax closely punctured; the scutellum more strongly punctured, its apex triangularly raised and closely longitudinally striated. Metanotum rugosely punctured; the areola longer than wide, roundly narrowed at the base, the keels there irregular; the apex is roundly curved inwardly; it is irregularly rugosely striated; posterior median area closely transversely striated. Centre of post-petiole aciculated, the sides strongly punctured; the second to fourth segments closely punctured; the base of the second closely striated; the gastrocœli deep, rugose. Areolet 5-angled, narrowed in front; recurrent nervure received at the base of the basal third, disco-cubital nervure unbroken; the transverse median nervure received beyond the transverse basal.

ICHNEUMON? NATALENSIS, sp. nov.

Black, the face, clypeus, labrum, mandibles, except at apex, palpi, a line on the inner orbits, one on the outer commencing near the top, becoming gradually wider below, a line on the pronotum, not reaching quite to the base, tubercles, a small triangular mark below the hind wings, scutellums, a mark on the sides of the apical half of the metanotum, the mark gradually narrowed to a point below, a mark on the apex of the basal four segments of the abdomen on the sides, the marks narrowed to a point on the inner side, and the last segment above, yellow; the greater part of the mesopleuræ and of the fourth to sixth abdominal segments and the greater part of the ventral surface, red. Four front coxæ yellow, their trochanters black; femora rufous, yellow at the apex below, the tibiæ yellow, blackish above, the tarsi black; hind legs black; the femora more or less red. Wings hyaline, the stigma and nervures black. Antennal scape yellow, the flagellum rufous below. ♂.

Length 16-17 mm.

Natal. Malvern.

Head closely punctured, covered with a short white down. Apical joints of palpi fulvous. Pro- and mesothorax closely punctured, the apex of propleuræ striated in the middle. Areolet smooth, shining; the apex finely striated, the base open in the middle; the lateral

basal areæ shining, sparsely punctured; the punctures large, clearly separated; the other areæ strongly, closely punctured, the posterior median more or less transversely striated-reticulated; the striae strongest on the sides. Abdomen closely, strongly punctured, the post-petiole smooth at the spiracles; gastrocæli deep, striated, smooth in the middle. Areolet 5-angled, narrowed in front; the recurrent nervure received shortly beyond the middle; the discocubital and the recurrent nervure broken by a stump; the transverse median nervure received shortly beyond the middle.

The amount of red colour probably varies; there may be a red mark on the metapleuræ. Areola horseshoe-shaped, longer than wide; the apex rounded inwardly. I only know the ♂. It may be a *Stenichneumon*. It is not an *Ichneumon*, sens. str.

EXEPHANES, Wesm.

EXEPHANES NIGROMACULATUS, sp. nov.

Rufous, the pleuræ except the upper half of the pro-, the breasts, and a line down the middle of the metanotum, dilated at the base and still more so at the apex, black; the basal third of the antennæ rufous, the rest black, with joints 10–16 whitish below; wings hyaline, slightly tinged with yellow; the stigma and nervures fulvous. ♀.

Length 15–16 mm.

Cape Colony. King William's Town.

Face and upper part of clypeus strongly and closely punctured, the lower part of the latter smooth; it has a \blacktriangle -shaped fovea in the middle. Front and vertex closely and coarsely punctured. Mandibles rufous, the teeth black, the upper tooth much larger than the lower. Palpi rufous, tinged with yellow. Thorax closely punctured and covered with a white down; the scutellum is less and the metanotum more closely punctured than the mesonotum. Scutellum rounded, keeled at the base. Areola long, about three times longer than wide, open at the base, indistinctly separated from the posterior median; its apical half narrower than the basal; there are two lateral areæ, the basal is the smaller and is longer than wide; the apical larger, roundly, obliquely narrowed from the inner side to the apex on the outer; there are three areæ on the apical slope, which is closely, strongly, transversely striated. Spiracles long, linear. Abdomen twice the length of the thorax; the post-petiole and the second and third segments closely punctured; the centre of the post-petiole raised, clearly limited, wider than the sides; the gastrocæli

deep, longer than wide, curved and narrowed at the apex; the centre with some striæ; the part between them wide, indistinctly striated; the second segment is longer than the others—about one-fourth longer than the third. Ovipositor long, black, projecting. Areolet 5-angled, receiving the recurrent nervure shortly beyond the middle; transverse median received shortly beyond the transverse basal.

This seems to be a genuine *Exephanes*; it may be separated from *E. rufulus*, Tosq., thus:—

Pleuræ rufous, metanotum without black, the spiracles oval; areola semi-oval.	<i>rufulus</i> .
Pleuræ black, metanotum black in the middle, the spiracles linear, areola long.	<i>nigromaculatus</i> .

I have in my collection from Natal a species which more resembles *E. rufulus* in size and colouration, but differs from the latter in the areola not being "semi-oval"; from *nigromaculatus* in the pleuræ and metanotum not being marked with black; and from both in the apex of the abdomen being yellowish-white.

* *EXEPHANES FLAVOMACULATUS*, sp. nov.

Rufous, the eye orbits narrowly and the sixth to eight abdominal segments pallid yellow; antennæ rufous, the eleventh to sixteenth joints white, the apical black; wings hyaline, the nervures and stigma black; the areolet almost 4-angled, the nervures almost meeting in front, the recurrent nervure received almost in the middle; the transverse median nervure interstitial. ♀.

Length 12 mm.

Natal.

Face finely punctured, more sparsely on the raised central part; the clypeus more sparsely punctured above; its apex impunctate. Labrum projecting, yellow. Mandibles rufous, the teeth black. Palpi pale rufous, tinged with yellow. Temples obliquely narrowed. Pro- and mesothorax closely, but not strongly punctured. Scutellum shining, with only a few punctures in the middle. The median segment is more closely and strongly punctured than the rest of the thorax; the areola is about twice longer than wide, open at the base, the apex rounded inwardly; it is about twice longer than wide; narrowed from shortly beyond the middle to the base and to a less extent towards the apex; the basal lateral area is as wide at the apex as the length on the outer side, its base wider than the apex; the second is twice wider on the outer than on the inner side; the

apical three areae are transversely striated-rugose; the lateral more strongly than the posterior median. Spiracles about three times longer than wide. Pleurae closely punctured. Post-petiole striated in the centre; the second segment closely punctured, the others smooth; the gastrocœli indistinct, longish, narrow, striated. Sheath of ovipositor broad, largely projecting.

PSEUDAMBLYTELES, Ashm.

PSEUDAMBLYTELES PERINGUEYI, sp. nov.

Black; the third and following segments of the abdomen with a bluish tinge; the legs rufous, the coxæ, trochanters and the apical joints of the tarsi, black; wings fuscous violaceous, iridescent, the stigma and nervures black. ♀.

Length 13–14 mm.

Cape Colony. Stellenbosch.

Head closely, somewhat strongly punctured; the centre of the front irregularly transversely striated; the apical half of the clypeus more shining, strongly, sparsely punctured; the pubescence sparse, indistinct; the apex of the clypeus is curled up. Thorax closely punctured; the scutellum smooth, its apical slope closely punctured. Areola longer than wide, of equal width, the base transverse, the apex slightly, roundly dilated outwardly in the middle; it is stoutly, irregularly longitudinally striated-reticulated, most strongly at the apex; the spiracular area is stoutly, obliquely, the apical slope closely, transversely striated; the metapleuræ is more strongly and closely punctured than the meso- or propleuræ. Areolet large, wide in front, 5-angled; the recurrent nervure is received shortly beyond the middle; the disco-cubital is broken by a long stump of a nervure; the transverse median is received shortly beyond the transverse basal. Centre of post-petiole raised, clearly separated, its basal half irregularly punctured, the apical longitudinally striated, the striæ curved at the base; the sides are more closely and finely punctured; the second to fourth segments are closely punctured, the punctures becoming gradually finer; the apical segments smooth. Hind coxæ closely punctured; the tarsi spinose.

PSEUDAMBLYTELES ERYTHROSPILUS, sp. nov.

Black, the basal three joints of the antennæ, tegulæ, and the legs, except the coxæ and trochanters, rufo-fulvous; a narrow line on the inner orbits, commencing shortly below the antennæ; a narrow line on the apex of the second abdominal segment and the mandibles

rufous; the palpi pale yellow; wings fuscous violaceous, the stigma, costa, and nervures black. ♀.

Length 11 mm.

Cape Colony. Cape Town?

Only the basal three joints of the antennæ are present. Face and clypeus strongly and closely punctured; the clypeus less closely than the face; both are covered with short black pubescence; the front and vertex are more strongly punctured. Pro- and mesothorax strongly and closely punctured; the base of the pro- and the apex of the mesopleuræ more or less striated. Scutellum large, rounded, shining, distinctly, sparsely punctured, the apex strongly, closely longitudinally striated. Metanotum closely, rugosely punctured; depressed in the middle at the base; the areola large, slightly longer than broad, of equal width throughout, transverse at the base, the apex slightly turned inwardly in the middle. Post-petiole broad, the centre closely longitudinally finely striated; the sides somewhat strongly punctured; the other segments are closely punctured, the punctuation becoming weaker; the gastrocœli transverse, deep. Areolet 5-angled, half the length of the apex in front; the recurrent nervure is received near the base of the apical third; the transverse median nervure received shortly beyond the transverse basal; the disco-cubital nervure is broken by a minute stump. Metathoracic spiracles large, linear. Last abdominal segment longer than the penultimate. Temples wide, roundly narrowed. The areæ on the metanotum are indistinct.

This species closely resembles *P. peringueyi*; the main differences between them may be expressed thus:—

Basal joints of antennæ black; temples straight, obliquely sharply narrowed, scutellum convex, its apex punctured, disco-cubital nervure with a long stump	.. .. .	<i>peringueyi</i> .
Basal joints of antennæ red; temples rounded, not much narrowed, scutellum not much raised, the apex striated; disco-cubital nervure with a minute stump	.. .. .	<i>erythrospilus</i> .

* PSEUDAMBLYTELES MACULICAUDIS, sp. nov.

Black, the apical half of the first abdominal segment, the whole of the second and third, the antennæ and legs, except the coxæ, the whole anterior trochanters and the basal joint of the hinder, red, tinged with rufous; a mark on the sides of the face, longer than broad and projecting on the inner side above and the upper half of the clypeus pale yellow, the labrum hidden, yellowish testaceous; the middle of mandibles testaceous, palpi rufo-testaceous; wings

hyaline, the apex slightly tinged with fulvous; the stigma and the costa in front fulvous, the nervures darker. ♂.

Length 10 mm.

Cape Colony.

Antennæ short, as long as the abdomen, the scape black above; the apical joints serrate. Face and clypeus closely, strongly punctured, thickly covered with pale fuscous pubescence; the front and vertex are more closely and as strongly punctured. Temples wide, obliquely, roundly narrowed, thickly covered with long white pubescence. Apical joint of mandibles long, the sub-apical short. Pro- and mesothorax closely punctured; the scutellum rounded, not flat, shining, sparsely punctured and haired. Post-scutellum closely rugosely punctured. Median segment short, its base obliquely depressed, the areola large, longer than broad, transverse at the base and apex; longitudinally rugose-striated; the rest of the segment is closely rugosely punctured; the keels appear indistinct owing to the roughness of the sculpture; the basal areæ are separated; the keel bounding the outer side of the spiracular area is distinct only on the base. The raised central lobe of the post-petiole bears some large, clearly separated punctures, as do also the sides at the apex; the other segments are punctured, the punctuation becoming weaker towards the apex; gastrocœli large, deep in the centre, the sides stoutly striated; there are seven segments; the penultimate bears two large, greenish-yellow marks above; the ventral keel extends to the apex of the fourth segment; the last ventral becomes gradually narrowed to a point. Areolet 5-angled, the recurrent nervure is received shortly beyond the middle; the transverse median nervure beyond the transverse basal; the disco-cubital nervure is broken by a short stump. Apex of hind tibiæ black; the apices of tarsal joints blackish. Spiracles of median segment about three times longer than wide.

LEPTOPHATNUS, gen. nov.

Wings uniformly dark violaceous; the areolet 4-angled, the transverse cubital nervures meeting in front; the disco-cubital nervure broken by a stump of a nervure; the transverse median nervure interstitial. Antennæ dilated beyond the middle. Metanotum regularly areolated; in the middle is a long narrow area extending from the base to the base of the apical third, the apex being narrowed; on either side of it are two large areæ, the basal one longer than wide, of equal width, the apical is longer on the outer

side, the apex oblique; on the apical slope are three areæ, the central longer and narrower than the others; there is a spiracular area. Spiracles linear. Scutellum rounded, not much raised, the base keeled. Clypeus not separated from the face; the sides above deeply foveate; its apex transverse. Labrum hidden. Abdomen with eight segments; the first long, the post-petiole not separated, it becoming gradually widened towards the apex; the second, and, to a less extent, the third, closely punctured; the gastrocæli transverse, deep; ovipositor projecting; the last two segments are white. Ventral keel on the second and third segments.

The temples are straight, obliquely narrowed, broad; occiput margined, roundly incised. Apices of tarsal joints spinose. Apex of hind femora reaching to the apex of third abdominal segment. This genus should be readily known by the blue-black body, deep violaceous wings with 4-angled areolet, regularly areolated metanotum and long narrow areola.

LEPTOPHATNUS RUFICEPS, sp. nov.

Blue-black, the head orange-red, the apical two abdominal segments white above; wings deep fuscous violaceous, the nervures and stigma black; the antennæ with the eleventh to sixteenth joints for the greater part white. ♀.

Length 18 mm.

Cape Colony. Port St. Johns.

Face closely and strongly, the top of the clypeus sparsely, punctured, its apex smooth, as are also the front and vertex; the former deeply depressed, the raised upper part deeply furrowed. Thorax closely, distinctly punctured, the median segment more closely and strongly than the rest; the centre of the lateral lobe of mesonotum smooth; and there is a smooth shining space on the upper part of the mesopleuræ at the apex. Petiole with longish punctures along the sides; post-petiole closely, finely longitudinally striated; the apex shining in the centre, with a few punctures; the second and third segments closely, finely punctured.

JOPPINI.

HENICOPHATNUS, Kriechb.

HENICOPHATNUS PILOSUS, sp. nov.

Dark red; the abdomen tinged with violaceous tints, the apex of the fourth and the following segments whitish yellow; the legs (and

especially the hinder) darker coloured; the apical half of the fore femora, a line on the upper inner orbits, pale yellow; antennæ dark red, the middle joints paler; wings hyaline, iridescent, the stigma testaceous, the nervures black. ♀.

Length 13 mm.

Cape Colony. King William's Town District; St. Mathew's.

Flagellum, head, thorax and legs thickly covered with white pubescence; that on the sternum longer and denser. Head with wide temples, not much narrowed, and a long malar space—longer than the antennal scape; the face and clypeus closely punctured, except on the apex of the latter; the two form one piece, there being no dividing suture. Front and vertex smooth. Apex of mandibles black, depressed in the middle. Palpi black, thickly covered with white pubescence. Mesonotum closely reticulated and thickly covered with fulvous pubescence. Scutellum roundly convex, shining, the middle with large, scattered punctures, the apex with an oblique slope, stoutly, irregularly striated; the space between the striæ depressed. Median segment closely, strongly reticulated-punctured, the base of the area smoother and more shining; there is only one area, formed by 2 keels extending from the base to the apex; the keels turn in slightly and roundly, before the middle; the rest of them diverge slightly and roundly, the apex being thus wider than the base. Pleuræ strongly, closely punctured, more or less reticulated. Abdomen short; the first segment as long as the second; the post-petiole broadly dilated, strongly, closely, longitudinally striated; the second segment is longer than its width at the apex; it is closely punctured, striated at the base; the gastrocæli deep, transverse, deepest in the middle, with the sides oblique; the third is broader than long; the apical segments smooth, together not longer than the third. Areolet 5-angled, narrowed in front; the disco-cubital nervure broken by a stump of a nervure, the transverse median received shortly beyond the transverse basal.

The median segment is roundly sloped; there is no tooth on it; the scutellum is stoutly margined laterally; the sides on the inner side depressed and with some transverse keels. The antennæ are dilated beyond the middle. Apex of clypeus broadly rounded, almost transverse; there are no lateral foveæ. Terebra projecting. Thorax about two and a half times longer than wide.

This species does not quite agree with the description of *Henicophatnus* given by Kriechbaumer (Berl. Ent. Zeit. xxxix. 301); for instance, that genus has the "metanoto utrinque denticulo brevi, acuto armato."

ANISOJOPPA, gen. nov.

Metanotum depressed at the base; closely, strongly longitudinally reticulated, without areæ or keels; the sides at the top of the apical slope with broad teeth; it is longer than wide; the apex with a steep, oblique slope; the spiracles long, linear. Scutellum not much raised above the level of the mesonotum; the sides stoutly keeled; the apex with a long, oblique slope. Sides of post-scutellum keeled. Antennæ not much dilated, the apex narrowed. Apex of clypeus transverse; its sides above bordered by oblique foveæ, the centre not separated from the face by a furrow. Labrum short, visible. Eyes large, slightly incised on the inner side above; the malar space small. Abdomen twice as long as the head and thorax united; closely punctured; the gastrocœli deep, transversely oblique; there are eight segments; the ovipositor long, projecting. Wings short compared with the body; the areolet 5-angled; the disco-cubital nervure broken; transverse median nervure received shortly beyond the transverse basal. Body longer than usual; the colour uniformly luteous, with hyaline wings. Antennæ ringed with white.

The absence of areæ and keels on the median segment, the strong spines on it, the long projecting ovipositor and long, unicolorous body are characteristic of this genus.

ANISOJOPPA LUTEA, sp. nov.

Luteous, the sides of the thorax paler in colour; the flagellum of antennæ black except at the base, the seventh to twelfth joints white; wings hyaline, the base slightly tinged with fulvous; the stigma and nervures black; the apex of the sheaths of the ovipositor black. ♀.

Length 16 mm.

Face and clypeus sparsely punctured in the middle, covered with short white pubescence; they are whitish yellow; the inner orbits are bright lemon-yellow above. Temples wide, sharply obliquely narrowed; the occiput margined. Mesonotum closely, almost rugosely punctured, thickly covered with a short fuscous pubescence. Scutellum more strongly punctured, roundly depressed at the base and apex; the keels are stout, highest at the base; that on the apex not so high as that on the sides; the sides striated, the apical slope smooth. Post-scutellum smooth, the sides obscurely striated. The basal slope of metanotum is depressed, obscurely punctured, its top keeled; the rest stoutly longitudinally-transversely

reticulated-striated, the apical slope less closely than the rest. Pro- and mesopleuræ weakly, the metapleuræ more closely and strongly punctured. Post-petiole for the greater part closely punctured; the second and third segments closely, distinctly punctured; the gastrocæli stoutly, obliquely striated on the basal slope. Apical joints of four anterior tarsi, the posterior and the posterior tibiæ above, except at the base, which is curved, black.

The ♂ is similarly coloured; its antennæ longer, pilose, and serrate towards the apex.

Durban. Natal. A ♀ in my collection marked "Cape."

OXYJOPPA, gen. nov.

Head large, the temples very wide, the occiput deeply, widely incised. Malar space as long as the eyes; the face and clypeus forming one piece, without a separating suture. Antennæ short, not dilated, but narrowed at the apex. Labrum hidden. Scutellum not raised above the level of the mesonotum, the sides margined; the apex with a long steep slope. Median segment short, rounded behind; the areæ not clearly defined; the areola coffin-shaped, twice longer than wide; from its apex a keel runs round the sides of the apical slope; at the base there is an indistinct square area on either side. Abdominal petiole narrowed at the base, becoming gradually wider towards the apex; the second and third segments are closely punctured; the gastrocæli deep, transverse; the abdomen becomes gradually narrowed from the base of the third segment. Areolet 5-angled; the disco-cubital nervure unbroken; the transverse median nervure received shortly beyond the transverse basal.

The furrow at the base of the metanotum is narrow, but deep. The wings are hyaline, short; the hind femora reach close to the apex of the third segment. Thorax three times longer than wide. Ovipositor projecting. Metathoracic spiracles about two and a half times longer than wide. There are seven abdominal segments, the last fully longer than the preceding; the ovipositor is as long as the last segment.

In the arrangement of Dr. Schmiedeknecht this genus would come in near *Tosquinetia* Ashm. (= *Obba*, Tosq., nec Beck). The apex of the abdomen is much more sharply and distinctly pointed than usual with the *Joppini*.

OXYJOPPA FLAVOBALTEATA, sp. nov.

Rufous; the base of the mesonotum, the median segment, except for two large marks on the sides, extending on to the pleuræ, the basal three-fourths of the second abdominal segment and almost the half of the third, black; the apex of the second with a yellow band all round, it being separated from the black by a red band of similar size. Apical half of antennæ black; there is a yellowish band in the middle. Wings hyaline, very weakly infuscated at the apex; the stigma fulvous. Legs dark rufous, the hind tibiæ and tarsi blackish. ♀.

Length 13 mm.

Natal. Estcourt.

Face and clypeus closely punctured, covered with a short pubescence. Front deeply depressed; stoutly keeled down the middle, the centre somewhat strongly transversely striated; the vertex shining, weakly punctured. Antennæ short, not much longer than the head and thorax united; the third joint longer than the fourth. Thorax closely rugosely punctured, the median segment more coarsely than the rest; the scutellum coarsely reticulated; the apical slope and the post-scutellum irregularly longitudinally striated, the striæ twisted. Upper half of propleuræ closely obliquely striated, the lower closely punctured; the meso- and metapleuræ closely punctured, more or less reticulated. The median segment is thickly covered with white pubescence. Post-scutellum deeply, sparsely punctured; its apex is obscure yellow; the second and third segments are closely, somewhat strongly punctured. Wings short, not reaching much beyond the middle of the abdomen.

Probably the amount of black on the thorax and abdomen varies.

PHAISURA, gen. nov.

Median segment without areæ, depressed at the base; there are two keels in the middle, running from the base to the apex, with a curved transverse, not very distinct, keel at the top of the apical slope, forming almost two keels; there is another longitudinal keel along the outer edge of the metanotum; the spiracles linear, not very long, narrow. The whole segment is rugosely punctured. Scutellum roundly convex, the sides stoutly keeled, the apex with an oblique slope. Wings uniformly fuscous violaceous; the areolet oblique, 4-angled, the nervures uniting in front, the transverse median nervure interstitial. Abdominal petiole long and slender, the

post-petiole becoming gradually narrowed towards the apex; the second and third segments weakly punctured; the gastrocœli transverse, widely distant from the base of the segment; there are seven segments; the apical bluntly pointed; the ventral keel extends to the fifth segment. Antennæ stout, serrate. Clypeus not separated from the face, its apex bluntly rounded; the labrum shortly projecting. Malar space and temples large; the latter obliquely narrowed.

The ♀ I do not know; but the ♂ agrees best with the *Joppini*, especially in the form of the scutellum, median segment and antennæ. The absence of areæ on the metanotum seems to be not uncommon with the African genera, or at any rate their being greatly reduced in number. The same thing occurs with some Oriental genera of *Joppini*.

PHAISURA NIGRICEPS, sp. nov.

Rufous, the head and the apical three segments of the abdomen black; the antennæ of a paler rufous colour, with a whitish band beyond the middle, the apex black; wings fuscous violaceous, the stigma and nervures black. ♂.

Length 10–12 mm.

Cape Town.

Head as wide as the thorax; the face strongly punctured; the clypeus impunctate, bare; labrum rufo-testaceous, fringed with long fulvous hair. Mandibles and palpi rufo-testaceous, the apex black. Mesonotum closely, strongly punctured; the scutellum more strongly punctured, the lower part of the apical slope smooth. Median segment coarsely, closely punctured, the apical slope more or less transversely striated. Pro- and mesopleuræ closely, strongly punctured, the former with a smooth triangular space below the middle. First abdominal segment very smooth and shining, the following three closely punctured. Apices of tarsal joints spinose; the claws very large.

CRYTEA, gen. nov.

Median segment short, deeply depressed at the base, regularly areolated; the areola small, horseshoe-shaped, wider than long, widely separated from the base of the segment; the spiracles linear. Scutellum roundly convex, not much raised above the level of the middle of mesonotum, the sides stoutly margined, the apex less strongly keeled; it has a longish steep slope on the apex. Head

narrower than the thorax, the temples short, obliquely narrowed. Clypeus not separated from the face, its apex broad, transverse; labrum broad, projecting. Upper tooth of mandibles much longer than lower. Areolet almost 5-angled; the transverse median nervure received shortly beyond the transverse basal; the wings are clear hyaline. Abdomen short, not much longer than the head and thorax united, bluntly pointed at the apex; the keel on the second and third segments. In the ♀ the antennæ are short, stout, dilated, and compressed beyond the middle; three-coloured, ringed with white in the middle; in the ♂ they are serrate. There are seven abdominal segments in the ♀; the last is nearly as long as the penultimate; the ovipositor is broad, long, largely projecting; the cerci distinct. Claws large, curved. Sutures between the abdominal segments not constricted; they are almost smooth. Basal joints of flagellum long.

It is not clear to me whether this genus should be referred to the *Joppini* or to the *Amblypygi*; there does not appear to be a clear line of demarcation between the two. The metanotum is too regularly areolated for the *Joppini*. In the four species I have included in the genus, the areola is different in form and size in each species. The colouration—almost uniformly luteous—is identical, or almost so; the wings are hyaline, and, in the two known females, the antennæ are three-coloured.

CRYTEA VARICORNIS, sp. nov.

Luteous, the six to eight basal joints of antennæ luteous, the ninth to thirteenth or fourteenth white, the rest black above; brownish below; the eye orbits lemon-yellow; wings hyaline, the stigma pale fuscous, the nervures of a darker fuscous colour. Areola about one-third longer than broad, its apex transverse, the base in the middle transverse, the sides rounded; it is closely punctured and finely, irregularly striated, the apex with a few longitudinal striæ; the other areæ are closely, finely punctured, the posterior median finely transversely striated. ♀.

Length 7–8 mm.

Cape Colony.

Head, except the apex of the clypeus, closely punctured, as is also the thorax, except the scutellum, which is smooth and shining. The scutellar keels are strong on the sides, weak round the apex. Centre of post-petiole shining, almost impunctate; the sides strongly, closely aciculated, with a few punctures on the apex;

mesonotum with three large fuscous lines. Wings hyaline, the stigma and nervures black. ♂.

Length 9 mm.

Cape Colony.

Face closely punctured, the upper part of the clypeus more sparsely punctured, its apex smooth. Vertex closely punctured; the front deeply depressed, the top punctured. Mesonotum closely punctured, covered with a short down. Scutellum almost smooth. Base of metanotum closely and strongly punctured; the three apical areae closely transversely striated. Pleuræ closely punctured, the metapleuræ more strongly than the rest; the sternal area clearly defined, large, the upper and lower keels roundly curved, the lower stouter than the upper. Post-petiole punctured, except in the centre at the apex; the second and third segments closely, obscurely punctured, the apical pilose; the gastrocœli shallow, stoutly striated.

CYRTEA LUTEA, sp. nov.

Length 8 mm. ♂.

Cape Colony.

Almost similar in size and colouration to *C. fuscomaculata*; the two may be separated thus:—

Areola as long as its width at the apex; the posterior median area narrower than the greatest width of the lateral areae; the apical fourth of the hind tibiæ black	<i>fuscomaculata</i> .
Areola longer than its width at the apex; the posterior median area as wide as the greatest width of the lateral; the apical half of hind tibiæ black.. .. .	<i>lutea</i> .

Eye orbits largely tinged with yellow. Flagellum of antennæ fuscous, black above. Sides of mesonotum with a broad fuscous line. Thorax closely punctured, covered with a minute pale pile; the scutellum almost impunctate. Areola bluntly rounded at the base. The raised centre of post-petiole is smooth and shining; there is a distinct round fovea in its centre. Gastrocœli longer than wide, striated on the outer, smooth on the inner side. The black mark enclosing the ocelli extends on to the upper half of the front.

HERESIARCHINI.

MACROPHATNUS, Cam.*

? MACROPHATNUS BALTEATUS, sp. nov.

Black, the flagellum of antennæ rufo-fulvous; the scape, face, and clypeus, a line on the pronotum, tegulæ, tubercles, scutellums, a

* Rec. Alb. Mus. i., 232, 1905.

large mark on the metanotum, commencing near the base of the areola, extending to near the apex and with the apical half extended on to the spiracular area and the apices of all the abdominal segments (the band on the first wider than on the others) pale yellow. Four front legs pale yellow; the coxæ and trochanters, and the upper part of the femora broadly, black; the hinder legs black, two marks (the outer longer and narrower than the inner), a narrow line on the top of the femora, more than the basal half of the tibiæ and the calcaria, yellow. Wings hyaline, the stigma and nervures black. ♂.

Length 12 mm.

Cape Colony. Worcester Distr.; Hex River (January).

Front, face and clypeus closely punctured. Mandibles rufous above. Thorax closely and strongly punctured, the scutellum almost smooth; the pubescence on the head and thorax is close and white. Abdomen closely punctured, most strongly on the basal segments; the gastrocœli shallow, indistinct.

As this species differs in some respects from the type of the genus, *e.g.*, the disco-cubital nervure is distinctly broken and the transverse median nervure is interstitial, I give a generic description of it.

Median segment untoothed, only the areola and posterior median areæ defined; the areola large, wider than long, 6-angled, narrowed at the base, the apex transverse; the base of the segment is deeply, obliquely depressed. Spiracles large, linear. Head narrower than the thorax; the temples wide, oblique. Clypeus not separated from the face, its apex almost transverse. Labrum not projecting. Scutellum roundly convex; the sides not keeled. Antennæ short, tapering towards the apex, slightly serrate. Areolet large, not much narrowed in front, 5-angled; the recurrent nervure received near the middle; disco-cubital nervure broken by a distinct stump of a nervure; the transverse median nervure almost interstitial.

* ? *MACROPHATNUS TRILINEATUS*, sp. nov.

Yellow, tinged with fulvous, the centre of the front, clypeus and occiput broadly, three lines on the mesonotum, the central (and larger) on the basal, the others on the apical half, the parts surrounding the scutellum, the pleuræ, the second abdominal segment except round the edges above and the third and fourth, black; the outer orbits broadly rufous; the antennæ and femora are more largely tinged with fulvous than the rest of the legs and body.

Wings hyaline, tinged with yellow; the apex slightly infuscated, the stigma and costa fulvous, the nervures darker coloured. ♂.

Length 12–13 mm.

Transvaal.

Antennæ not much longer than the abdomen, not serrate, thickly covered with a white down, the apical joints blackish. Head closely, distinctly punctured, covered with a white pile; the apex of clypeus broad, transverse. Thorax closely punctured; the scutellum roundly convex; its apical slope is the longer. Metanotum deeply depressed at the base; the areola and posterior median area are only faintly indicated, the keels bounding them being indistinct, not clearly separated from the surrounding regions. Post-petiole broad, its centre raised, bluntly keeled laterally; the other segments are closely punctured, the punctuation becoming weaker towards the apex; the gastrocœli are lateral, narrow; the ventral keel is on segments 3 and 4. Apical segment bluntly rounded. The sides of the third and the sides and apex of the fourth are yellow. Tarsi spinose. Areolet large, 5-angled, the recurrent nervure is received in the middle; the disco-cubital nervure has an indistinct stump; the transverse median nervure is interstitial.

Except that the areola and other areæ are not clearly defined, this species agrees with the others I have included in the genus.

ROSSELLA, gen. nov.

Metanotum indistinctly areolated; the areola large, wide, open at the base and apex, longer than wide; the other areæ obsolete, the segment short, closely rugosely punctured. Scutellum large, flat, not margined. Head, if anything, narrower than the thorax. Centre of face raised, not separated from the clypeus by a furrow, apex of clypeus almost transverse; the lateral foveæ large. There is a tubercle between the antennæ. Labrum projecting. Temples broad; occiput roundly incised, margined. Wings fuscous violaceous; the areola large, 5-angled, wide in front; the recurrent nervure received shortly beyond the middle; the transverse median nervure almost interstitial. Post-petiole widely dilated, weakly punctured in the middle, more strongly on the sides; the gastrocœli longer than wide; the segments are almost smooth.

The antennæ are short and thick, the third joint is not much shorter than the following two united. Legs short and stout; the hind coxæ large; the tarsi spinose. Malar space large. Disco-cubital nervure unbroken. Ventral keel on the second and third segments; the apex of the abdomen bluntly pointed.

In the system of Dr. Schmiedeknecht (Opus. Ichn. 27) this genus would come in near *Heresiarches*; the latter may be known by the areola being indicated by a polished space and the metanotum deeply furrowed behind.

ROSSELLA VIOLACEIPENNIS, sp. nov.

Black, the antennal scape and head dark red; the mesonotum tinged with red; the basal three abdominal segments bright red; the tibiæ and tarsi rufo-testaceous; the hind tarsi blackish. ♀.

Length 12 mm.

Transvaal. Johannesburg.

Head and thorax thickly covered with white pubescence; the face closely, the clypeus sparsely punctured; the front and vertex, except at the orbits, are blackish. Mesonotum closely, finely punctured; the scutellum smooth and shining. Metanotum closely, rugosely punctured, opaque; there is a keel round the top of the apical slope, weak in the centre, dilated at the sides. Pleuræ closely punctured. Mandibles red, black at the apex. Palpi blackish, covered with white pubescence.

LISTRODROMINI.

CTENOCHARES, Först.

CTENOCHARES XANTHOMELAS, Bé.

This species is in the collection from Cape Town. Northwards it extends into Spain. No less than three genera have been proposed for this species—namely, *Ctenochares*, Foerster, Verh. d. naturh. Ver. pr. Rheinl., xxv., 1868, p. 191; *Joppites*, Berthoumieu, Ann. Soc. Ent. Fr., 1894, p. 241; and *Celmis*, Tosquinet, Mém. Soc. Entom. de Belgique, v., p. 71 (1896).

PLATYURI.

PLATYLABUS, Westm.

PLATYLABUS ? RUFO-ORNATUS, sp. nov.

Black, the apex of scutellum, the eye orbits, two broad lines on the mesonotum, the greater part of the scutellum, the abdomen except the narrowed basal part of the first segment, the legs except the coxæ and the antennal scape, red; the eighth to seventeenth joints of antennæ fulvous yellow; wings hyaline, the stigma testaceous, the costa and nervures black. ♀ and ♂.

Length 12 mm.

Cape Colony. Worcester Distr. Hex River (January).

Face strongly and closely punctured, the centre roundly raised; the top of the clypeus with some large, scattered punctures; the centre smooth; the apex with a row of small punctures. Labrum smooth, fringed with fulvous hair. Front and vertex strongly and closely punctured. Mandibles rufous, as are also the palpi. Pro- and mesothorax strongly and closely punctured; the scutellum sparsely punctured, smooth in the middle and at the apex; the lateral keels extend beyond the middle; post-scutellum finely, but not closely punctured. Median segment more closely, rugosely punctured than the mesonotum; the areola clearly longer than wide, rounded at the base, the apex slightly turned roundly inwardly; it is stoutly transversely striated-reticulated; the apex has some stout longitudinal keels. The base of the segment in the centre has an oblique depression; the apical slope is closely transversely rugosely striated, the sides more strongly than the centre. Pleuræ closely, strongly punctured. Sides of post-petiole closely punctured, the centre obscurely striated; it is broad at the apex, becoming gradually narrowed towards the base. The second and third segments are closely punctured. Gastrocœli deep, transverse, the centre striated; the space separating them is closely striated. Areolet 5-angled, narrowed in front, the recurrent nervure received shortly beyond the middle; the transverse median nervure almost interstitial.

Antennæ short, stout, thickened beyond the middle; the basal two joints of flagellum longer than the others, of equal length. Apex of clypeus transverse, broad, the lateral foveæ large. Lower side of tarsi spinose; the apices of the joints with longer spines. Temples wide, obliquely narrowed. Metanotal spiracles long, linear.

The ♂ has the antennæ longer, the flagellum brownish, black above, the inner orbits lined with yellow; there is a narrower yellow line in the centre of the outer. The scutellum is black, or black and red, with the apex yellow; the sides of the clypeus are red, or yellow and red; there is a narrow yellow line on the apical half of the pronotum. The amount of the red and yellow colour on the head and thorax probably varies in both sexes. The areæ on the metanotum are all regularly defined.

This is not a typical *Platylabus*. Comparing it with *P. rufus*, the petiole is narrower and the post-petiole wider. Tosquinet describes some large African species—17–20 mm. in length.

PLATYLABUS ALBO-ORNATUS, sp. nov.

Black; the thorax, except the breasts, red; the face, clypeus, inner orbits narrowly, a narrow line in the middle of the outer, mandibles except the teeth, palpi, the apical half of the fifth and the whole of the sixth and seventh abdominal segments above, white; the four anterior legs whitish in front, for the greater part black behind, the hind legs black, the calcaria white. Antennæ fuscous, the flagellum black above, the scape white below. Wings hyaline, iridescent, the nervures and stigma black. ♂.

Length 10 mm.

Natal. Estcourt.

Antennæ short, stout, as long as the abdomen, serrate towards the apex. Face and upper part of clypeus closely punctured, covered with short, white pubescence. Vertex below the ocelli closely, strongly punctured, smooth behind. Thorax closely, strongly punctured; the base of the scutellum only sparsely punctured; the keels on the scutellum are distinct to the apical slope. Areola as long as its width at the apex; the base rounded, the apex not quite transverse; it is stoutly, irregularly striated, depressed round the edges; the basal areæ almost smooth; the others somewhat strongly punctured, clearly defined; the spiracles almost two and a half times longer than wide. Post-petiole closely, strongly punctured on the sides; the centre raised, less closely punctured; it has the black obscured with red; the second to fourth segments are closely punctured; the gastrocæli oblique, deep. Legs stout, thickly covered with white pubescence. Areolet 4-angled, the nervures uniting in front, the recurrent nervure received in the middle; disco-cubital nervure broken by a stump; the transverse basal nervure interstitial. There is a distinct area on the lower part of the metapleuræ; the upper keel is rounded.

* PLATYLABUS MACULISCUTIS, sp. nov.

Black; the abdomen and legs red; the coxæ, trochanters, and narrowed basal part of first abdominal segment, black; the inner eye orbits and a narrow line on the centre of the outer and tubercles, yellow; apex of clypeus rufous; the labrum rufo-testaceous; mandibles dark rufous; palpi testaceous; the middle of scutellum red, the apex yellow; post-scutellum red at the base, yellow at the apex. Wings hyaline, the stigma testaceous, black in front, the nervures testaceous. Tegulæ rufo-testaceous. ♂.

Length 11 mm.

Transvaal.

Antennæ rufous, blackish above, the scape black. Head somewhat strongly punctured, thickly covered with white pubescence, longest on the face. The inner eye orbits are margined in the middle. Thorax closely and strongly punctured. Areola longish, horseshoe-shaped, longer than broad, rounded behind, its apex transverse; it is finely, closely obliquely striated, the striæ converging towards the centre; the sides at the apex are depressed, and not so distinctly striated; the lateral basal areae are strongly, closely punctured; the apical transversely striated, the spiracular rugosely reticulated; the metapleuræ more or less obliquely striated. Petiole covered with long white pubescence; the post-petiole closely punctured on the sides; the centre smooth at the base and apex, the middle punctured, strongly but not closely; the other segments closely punctured, pilose; gastrocæli large, the outer side with two stout keels. Areolet 5-angled, the recurrent nervure received near the base of the apical third; transverse basal nervure interstitial; the disco-cubital neither angled nor broken.

PLATYLABUS NIGRIPALPIS, sp. nov.

Black, the apex of the clypeus, the line broadest on the sides, the inner and outer orbits narrowly, a short line on the apex of the pronotum, the base of the keels at the base of the scutellum, the abdomen, except narrowly at the base of petiole, and the legs, except the coxæ and trochanters, black. Antennæ rufous, black above. Wings hyaline, iridescent, the stigma and nervures black. ♂.

Length 14 mm.

Natal. Newcastle.

Face closely and strongly, the clypeus sparsely punctured; the front and vertex closely and strongly punctured. Mandibles rufous tinged with yellow, their teeth black. Palpi for the greater part black. Temples short. Occiput transverse. Thorax closely, strongly punctured; the apex of propleuræ strongly striated, narrowly above, more widely below. Scutellum more widely punctured; the apical slope closely striated, slightly tinged with brown. Post-scutellum striated. Median segment somewhat strongly rugosely punctured; the areola longer than wide, roundly narrowed at the base, the apex almost transverse; it is closely, irregularly longitudinally reticulated-striated; the lateral areae are separated; the posterior median area closely, transversely rugose; the lateral areae more coarsely rugosely-

reticulated; the spiracular coarsely, closely, obliquely striated; the spiracles linear. Post-petiole finely striated in the middle, the sides strongly punctured; the other segments are closely punctured, pilose; the gastrocœli deep, the basal slope closely, regularly striated. Areolet 5-angled, in front one-third of the width behind; the recurrent nervure is received shortly beyond the middle; the transverse median shortly behind the transverse basal. Tarsi spinose.

PLATYLABUS ERYTHROCEPHALUS, sp. nov.

Red, the second, third, and fourth abdominal segments black; the apical half of the fifth and the whole of the sixth and seventh white, the antennæ black, the scape red below, the eighth to fifteenth white; the anterior tibiæ and tarsi testaceous in front; wings hyaline, the stigma and nervures black. ♀.

Length 9 mm.

Cape Colony. Mossel Bay.

Head closely punctured; the apex of clypeus black, transverse. Base and apex of mandibles black. Palpi fusco-testaceous. Front deeply excavated. Temples short, oblique. Thorax closely punctured; there is a yellow line on the base of the pronotum, a small yellow mark on the apex of the pronotum, and the tubercles are also yellow. Scutellar keels black. Post-petiole punctured at the base, the apex aciculated; the sides stoutly, obliquely striated. Gastrocœli shallow, striated at the base. The second and third segments are closely punctured.

This does not look like a typical *Platylabus*; the undernoted are the structural characters: Scutellum raised, rounded, stoutly keeled laterally to near the apex. Areola horseshoe-shaped, slightly longer than wide. Last abdominal segment (seventh) large, longer than the penultimate; the ovipositor projecting, as long as the last two segments united. Areolet 5-angled; the disco-cubital nervure broken, transverse basal nervure interstitial. Antennæ ringed with white, the basal joints of the flagellum elongate.

ERISTICUS, Westm.

? ERISTICUS TIBIALIS, sp. nov.

Black; the inner orbits broadly below, narrowly above, a curved mark on the sides of the clypeus, palpi, basal half of mandibles, scutellum, a broad line on the pronotum and tegulæ, yellow; the abdomen red, the greater part of the four anterior coxæ and trochanters yellow, the posterior black, as are also the hind

tibiæ and tarsi. Antennæ black, a small yellow spot on the apex of the scape below. Wings hyaline, the nervures and stigma black. ♂.

Length 11 mm.

Cape.

Face closely and strongly, the clypeus sparsely punctured; the apex of the latter tinged with red. Front and vertex strongly, closely punctured. Labrum dark red in the middle, the sides yellowish. Mandibles with the basal half yellow, followed by a rufous band, the apex black; their apical tooth long, the subapical short, indistinct. Palpi yellowish. Temples sharply, obliquely narrowed; the occiput transverse. Thorax closely, strongly punctured; the median segment with the pleuræ striated at the apex; the spiracular area closely, strongly obliquely striated. Areola longer than broad, the basal part slightly obliquely narrowed, its apex broadly rounded inwardly; it is irregularly transversely striated on the base, the apex obliquely and longitudinally striated; the posterior median area wide, stoutly transversely striated, the striæ widely separated; the spiracular area more closely, less strongly obliquely striated. Middle area of post-petiole bordered by keels; it is closely, strongly striated; the sides strongly punctured. Gastrocæli transverse, the inner side and the space between them closely, stoutly striated. The segments are closely punctured; the apex of the penultimate has a semicircular pale yellow mark; the last is entirely pale yellow. Areolet 5-angled, its width in front one-fourth of what it is behind; the recurrent nervure is received almost in the middle; disco-cubital nervure broken by a stump; the transverse median received distinctly beyond the transverse basal. Scutellum flat.

E. iridipennis, Cam. (Rec. Alb. Mus., i., 142), has the wings fuscous violaceous, the scutellums black, the basal three segments only of the abdomen are red, &c.

	PAGE		PAGE
fulvospina	21	<i>Iphiaulax</i>	40
meridionalis	20	<i>æthiopicus</i>	41
peringueyi	19	<i>basimacula</i>	44
<i>Exephanes</i>	161	<i>calvinia</i>	53
<i>flavomaculatus</i>	162	<i>capensis</i>	55
<i>nigromaculatus</i>	161	<i>coccineus</i>	49
<i>rufulus</i>	162	<i>coccineomaculatus</i>	46
<i>Exetastes</i>	101	<i>decorus</i>	50
<i>peronatus</i>	101	<i>duodecemfasciatus</i>	55
<i>Exochus</i>	131	<i>dodsi</i>	51
<i>fulvopilosus</i>	131	<i>durbanensis</i>	43
<i>Exothecus</i>	72	<i>erythrostromus</i>	53
<i>canaliculatus</i>	75	<i>havilandi</i>	42
<i>elizabethæ</i>	72	<i>incisus</i>	47
<i>flaviceps</i>	73	<i>lativentris</i>	51
<i>flavofasciatus</i>	74	<i>levissimus</i>	44
<i>forticornis</i>	74	<i>longicoxis</i>	42
<i>pulchripennis</i>	73	<i>luctuosus</i>	41
<i>tibialis</i>	75	<i>mediator</i>	46
		<i>meridionalis</i>	45
		<i>mimeticus</i>	58
F		<i>ornaticollis</i>	41
<i>Fœnatopus</i>	18	<i>pietus</i>	47
<i>albomaculatus</i>	18	<i>rhodesianus</i>	54
		<i>robustus</i>	57
		<i>rubrinervis</i>	50
G		<i>signatus</i>	47
<i>Gasteruption</i>	21	<i>tanyceras</i>	49
<i>crassiventre</i>	23	<i>trichiosomus</i>	55
<i>dunbrodyense</i>	25	<i>varipalpis</i>	48
<i>johannis</i>	24	<i>varitinctus</i>	50
<i>leptocephalum</i>	22	<i>wahlbergi</i>	50
<i>lissocephalum</i>	26	<i>whitei</i>	52
<i>maculiceps</i>	25	<i>xanthocarpus</i>	41
<i>pulchripenne</i>	23	<i>xanthopterus</i>	41
<i>spilopus</i>	27	<i>xanthostomus</i>	56
<i>Gastrotheca</i>	35		
<i>bilobata</i>	35	J	
<i>furcata</i>	36	<i>Joppites</i>	177
<i>Glypta</i>	117		
<i>nigro-ornata</i>	117	L	
<i>Gonioprymnus</i>	126	<i>Latana</i>	77
<i>maculiceps</i>	126	<i>excavata</i>	78
<i>Gymnobracon</i>	77	<i>Leptophatnus</i>	165
		<i>ruficeps</i>	166
H		<i>Larpeletes</i>	154
<i>Henicophatnus</i>	166	<i>celer</i>	154
<i>pilosus</i>	166	<i>ruficollis</i>	154
<i>Henicospilus</i>	81	<i>Lienella</i>	155
<i>damarensis</i>	81	<i>canaliculata</i>	155
<i>natalensis</i>	81	<i>latefasciata</i>	159
<i>rufus</i>	81	<i>nigriceps</i>	156
<i>Holcopimpla</i>	112	<i>quadriannulata</i>	157
<i>nigricornis</i>	113	<i>ruficornis</i>	158
		<i>Limmerium</i>	96
I		<i>areolatum</i>	98
<i>Ichneumon</i>	159	<i>capense</i>	97
<i>natalensis</i>	160	<i>fulvipalpis</i>	97
<i>ruficaudis</i>	159	<i>longiceps</i>	100
		<i>melanostomum</i>	100

	PAGE
peringueyi	98
sessilinervis	99
<i>I. lissonata</i>	118
<i>ethiopica</i>	120
<i>africana</i>	119
<i>curvilineata</i>	124
<i>fulvipalpis</i>	122
<i>fuscicornis</i>	121
<i>interstitialis</i>	119
<i>lineaticeps</i>	119
<i>marshalli</i>	123
<i>pulehribalteata</i>	120
<i>spilocephala</i>	124

M

<i>Macrocentrus</i>	30
<i>capensis</i>	30
<i>Macrophatnus</i>	174
<i>balteatus</i>	174
<i>trilineatus</i>	175
<i>Mesostenus</i>	145
<i>albipalpis</i>	146
<i>elizabethæ</i>	147
<i>levifrons</i>	148
<i>lightfooti</i>	147
<i>lissonotus</i>	149
<i>mimeticus</i>	145
<i>oneili</i>	145
<i>parvidens</i>	149
<i>rhodesiæ</i>	145
<i>Metopius</i>	132
<i>albipectus</i>	134
<i>albo-ornatus</i>	135
<i>discolor</i>	136
<i>erythrospilus</i>	132
<i>latibalteatus</i>	134
<i>nigro-ornatus</i>	133
<i>Minanga</i>	30
<i>serrata</i>	31

O

<i>Obba</i>	169
<i>Odesia</i>	79
<i>longicornis</i>	80
<i>Odontogrypon</i>	90
<i>carinifrons</i>	91
<i>spilonotus</i>	91
<i>Oneilella</i>	141
<i>formosa</i>	141
<i>Ophioneura</i>	84
<i>bidentatus</i>	85
<i>flavomaculatus</i>	84
<i>rufidens</i>	84
<i>Osmophila</i>	77
<i>Osprynchotus</i>	142
<i>capensis</i>	142
<i>ruficeps</i>	142
<i>Oxyjoppa</i>	169
<i>flavobalteata</i>	170

P

	PAGE
<i>Paniscus</i>	101
<i>melanocotis</i>	101
<i>melanogaster</i>	101
<i>Paracollyria</i>	106
<i>flavipennis</i>	107
<i>fumipennis</i>	108
<i>pulchripennis</i>	108
<i>ruficollis</i>	107
<i>Perilitus</i>	29
<i>ruficollis</i>	29
<i>Perithous</i>	109
<i>violaceus</i>	109
<i>Phaisura</i>	170
<i>nigriceps</i>	171
<i>Phalga</i>	107
<i>Philotymna</i>	131
<i>flaviceps</i>	131
<i>Pimpla</i>	114
<i>conchylata</i>	115
<i>hexensis</i>	116
<i>limbata</i>	114
<i>mahalensis</i>	115
<i>melanospila</i>	115
<i>natalensis</i>	114
<i>properata</i>	115
<i>shawi</i>	114
<i>vipoides</i>	114
<i>Pimplomorpha</i>	95
<i>trilineata</i>	96
<i>Platybracon</i>	52
<i>Platylabus</i>	177
<i>albo-ornatus</i>	179
<i>erythrocephalus</i>	181
<i>maculiscutis</i>	179
<i>nigripalpis</i>	180
<i>rufo-ornatus</i>	177
<i>Plesioexochus</i>	131
<i>rufipes</i>	131
<i>Pleuroneurophion</i>	82
<i>pruinusos</i>	82
<i>trimaculatus</i>	83
<i>Pseudamblyteles</i>	163
<i>erythrospilus</i>	163
<i>maculicaudis</i>	164
<i>peringueyi</i>	163
<i>Pycnostigmus</i>	17
<i>rostratus</i>	17

R

<i>Rhynchectastes</i>	102
<i>violaceipennis</i>	103
<i>Rhynchotrevoria</i>	125
<i>rostrata</i>	125
<i>Rhogas</i>	71
<i>melanocephalus</i>	71
<i>melanocerus</i>	71
<i>Rhoophilus</i>	17
<i>loewi</i>	17

	PAGE
<i>Ricrena</i>	104
<i>pallidipennis</i>	105
<i>Rossella</i>	176
<i>violaceipennis</i>	176

S

<i>Schizobracon</i>	70
<i>ornatipennis</i>	70
<i>Schonlandella</i>	39
<i>fulviventris</i>	40
<i>testacea</i>	39
<i>Scopesis</i>	132
<i>Sphimédia</i>	106
<i>Skeatia</i>	153
<i>annulipes</i>	153
<i>Spilopimpla</i>	114
<i>rufithorax</i>	114
<i>Spinaria</i>	90
<i>Stenaulax</i>	143
<i>niger</i>	145
<i>pilosulus</i>	143
<i>rufipes</i>	144
<i>Stenomeris</i>	154
<i>xanthopus</i>	154
<i>Stictiophion</i>	85
<i>nigricans</i>	87
<i>rufipes</i>	86
<i>Syntomomelus</i>	68

T

<i>Telerda</i>	75
<i>maculiceps</i>	76
<i>nigriceps</i>	76
<i>Trevoria</i>	125

	PAGE
<i>Trichomma</i>	88
<i>brevipenne</i>	88
<i>cariniscutum</i>	88
<i>Tosquinetia</i>	169
<i>Trigastrotheca</i>	32
<i>trilobata</i>	32

V

<i>Vipio</i>	59
<i>fumipennis</i>	64
<i>longicaudis</i>	65
<i>maculiceps</i>	62
<i>natalensis</i>	63
<i>nigripalpis</i>	63
<i>nigronotatus</i>	60
<i>pallidinervis</i>	61
<i>quinqumaculatus</i>	66
<i>sexfoveatus</i>	67
<i>spilocephalus</i>	66
<i>stictonotus</i>	64
<i>tinctipennis</i>	61
<i>trimaculatus</i>	60

X

<i>Xanthephialles</i>	118
<i>oculatus</i>	118
<i>Xanthopimpla</i>	110
<i>appendiculata</i>	111
<i>natalensis</i>	110
<i>Xenolytus</i>	154
<i>rufipes</i>	154

Z

<i>Zonocryptus</i>	137
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3.—*Contributions to South African Vertebrate Palæontology.* No. 1.*On the Remains of Erythrosuchus africanus*, Broom.

By R. BROOM, M.D., D.Sc.

(Plate IV.)

SOME years ago Mr. Alfred Brown discovered at Oorlog's Fontein, a few miles to the east of Aliwal North, the remains of a large reptile in beds which belong to the Upper Beaufort age. The bones were presented to the South African Museum, and on examination proved to be those of a large Phytosaur. A preliminary account was recently published in the Records of the Albany Museum, and the name *Erythrosuchus africanus* was given to the new form.

The remains represent only a small part of the skeleton, but as there can be no doubt that they all belong to one individual, and as they are singularly well preserved they form an important addition to our knowledge of the Phytosauria. The bones which have been identified are the right scapula and coracoid, the right humerus, radius, and ulna, the right ilium, pubis, and ischium, the larger portion of the left ilium, four consecutive dorsal vertebræ, one vertebra possibly cervical, two caudal vertebræ with chevrons, and numerous ribs. Besides these there are numerous fragmentary remains—portions of vertebræ and pieces of the skull. There is also a small bone which I believe to be a dermal ossification, but it shows no evidence of pitting.

In the absence of the skull there might seem to be a little uncertainty of the order to which the remains belong, but as the ilium is almost identical with that of *Belodon*, and the other bones somewhat like, I think there can be little doubt that *Erythrosuchus* belongs to the Phytosauria.

SCAPULA AND CORACOID.

The scapula is of large size, and in general appearance somewhat resembles that of the Anomodonts. The total length of the bone is

485 mm., and it is only gently curved. The upper end is broad and flat, and measures 205 mm. in width, and is 55 mm. thick. The top of the scapula is antero-posteriorly slightly concave behind and slightly convex in front. Transversely the whole top of the bone is somewhat concave and rough, from which we may infer that there was a large cartilaginous suprascapula. From the broad upper end the bone gradually narrows down to near its middle, where it measures only 87 mm. across and is 45 mm. thick. Immediately below the narrowest part it broadens out towards a fairly well-developed acromion. Unfortunately the acromion process is missing, and it is thus impossible to say how large it was, but, judging from the curvature of the anterior margin of the bone, it is possible that about 30 mm. is missing. In this case the width of the bone at the acromion would be about 120 mm. About 40 mm. below the middle of the bone there is on the posterior edge a very distinct muscular impression. The lower end of the scapula is made up of a large and very deep glenoid portion, and a flat anterior portion for articulation with the coracoid. The greatest antero-posterior length of the lower end is 174 mm. The width of the glenoid portion is 146 mm. Anterior to the articular end, and below the acromion region the bone is markedly concave on its outer surface. On the inner surface there is also a deep groove in front of the glenoid portion of the bone. Near the middle of the inner side there is a large muscular impression.

Compared with the scapula the coracoid is unusually small, and in its proportions recalls that of *Herpetosuchus*. Fortunately it is practically perfect, though, owing to its attachment to the scapula, the inner side has not been fully displayed. It is irregularly semicircular in shape, and the outer surface is moderately flat. About midway between the anterior and posterior ends, and not far from the glenoid border, there is a large rounded coracoid foramen. The maximum length of the coracoid is about 185 mm., and the greatest width 133 mm. The foramen is about 25 mm. in diameter. In front the bone varies in thickness from 10 to 30 mm., but posteriorly it gradually widens out towards the glenoid portion, where its maximum thickness is 115 mm. The inferior and posterior angle of the bone is rough and excavated, and has evidently been covered by a large piece of cartilage. The inner surface is deeply excavated. There is no trace of a precoracoid.

I am not aware that any shoulder girdle has been figured which very closely resembles that of *Erythrosuchus*. In *Belodon* the scapula is not unlike that of the African genus, but the bone is much lighter

and the upper end is not nearly so expanded. On the posterior edge there is a similar muscular impression above the glenoid cavity. The coracoid of *Belodon* differs from this one in having the foramen formed partly by the scapula. In size and shape there is, however, a slight similarity between the genera. In *Erythrosuchus* the bone is, as is the case with the other bones which we can compare, very much more heavily built. In *Herpetosuchus* the coracoid and scapula bear a slight resemblance to those of *Erythrosuchus*. In *Stagonolepis* the resemblance is apparently considerable. The coracoid foramen is entirely in the bone, and the general shape is like that of *Erythrosuchus*. The scapula of *Stagonolepis* has also a fair resemblance to that of the South African genus, though it is apparently more slender. In both forms the coracoid is sometimes found anchylosed to the scapula, but in *Erythrosuchus* the coracoid shows no evidence of ankylosis, being indeed somewhat displaced from its true position.

HUMERUS.

The right humerus has been preserved in almost perfect condition. It is extremely massive, and at first sight recalls the humeri of the Anomodonts or of *Pareiasaurus*, but careful examination shows this resemblance to be only superficial. When viewed from the front the bone is dumb-bell shaped, with the proximal and distal ends greatly expanded, and the middle portion slender. The proximal end is moderately flat in the centre, but curves slightly downwards at the outer and inner ends. It is about 50 mm. thick throughout, and has a well-marked groove along its entire length: the surface is very irregular, and there can be little doubt that there was on the end of the bone a pad of cartilage probably 30-40 mm. in thickness. The main axis of the proximal end makes with the main axis of the distal an angle of about 30°. The width of the upper end is 230 mm. From its outer end and almost at right angles to it there passes forward a thick, well-developed, delto-pectoral ridge. This is continued downwards to about the middle of the bone, where it ends abruptly almost exactly as in *Dicynodon*. In its upper part the ridge is 71 mm. thick, but it gradually thins down, and ends in a moderately sharp edge. The anterior surface of the delto-pectoral ridge is fairly smooth and rounded. In front a deep hollow is formed between the ridge and the main part of the humerus. The narrow part of the shaft is 77 mm. wide and 48 mm. thick. There is no trace of either an endo- or ecto-condylar foramen. The narrow middle portion rapidly widens to the distal end, and here again there must have

been a very thick pad of cartilage ; in fact, the whole articular region must have been cartilaginous. Both in front and behind the distal portion is moderately flat, but there is a distinct rounding of the posterior part of the outer condyle. A shallow groove runs down the back of the bone between the two condyles, and on the outer margin of the condyle there is a well-marked narrow groove. The width of the distal end of the humerus is 190 mm. The thickness of the outer condyle is 78 mm., and of the inner 70 mm.

The humerus of *Belodon* is very different in its proportions to that of *Erythrosuchus*, the former being slender with ossified articular ends, the latter massive with cartilaginous ends. Apart, however, from this the two bones are in structure essentially similar. The delto-pectoral ridge is very small in *Belodon*, but bears the same relation to the end of the bone as does that of the South African genus. The distal end of *Belodon* is small, but also has a groove on the outer side of the external condyle. The humerus of *Stagonolepis* is not well known. Huxley figures three humeri, but the figures are indifferently executed, and the descriptions not very satisfactory. From his Fig. 6, Plate X., it is clear that there is a large deltoid ridge as in *Erythrosuchus*, and there is evidently also a groove on the outer side of the external condyle. It would thus appear that the humerus of *Erythrosuchus* resembles more closely that of *Stagonolepis* than that of *Belodon*, but even here the resemblance is not very close, as the humerus of *Stagonolepis* is slender.

RADIUS AND ULNA.

The right radius and ulna were fortunately found side by side, so that there can be little doubt as to which is the proximal end of the bones.

The radius is moderately straight, with a fairly uniformly thick shaft, and considerably expanded at both ends. The proximal end is narrower than the distal but much broader. When viewed from above it presents an elongated elliptical shape, being 107 mm. in breadth and 58 in thickness. It is fairly flat but excavated in the centre, and with the outer and posterior corner prominently developed. It was doubtless covered by a thick pad of cartilage. About 50 mm. below the top of the bone there is on the anterior side a well-developed muscular impression, probably for the biceps. The distal end is moderately rounded, being 86 mm. by 73 mm. The surface is flat, but very rough for the attachment of the pad of cartilage. The shaft slopes regularly outwards to the distal end except

on the anterior and inner side, where it is rounded. The narrowest part of the shaft is 45 mm. by 36 mm., and the total length of the bone is 246 mm.

The ulna is about the same length as the radius, but has the proximal end very much more strongly developed, and the distal end more feebly. The total length is 256 mm. The narrowest part of the shaft is about 85 mm. from the distal end. Here it measures 50 mm. antero-posteriorly and 30 mm. transversely. From this point the shaft gradually widens, but keeps moderately thin to about 60 mm. further up; then it rapidly widens and thickens to the proximal end of the bone. There is no distinct olecranon process, but the end is of large size. Antero-posteriorly it measures 110 mm., and transversely 109 mm. It is slightly concave in the centre, but otherwise somewhat flat. The end is irregularly triangular, the anterior corner being continuous with the anterior edge of the shaft. The lower end measures 80 mm. by 58 mm. On the outer side of the lower part there is a large roughened patch which may have been for a ligament.

ILIUM, ISCHIUM, AND PUBIS.

The three bones of the right side of the pelvis are in an almost perfect state of preservation. They were found lying together, but the pubis was considerably displaced. The greater part of the ilium of the left side is also preserved.

The ilium is so very like that of *Belodon* that had no other part of the skeleton been known one would certainly have referred the South African remains to that genus. The lower part forms an enormous acetabulum, and gives articulations to the pubis and ischium, and with them completely closes the cavity. The articular surface for the pubis makes with that for the ischium an angle of about 115° . The surface for the pubis is 110 mm. in length and 45 mm. at its greatest width. The surface of the ischium is 145 mm. in length and 55 mm. in breadth. The acetabular portion of the ilium forms a large depression, which occupies about half of the outer surface of the bone. It is bounded above by a very prominent ridge of bone, which rises about 73 mm. above the depression of the acetabulum, and about 40 mm. above the general level of the upper part of the ilium. The ridge, which is nearly in the line joining the anterior pubic portion and the posterior iliac crest, is about 80 mm. in length, and its highest point is situated 150 mm. from the lowest part of the ilium, and 105 mm. from the iliac crest.

The acetabular depression is posteriorly not marked off distinctly from the general iliac surface, and in almost the whole posterior half the surface of the bone is so smooth that it is unlikely to have been covered with cartilage and to have taken any part in the articulation of the femoral head. Most of the anterior half has, however, been covered with cartilage. The greatest breadth of the lower part of the ilium is 205 mm. Above the articular portion the bone becomes constricted and measures only 133 mm. Immediately above the narrow portion it widens rapidly to form the iliac crest. As in *Belodon* most of the crest lies behind the plane of the acetabulum. It measures in extreme length 280 mm. The anterior portion of the crest is short, rounded externally, and covered with fine grooves radiating from a centre near the supra-acetabular ridge, similar to those seen on the iliac crest of *Belodon*. The posterior part of the crest is a thick rounded portion which passes backwards 155 mm. from the point of articulation with the ischium. Between the anterior and posterior ends the iliac crest is thin and has a slightly convex outline in front and a slightly concave one behind. The only marked differences between this ilium and that of *Belodon* are that the former is stouter, has the posterior notch considerably deeper, and the articular surfaces for the pubis and ischium very much thicker. In *Stagonolepis* the ilium differs in having the posterior portion of the crest small. On the inner side of the ilium are two large articular surfaces for the two sacral ribs. The anterior is the larger and is situated opposite the deep depression immediately below the supra-acetabular ridge; the posterior adjoins the anterior and extends out a little distance on the posterior part of the ilium.

The ischium is a large flattened bone of an almost semicircular shape. The anterior part is much thickened and expanded to form a portion of the acetabulum and to articulate with the ilium. The lower portion of the anterior border is very thin where it articulates with the extra-acetabular portion of the pubis. The thickest part of the acetabular region measures 93 mm. The greater part of the external surface of the ischium is more or less concave. From the acetabular portion a strong ridge runs backwards near the upper edge of the bone; below this there is a well-marked depression, and from this there spread out well-marked radiating bony fibres. A deep groove extends downwards, backwards, and inwards from the depression, and forms a notch on the lower border of the bone. Otherwise the surfaces are moderately flat. The breadth behind the acetabulum is 162 mm., and at the broad portion behind the

inferior notch 137 mm. The greatest length is 310 mm. The ischium resembles in its anterior half that of both *Stagonolepis* and *Belodon*, but differs from them in having the posterior part expanded.

The pubis is an extremely interesting bone, not only because it gives us a clue as to how the tri-radiating pelvis was formed from the plate-like type, but also because it for the first time enables us to fully understand the Phytosaurian pelvis. The pubis may be described as an irregular, oblong-shaped bone with one corner bent back so that the inner edge of the upper part is nearly at right angles to the inner edge of the lower. Fortunately it is nearly perfect, only a part of the inferior end and a little piece of the upper and outer angle being missing. The upper border forms an articulation with the ilium and with the ischium, the acetabular portion being smaller than in the case of the other bones. The greatest thickness of the upper end of the pubis is 67 mm. Close to the inner end of the iliac articulation there is a moderate-sized oval pubic foramen; it is formed entirely by the pubis, but is almost at the edge of the bone. The infra-acetabular portion, which articulates with the ischium, measures about 85 mm. The symphyseal portion of the pubis has the upper part nearly at right angles to the lower, and owing to this bend the latter points almost directly downwards. Were the pubis flat it would resemble the ordinary plate-like type of the earlier reptiles, and so would the ischium; the difference is almost entirely due to this bending of the pubis. Perhaps we have in the notch in the symphyseal portion of the ischium the first indication of a tri-radiating type beginning to form from the plate-like type. As it is, *Erythrosuchus* must be regarded as having a pelvis which is a slight modification only of the plate-like type. The pubis differs considerably in appearance from that of *Belodon*, in which the lower end is much broader and in which there is not the marked twisting seen in *Erythrosuchus*. Marsh gives a restoration of the pelvis of *Belodon* which would resemble that of *Erythrosuchus* fairly closely were the pubis and ischium bent under more than is the case.

VERTEBRÆ.

There is one well-preserved vertebra which is either a lower cervical or upper dorsal. In general appearance it presents much similarity to the dorsal vertebra of a carnivorous Dinosaur. The centrum is amphiplatyan, about as deep as broad, and considerably

constricted at the middle. In front it measures approximately 100 mm. across and 90 mm. vertically. Posteriorly the articular surface measures 90 mm. across and 90 mm. vertically. The antero-posterior length of the body is 60 mm. The arch has a well-developed spine and a fair-sized transverse process which is directed outwards and downwards; it articulates with the centrum as in the Dinosaurs and the suture remains distinct. The transverse process has a flattened end for the articulation of the rib. The main part of this articular surface is of a broad oval shape, and anteriorly is continued downwards to join one nearly as large on the anterior edge of the centrum. From the appearance of this surface it is manifest that the rib was single headed, but with the head broad and the middle portion very slender. In *Belodon* and *Stagonolepis* the ribs are double headed. The greatest width across the transverse processes is 130 mm. The zygapophyses are situated close together, and are directed upwards and inwards or downwards and outwards.

There are also a series of four larger dorsal vertebræ belonging probably to the lower dorsal region. These resemble each other closely, but differ from the vertebra above described in a number of points. In the first and second the body measures antero-posteriorly 70 mm., and in the third 67 mm. The width of three of them averages 73 mm., and the depth 90 mm. The arches differ from that of the upper vertebra chiefly in being longer antero-posteriorly, in having a larger spine, and in having the transverse process slightly different. In the second of the series the greatest antero-posterior measurement is about 120 mm. The width at the zygapophysis is 50 mm., and across the transverse processes 130 mm. The end of the transverse processes differs from that of the anterior vertebra in having the facet for the head proper of the rib shifted from the centrum to the arch. The process has thus a large rounded end for the upper part of the end of the rib, and an equally large lower facet for the head proper. The two articular surfaces are connected by a narrow bridge. None of the figured vertebræ of *Belodon* and *Stagonolepis* agree very closely with the known vertebræ of *Erythrosuchus*, but this may be in part due to the vertebræ being from different regions. In both of the European genera the transverse processes seem to be, as a rule, longer. A good many vertebræ of *Stagonolepis* were figured by Huxley, but not well enough to be of much value for purposes of comparison.

Of the sacral vertebræ the only parts satisfactorily preserved are the ribs. Of these the anterior is the larger, its end measuring

113 mm. in depth and 85 mm. in width. The posterior one is 78 mm. in depth and 104 mm. at its greatest width.

There are two fairly well preserved caudal vertebræ with chevrons. The anterior of the two has a body which is 46 mm. wide, about 61 mm. deep, and 48 mm. long. There is a small rib which is not anchylosed to the centrum, and arises mainly from the centrum but also from the base of the arch. The second of the two vertebræ appears to have the rib anchylosed or merely a transverse process. The chevron of the first of the two vertebræ measures 110 mm. ; it is forked at the upper end, and below this it is a uniform fairly thick rod of bone.

I do not think it is advisable to speculate on the possible nature of the fragmentary skull remains. Doubtless in course of time a good skull will be found. For many years there have been in the South African Museum two small fragmentary bones which now prove to be portions of the pelvis of *Erythrosuchus*.

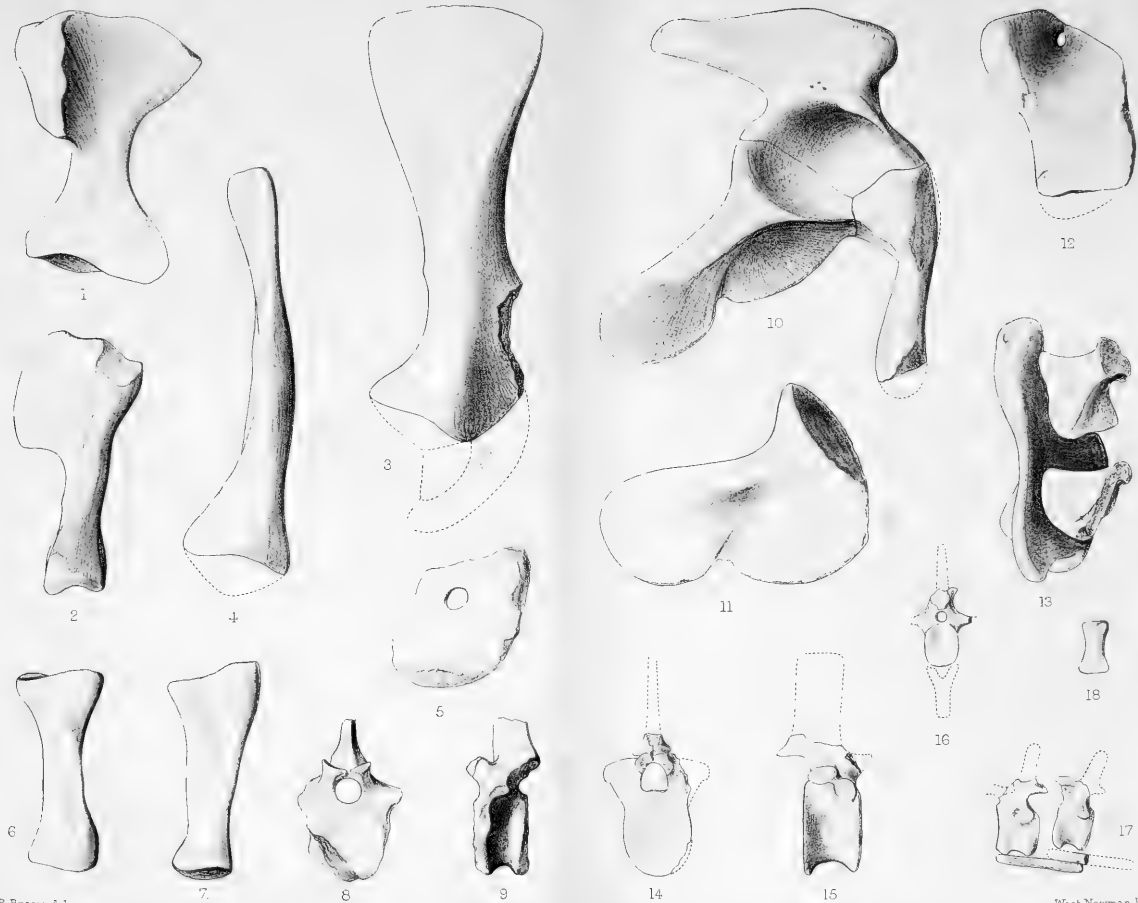
I am much indebted to Miss M. Wilman and Mr. A. L. du Toit for assistance in the development of the bones.

EXPLANATION OF PLATE IV.

FIG.

1. Front view of right humerus.
2. Inner view of right humerus.
3. Outer side of right scapula, with coracoid restored.
4. Posterior view of right scapula.
5. Outer side of coracoid.
6. Front view of right radius.
7. Inner view of right ulna.
8. Front view of anterior dorsal (or lower cervical) vertebra.
9. Left side of anterior dorsal vertebra.
10. Outer view of pelvic bones of right side.
11. Outer and under view of right ischium.
12. Front view of right pubis.
13. Upper view of ilium, with sacral ribs slightly displaced.
14. Anterior view of lower dorsal vertebra.
15. Right side of lower dorsal vertebra.
16. Posterior view of caudal vertebra.
17. Left side of two caudal vertebræ.
18. Metacarpal bone.

(All figures are about one-fifth natural size.)



F. Broom del.

West, Newman lith.

Erythrosuchus africanus, Broom.

4.—*New Species of Cleridæ (Coleoptera) in the Entomological Collection of the South African Museum.*—By SIGM. SCHENKLING.

SUB-FAM. CLERINI.

GEN. GYPONYX, Gorb.

GYPONYX ALBOSPARSUS, n. sp.

Brunneus, nitidus, albo-pilosus, capite densissime ruguloso, prothorace sparsim punctato, disco et lateribus rugulosis, elytris rufo-brunneis, antice pallido- et fusco-marmoratis, ad medium usque regulariter striato-punctatis, corpore subtus, antennis pedibusque rufo-brunneis.—Long. 10 mm.—Orange River.

Prothorax one-fifth longer than broad, strongly shiny, with solitary punctures on the disc and a broad longitudinal impression in the middle, in which several longitudinal wrinkles are discernible, the weakly rounded sides of the prothorax very finely rugulose. Elytra reddish brown, becoming somewhat paler posteriorly, the anterior portion up to a little behind the middle irregularly sprinkled with yellow spots, with some darker spots in between, beset also with longitudinal rows of round but not very densely placed punctures, as far as the marmorated portion of the elytra extends. Hind margins of abdominal segments yellow.

GYPONYX SPONSALIS, n. sp.

Niger, longe albo-pilosus, capite dense, prothorace sparsim punctato, illo antice ruguloso, hoc lateribus vermiculatis, elytris regulariter striato-punctatis, antice sanguineis, pone medium fascia flava ad suturam late abbreviata; abdomine brunneo, rufo-marginato.—Long. 15.5 mm.—Southern Rhodesia (Buluwayo).

Head with black palps and antennæ, weakly shiny, densely and distinctly punctate, rugulose in front, especially between the eyes. Prothorax black, opaquely shiny, as long as broad, strongly widened and rounded at the sides, provided in front with a transverse furrow

which is produced posteriorly in the middle, behind this with a weak transverse impression, and on the disc with a distinct longitudinal one in which are several longitudinal wrinkles and deeper punctures, the surface otherwise only extremely sparingly punctuated, weakly but densely longitudinally wrinkled at the sides. Elytra blood-red in anterior third, then black, provided behind the middle with a straight yellow transverse band, which is abbreviated and rounded off a long way from the suture and also leaves a narrow black margin along the lateral edge; elytra beset over almost the entire surface with regular longitudinal rows of large, very densely placed, round punctures, the punctuation becoming irregular only shortly before the apex. Sternum shiny black, very finely punctured. Abdomen brown, the margins of the segments red. Whole body clothed with long yellow hairs, which are very dense, particularly on the legs.

This handsome beetle differs in its coloration from all the species of the genus hitherto known, and resembles some species of the likewise mainly African genus *Phlæocopus*, which possesses, however, quite differently constructed antennæ and palps.

GYPONYX GEMELLATUS, n. sp.

Pallidus, albo-pilosus, capite prothoraceque nigro-piceis, dense subtiliter punctatis, hoc transversim et longitudinaliter sulcato, elytris pallidis, fusco-maculatis, striato-punctatis, striis pro parte gemellatis.—Long. 7.5 mm.—Cape Colony (Ookiep).

Very like *G. indicus*, but smaller and relatively broader. The punctures of the elytra are approximated in pairs posteriorly, at least those alongside the suture, the interspaces between these rows of punctures are darker coloured, giving the elytra a striped appearance, besides which several irregular dark brown spots occur also in front. The under side and the legs are uniformly yellow.

GYPONYX ELEGANS, n. sp.

Pallidus, albo-pilosus, capite prothoraceque flavo-testaceis, illo densissime subtilissime punctulato, hoc transversim et longitudinaliter sulcato, elytris seriatim punctatis, fusco-irroratis, pedibus longis, pallidis, brunneo nigroque annulatis et maculatis.—Long. 6 mm.—Transvaal (Lydenburg District).

A very slender pale form related to *G. indicus*. Head brownish yellow, very densely and extremely finely punctured, the frons broadly impressed. Prothorax reddish yellow, with a dark longi-

tudinal stripe on each side, $1\frac{1}{2}$ times as long as wide, the sculpturing like that of *G. pallidus*, Schklg., the areas of the prothorax, however, much more elevated, so that five distinct tubercles are visible, two pairs close beside one another and a single tubercle behind in front of the scutellum, the sides of the prothorax deeply impressed posteriorly. Elytra almost up to the apex with rows of fine punctures, yellow, with irregular brownish dots. Under side of the remarkably long legs pale yellow, the femora with brown terminal half, the tibiæ brown to black at the base, also shortly before the apex with a blackish ring.

Differs from the related species *indicus*, *gemellatus*, and *pallidus* by the long prothorax.

Synoptic Table of the Genus GYFONYX, Gorb.

1. Elytra not uniformly blood-red or dark red in front.
2. Prothorax not divided into convex areas by longitudinal and transverse grooves
3. Elytra not unicolorous.
4. Prothorax with six very distinct tubercles.
5. Upper side yellow, elytra with four (var. *6-punctatus*, Schklg., with six) black points; legs unicolorous yellowish 17. *nodicollis*, Boh.
- 5a. Prothorax dark, the tubercles yellowish brown; elytra green, yellowish and black marmorate; legs tawny maculate 18. *viridescens*, Hintz.
- 4a. Prothorax without six distinct tubercles.
6. Elytra in the forepart unicolorous yellowish brown, the apex black (sometimes with a large pale spot) 16. *apicalis*, Chevz.
- 6a. Elytra otherwise coloured.
7. Elytra with distinct pale spot or pale band at or before the apex.
8. Legs and upper side black, elytra each with three pale spots
8. *sexnotatus*, Boh.
- 8a. Legs brownish or yellowish.
9. Elytra brown, each with three sharply marked pale spots.
10. Elytra with regular rows of punctures 9. *sexmaculatus*, Hintz.
- 10a. Elytra with irregular, finely rugose punctuation 10. *weisei*, Hintz.
- 9a. Elytra without six sharply marked pale spots.
11. Legs unicolorous, at most with paler tarsi.
12. Pale middle band on elytra very distinct; before the apex a round pale spot
5. *abyssinicus*, Gorb.
- 12a. No distinct middle band; before the apex a narrow, band-like, winding pale line 1. *chinensis*, F.
- 11a. Legs not unicolorous, the base of the femora always paler.
13. Elytra punctated almost to the apex, the punctures partly arranged in double rows 2. *natalensis*, Boh. (*Clerus*).
- 13a. Punctuation of elytra reaching only up to or a little beyond the middle.
14. Elytra in front with dark spots on pale ground; prothorax brown or black.
15. Yellow coloration extending almost over two-thirds of the elytra and provided with few dark spots besides the dark punctures.
3. *retrocinctus*, Chevz.

- 15a. Yellow coloration extending only up to the middle of the elytra and provided with more or less large dark brown spots, besides the brownish black punctures 4. *brunneo-punctatus*, Hintz.
- 14a. Elytra yellow, with a dark longitudinal dab alongside the margin and almost entirely smoky grey in the posterior half; prothorax red 7. *mitis*, Kl.
- 7a. No pale spot before the apex of the elytra 6. *albosparsus*, Schklg.
- 3a. Elytra unicolorous.
16. Whole upper surface unicolorous.
17. Elytra irregularly finely rugulose, without rows of punctures 10. *rugosus*, Hintz.
- 17a. Elytra with rows of punctures, which are rarely indistinct.
18. Upper side brick-red 11. *miniatus*, Hintz.
- 18a. Upper side not red.
19. Prothorax with three weak tubercles; legs unicolorous 12. *flavus*, Hintz.
- 19a. Prothorax without tubercles; femora red with black apex, tibiæ and tarsi brown 13. *punctatus*, Hintz.
- 16a. Head and prothorax pitchy black, elytra yellowish or greenish brown 14. *virescens*, Chevr.
- 2a. Prothorax divided by several longitudinal and transverse furrows into more or less convex areas.
20. Prothorax as broad as or broader than long.
21. The punctures of the elytra along the suture arranged in double rows posteriorly 18. *gemellatus*, Schklg.
- 21a. Elytra without double rows of punctures.
22. Legs simply yellow; elytra indistinctly punctate 19. *pallidus*, Schklg.
- 22a. Legs yellow with dark knees; elytra more distinctly punctate 17. *indicus*, F.
- 20a. Prothorax much longer than broad, with a dark longitudinal stripe along the sides 20. *elegans*, Schklg.
- 1a. Elytra blood-red or dark red in front.
23. At least half of the elytra red, the white middle band continuous, divided at most by the dark suture 15. *tricolor*, Schklg.
- 23a. One-third only of the elytra red, in the other two-thirds a yellowish white band, which is strongly abbreviated and rounded off at the suture 16. *sponsalis*, Schklg.

GEN. THANASIMUS, Latr.

THANASIMUS PECTORALIS, n. sp.

Niger, nigro-crinatus, capite prothoraceque subtiliter rugulosis, fronte carinata, elytris antice grosse seriatim foveolatis, dein seriatim punctatis, antice sanguineis, fasciis duabus, una mediana, altera ante apicem, flavido-sericeis, pectore abdominisque segmentibus primis rufis.—Long. 8 mm.—Rhodesia (Sebakwe).

Shorter and broader than the other African species of *Thanasimus*, with red bases of the elytra known to me. Head and prothorax entirely black, finely rugulose, frons with a fine but distinct and long keel, antennæ and palps black. Elytra blood-red almost to the middle, then black, on the middle a narrow curved transverse band and before the apex a broad one abbreviated at both ends, densely

clothed with yellowish-white hairs; up to the middle band with rows of coarse pit-like punctures, the punctures behind the middle band, becoming smaller, disappearing before the apex. Legs black, with long white pubescence. Metasternum and the first abdominal segments red.

Synoptic Table of the African Species of Thanasimus with red base of the elytra.

1. Head black.
2. Prothorax black.
3. Head and prothorax coarsely punctate; antennæ yellowish brown; under side black *capicola*, Westw.
- 3a. Head and prothorax finely rugulose; antennæ black; metasternum and base of abdomen red *pectoralis*, n. sp.
- 2a. Prothorax not entirely black.
4. Prothorax red, black in front; band before the apex white; under side black *mutilloides*, Hintz.
- 4a. Prothorax black, red in front; whole apex of elytra yellowish white; abdomen reddish brown, with black apex *weisei*, Hintz.
- 1a. Head red.
5. Elytra with red basal half, white middle band, and a white shoulder-spot; length 14 mm. *versicolor*, Chev.
- 5a. Elytra in front, red along the suture only, spotted with black, two bands and the apex with yellowish-white pubescence; length 4·5 mm. *hintzi*, Schklg.*

GEN. STIGMATIUM, Gray.

STIGMATIUM RHODESIANUM, n. sp. (Sub-Gen. STIGMATIUM, s. str.)

Convexum, opacum, nigrum, nigro-setosum, prothorace elytrorumque basi rufis, elytris albo-maculatis, capite subtiliter punctulato, prothorace dense granuloso, elytris antice grosse seriatim punctatis, corpore subtus, antennis pedibusque nigris.—Long. 7·5 mm.—Rhodesia (Sebakwe).

Head tolerably finely and densely punctate, with solitary black hairs, in front with longer white hairs, antennæ black, distinctly serrated. Prothorax red, densely granulated, with a sharp transverse impression behind the anterior margin, beset with longer black and some paler hairs. Elytra red in front for about one-fifth, then black, in front with very strong, somewhat irregular rows of punctures, the punctures indistinct behind the middle, the interspaces and the suture beset with solitary granules; on the black part of the elytra are four whitish-yellow hairy spots, namely, one on each side of the margin a little before the middle, a common

* This name was proposed by me in "Genera Insectorum, Fam. Cleridæ" (Brussels, 1903), for *Thanasimus bifasciatus*, Hintz (1902), as the latter name had already been given by Kraatz in 1900 to a species from Ceylon.

spot somewhat more posteriorly on the suture (perhaps this median spot sometimes coalesces with the above-mentioned marginal ones to form a curved transverse line), and a larger, bandlike common spot before the apex; the elytra bear solitary black setæ, which are close together, particularly near the base. Under side, antennæ, and legs black, the latter clothed with long white hairs.

Comes near to *Stigm. setigerum*, Schklg., from Obok, which is a true *Stigmatium* and not a *Phæocyclotomus* (as erroneously stated in Ann. Mus. Civ. Genova, serie 2, vol. xix., 1899, p. 548).

GEN. APOPEMSIS, Schenckl.

APOPEMSIS SIMPLEX, n. sp.

Nigro-brunnea, dense flavo-pilosa, prothorace nigro, dense subtiliter punctulato, lateribus aureo-villoso, elytris sulcatis et transversim punctatis, ultra medium macula communi e pilis albis formata, pedibus rufo-brunneis, abdominis segmentibus rufo-marginatis.—Long. 9 mm.—Southern Rhodesia (Manica, Christmas Pass).

In this new species the grooves of the elytra are not so deep as in *Apop. pulchra*, Schklg. (Stett. Ent. Zeit., 1903, p. 19), but for the rest the species agree with the latter in all important characters. Head brownish black, with long and dense yellow pubescence, labrum yellow, antennæ black at base, the club formed of the seven last lamellate joints and yellowish brown, with solitary long yellow hairs. Prothorax black, much broader than long, densely and very finely punctulate, at the sides with a deep cavity, before which is a deep tuft of golden-yellow hairs. Elytra blackish brown, with dense yellowish-grey pubescence, and behind the middle, with a common spot of white hairs, weakly grooved, the grooves with from transverse to quadrate punctures, becoming smaller posteriorly. Sternum and legs reddish brown, the femora paler on the under side; abdomen reddish brown, the apex and the hind margins of the segments pale red.

5.—*Descriptions of Species of Parasitic Hymenoptera, chiefly in the Collection of the South African Museum, Cape Town. (Second Paper *)*.—By. P. CAMERON.

[Species marked with an asterisk are not in the Collection of the South African Museum.]

BRACONIDÆ.

APANTELES.

APANTELES CAPENSIS, sp. nov.

Black; the sides of the three basal segments of the abdomen and the legs rufo-testaceous; the hinder coxæ, apex of hind tibiæ broadly and the hind tarsi, except the basal two joints at the base, black; the wings hyaline, with black nervures. ♀ and ♂.

Length 4 mm.

Cape Town. Several specimens.

First abdominal segment distinctly longer than broad; the second and third broader than long; the second, if anything, longer than the third; the basal two segments aciculated, a smooth line down the centre of both; the second with an oblique furrow on either side at the base, enclosing a triangular space; the other segments (third and following) are smooth and shining. Terebra short; the hypopygium cultriform. Metanotum opaque, coarsely aciculated; the mesonotum and scutellum smooth, shining, as are also the pleuræ; the breast covered with a pale pile. The hypopygium projects slightly beyond the dorsal surface of abdomen. Spurs of hind tibiæ extending shortly, but distinctly beyond the middle of metatarsus. Tegulæ fuscous-testaceous. First abscissa of cubitus straight, oblique.

Belongs to Marshall's Section 3, in André's *Species*, iv., 405.

* First Paper, vol. v., 1906, pp. 17-182.

APANTELES BASIMACULA, Cam.,

Rec. Alban. Mus., i., pt. iii., 1904, p. 173.

May be known by the basal two segments of the abdomen being entirely whitish testaceous; *A. maculitarsis*, Cam., *l.c.*, p. 173, has the basal segment of the abdomen as broad as long, and all the segments are smooth and shining, as is also the metanotum.

CHALCIDIDÆ.

LEUCOSPINÆ.

LEUCOSPIS, Fabr.

LEUCOSPIS ORNATA, West., Germ. Zeits. für Ent., i. 252.

Schletterer, Berl. Entom. Zeits., xxxv., 1890, p. 219.

Cape Colony. Hex River.

The amount of the rufous and yellow colour probably varies. There is a ♂ in the Collection which has the head and thorax almost entirely black, the rufous colour being very scanty, and the yellow only represented by a line above the base of the pronotum and on the apex of the scutellum. The legs, too, are darker coloured.

I have in my Collection from the Cape another species which cannot well be confounded with any of the South African species.

* LEUCOSPIS AFRICANA, sp. nov.

Black, but the under side of the antennal flagellum, a short line on the base of the pronotum in the centre uniting with the yellow transverse one, a triangular one at the sides at the end of the yellow line, its apex being united to the tegulæ, a line on the apex, the tegulæ, a broad line along the sides of the mesonotum, a triangular mark on the apex of the latter, the apex of the scutellum, the post-scutellum, the tubercles, a large triangular mark, almost covering the metapleuræ and the basal abdominal segment to beyond the middle are red; while a line across the middle of the pronotum, a curved one on the apex of the scutellum, a broader one on the sides of the metanotum, and one on the apices of the basal two abdominal segments are yellow. Legs red, the 4 anterior coxæ for the greater part, the fore femora on the basal half, the middle on the basal two-thirds above, the outer side of the hind femora, except above, where

they are red, and a yellow line above the teeth—the line broadest at the base. Wings fuscous-violaceous, the nervures black. ♀.

Length 6 mm.

Apex of ovipositor reaching close to the apex of the basal third of the second abdominal segment. Apex of pronotum with 2 transverse keels; the basal one is much stouter than the apical, and there is a short one in the middle at the yellow line. Middle of apex of scutellum with a raised border. Sides of post-scutellum stoutly dentate. Eyes slightly converging below; the hind ocelli separated from each other by a distinctly greater distance than they are from the eyes. Face and clypeus closely, strongly striated; the sides of the front are more irregularly striated; the vertex rugosely punctured, as is also the thorax; both are thickly covered with white pubescence; the metapleuræ more finely and closely punctured than the rest. Hind femora with 3 short stumpy basal teeth close to each other and 5 stout longish apical ones, all widely separated, the lower one more widely separated from the one above it than the others are from each other; it is also half the size. Basal joints of flagellum clearly longer than thick. Malar space as long as antennal scape.

The first abdominal segment is twice as long as it is wide at the apex; there is a keel down its centre; this keel has a transverse one at its base. Hind femora fully twice longer than thick; very shining, closely but not strongly punctured and covered sparsely with white pubescence. The first abdominal segment clearly separated from the second.

In the table of Schletterer's (Berl. Ent. Zeits., xxxv., 163) this species would come in near *L. tricarinata* and *elegans*. It is one of the smaller species.

CHALCIDIDINÆ.

Chalcidini.

CHALCIS, Lin., *sec.* Kirby.

The species enumerated below belong to *Chalcis* as limited by Kirby (Journ. Linn. Soc. Zool., xvii., 65) and by Kieffer (Berl. Ent. Zeits., xlix., 1904, 259), but not as limited by Ashmead (Class. of the Chalcid Flies, p. 249); that is to say they have the apex of the scutellum bilobate, while *Chalcis*, Ashm., has it rounded. The latter is identical with *Oncochalcis*, Cam., The Entomologist, 1904, 161. The South African *Chalcis pygni*, Cam. (Rec. Alban. Mus.,

i., p. 312) and *C. ? rotundata*, Cam. (Zeits. f. Hymen. ü. Dipt., 1905, p. 231) belong to *Chalcis*, Ashm. (*Oncochalcis*).

The determination of the Walkerian species is a work of difficulty and uncertainty from the fact that his descriptions refer only to coloration. The account given of the femoral teeth is very indefinite; in the description of *C. amenocles* from Sierra Leone (List of Chalcidites, i., p. 84) they are not even mentioned; in *C. varipes* (Notes on Chalcid., p. 48) they are stated to be "armed beneath with several small teeth"; in *C. polyctor* (Trans. Ent. Soc., 1862, p. 354) they are stated to be armed beneath "with several rather large teeth." According to Mr. W. K. Kirby (Journ. Linn. Soc., xvii., 68), *amenocles*, *varipes*, and *polyctor* (not the species described in The Entomologist, 1841, p. 218, from Sierra Leone, which is stated by Kirby, *l.c.*, to be a different species from the *polyctor* of 1862) are varieties of one species. *C. amenocles*, however, is said to have the hind coxæ black, as is also the case with *polyctor* of 1862; but *varipes* has the hind coxæ red, if the Walkerian description is to be relied upon. It is impossible to clear up the matter from the descriptions alone. I have a specimen from the Cape which agrees fairly well with Walker's description of *amenocles*. The red-legged species of *Chalcis* known to me from South Africa may be separated as follows:—

- | | | |
|----|--|-------------------------|
| 1 | (4) Hind femora red, with a large black mark on the outer side, their coxæ with red in the middle. | |
| 2 | (3) Abdomen red, except for a triangular black mark on the base | <i>natalensis.</i> |
| 3 | (2) Abdomen entirely black.. .. . | <i>melanospila.</i> |
| 4 | (1) Hind femora red, not spotted with black; white at apex. | |
| 5 | (6) Hind tibiæ entirely white | <i>dunbrodyensis.</i> |
| 6 | (7) Hind tibiæ black, white at the apex | <i>melanogastra.</i> |
| 7 | (6) Hind tibiæ black, white, and red. | |
| 8 | (11) Hind coxæ red for the greater part. | |
| 9 | (10) Metanotal area and metanotum smooth and shining, the areola pointed at the apex, coxæ broadly black at the apex | <i>spilopus</i> , Cam. |
| 10 | (9) Metanotum and areola opaque, alutaceous, the areola not sharp-pointed at the apex; the coxæ entirely red | <i>capensis.</i> |
| 11 | (8) Hind coxæ black | <i>amenocles</i> , Wlk. |

The last 3 species may be known by the form of the metanotal area and of the reticulations on the metanotum. In *capensis* the areola extends from the base almost to the apex, is of uniform width, and bears one or two transverse keels, the lateral reticulations are

weak and irregular; in *spilopus* the areola is deep, almost twice longer than wide, the areæ bordering it are wider than long; in what I make out to be *amenocles* the areola is fully 3 times longer than wide and is wider at the base than at the apex; the basal lateral area is triangular, the apex below the base shorter than the length; the area below it is oblique, narrowest on the inner side; that above it is quadrangular, the one below triangular; the hind tibiæ are reddish, with a white band near the base and a wider one at the apex; the 4 front legs are black to near the apex of the femora, there they are white, as they are also at the base of the tibiæ; the rest of them are reddish.

* *CHALCIS NATALENSIS*, sp. nov.

Black, the post-scutellum, the abdomen, except for a large pyriform mark on the base (the narrowed end of the base) extending from near the base of the segment to its apex and a mark in the centre of the apical two segments, bright red; the apex of all the femora, the tibiæ, tarsi, and the tegulæ bright yellow; the hind femora red, a large black oval mark touching the basal yellow one and extending shortly beyond the middle. Wings hyaline, the nervures black.

Length 6 mm. ♀.

Natal.

Apex of scutellum ending in two longish horny, pale-coloured lobes, which are broad at the base, narrowed towards the apex; above them are 2 dense tufts of long silvery pubescence. Metanotum widely reticulated; the areola is long, lanceolate at the base; the sides have a stout longish tooth close to the middle. The central part of the mesopleuræ is reticulated, the base and apex smooth; the former with a row of foveæ, the depressed apex with clearly separated keels. Propleuræ smooth for the greater part; near the centre is a stout oblique keel; the top is weakly, the bottom more strongly, widely striated. Metapleuræ closely rugosely reticulated. Basal segment of abdomen and the base and apex of the others smooth; the central part strongly punctured. The apical segment is roundly narrowed; it is depressed in the centre. On the hind femora are about a dozen teeth; the basal are indistinct and pressed together; the others are more widely separated; the penultimate is separated by a longish space from the last.

This is a larger and stouter species than *C. melanospila*; it may be known by the red abdomen, with the large triangular black mark

on the base, and by the short black basal and the large pale rufous tooth on the sides of the metanotum.

CHALCIS MELANOSPILA, sp. nov.

Black, the 4 anterior femora except for a line at the base above, the tibiæ and tarsi, the apex of the hind femora, the hind tibiæ except behind, where they are black, and the hind tarsi, yellow; the coxæ and trochanters black, the hind coxæ largely red above; their femora red, a large oval mark on the outer side of the latter in the middle and their black teeth; on the hind femora are 13 small, thick black teeth, the basal close together, the apical more widely separated. Wings clear hyaline, the nervures black. ♂.

Length 5 mm.

Cape Colony. Hex River.

Apex of scutellum broadly bilobate, the lobes obscure yellow. The sides of the metanotum on the basal half are roundly depressed, the base and apex forming almost teeth; the central area, except at the top, are strongly transversely striated. Head closely rugosely punctured, more coarsely above than below; in the centre of the face is a smooth and shining plate, which is obliquely narrowed above; the pubescence is long, dense, and white. Pro- and meso-thorax rugosely punctured, more or less reticulated. Basal segment of abdomen smooth, impunctate; the others are strongly punctured, the punctures widely separated; the apex is more finely, closely, and regularly punctured; they are somewhat thickly covered with long, silvery hair. The apex of the scutellum is thickly covered with long, silvery hair. The apex of the pronotum and the base of the mesopleuræ are stoutly striated. Flagellum of antennæ stout, opaque, densely covered with white down. The part below the scutellum is smooth, rufous.

CHALCIS DUMBRODYENSIS, sp. nov.

Black, the tegulæ, the apex of the fore femora broadly, of the middle more narrowly, the 4 anterior tibiæ except for a line in the middle behind, the apex of the hind femora, the hind tibiæ except for a dark rufous band at the base and all the tarsi, bright yellow, the hind femora red; wings hyaline, the nervures black. ♀.

Length 5-6 mm.

Cape Colony. Dunbrody.

Centre of face and clypeus smooth, bordered by distinctly separated punctures; the sides opaque, closely punctured. Vertex closely rugosely reticulated-punctured. Pro- and mesonotum closely rugosely punctured; the apex of clypeus bone-coloured; bilobate, the lobes rounded, the space between them straight, transverse; it is covered all round with long, white hair. Metanotum reticulated; the reticulations wide, square at the base; the central basal area is about two and a half times longer than wide; it is narrowed towards the base; the sides in the middle are broadly, roundly dilated. Propleuræ finely, closely striated above; the middle with a stout keel. Mesopleuræ smooth, except for the usual foveæ at the base. Metapleuræ except on the basal slope closely rugosely striated. Basal segments of the abdomen smooth; the others punctured and covered with white hair in the middle. Femoral teeth short, stout, the basal close to each other and regular; the apical six larger and more widely separated. Hind coxæ closely and somewhat strongly punctured.

CHALCIS MELANOASTRA, sp. nov.

Black, the apex of the fore femora and their tibiæ and tarsi pale yellow; the middle of the tibiæ broadly dark rufous; the hind femora red, their apex yellow, their teeth black; the tibiæ black, a yellow band near the base and a longer one on the apex; the tarsi yellowish. Antennal scape obscure yellowish in the middle. Wings hyaline, the nervures black. ♀.

Length 4 mm.

Cape Colony.

Apex of scutellum bilobate, the lobes short, broad, rounded. Face strongly punctured, without a smooth central plate. Clypeus smooth, with two longish foveæ in the centre. Front and vertex strongly rugosely punctured. The punctuation on the pronotum is closer and more rugose than it is on the mesonotum and scutellum, on which they are somewhat widely separated. Metanotum reticulated; the central area is about three times longer than wide, and is slightly narrowed towards the apex; the sides below are dilated but not greatly; the dilated part becomes wider gradually from the base and apex to the middle. Propleuræ in the middle stoutly irregularly striated, the apex above finely, closely striated. Mesopleuræ smooth and shining, the base and lower part at the base foveate. Metapleuræ closely rugosely

punctured. Abdomen smooth and shining, the apical segments aciculated. Hind femora regularly toothed below; the teeth small, black, and covered with white pubescence.

CHALCIS LEIGHI, sp. nov.

Black, densely covered with long, silvery pubescence; the tegulæ, the four anterior legs, except the coxæ and trochanters, the apex of the hind femora and the tibiæ and tarsi, yellow; the wings hyaline, the nervures black; the hind femora with about ten teeth, the basal short, stumpy, the apical one longer and sharper; those behind it widely separated, short, not very distinct; they are almost hid by silvery pubescence. ♀.

Length 7 mm.

Natal. Durban.

A stout, robust species. Antennal scape slender, shining, sparsely haired below; the flagellum stout, opaque, densely covered with short, white pubescence. Front laterally, and vertex closely rugosely punctured; the sides of the face finely rugose; the central plate smooth and shining, obliquely narrowed above, slightly, gradually narrowed below; the middle of clypeus smooth, the sides with a double row of irregular punctures. Base of mandibles rugose, the apex smooth, shining; there are three short, blunt teeth. Pro-mesonotum and scutellum closely rugosely punctured, more or less reticulated; the scutellum more strongly than the rest; the parapsidal furrows are indicated towards the apex. The two lobes of the scutellum are smooth, shining, placed somewhat low down, roundly narrowed towards the apex; they project over the metanotum, which is widely, irregularly reticulated; there is a row of areæ bordering the base; the areola is depressed, opaque, closely, finely punctured, narrowed at the base, not very clearly defined at the apex, more than twice longer than wide. Propleuræ irregularly aciculated-punctured; a stout curved keel in the middle. The foveæ at the base of the mesopleuræ are shallow, oval; they are on the centre only. Metapleuræ closely, rugosely reticulated. The basal segment of the abdomen is obscurely punctured, shining; the second to fifth are finely aciculated, punctured, with a transverse row of punctures on their apices; the sixth segment is strongly, closely, deeply punctured and covered with silvery pubescence.

GENUS ONCOCHALCIS, Cam.,
The Entomologist, 1904, p. 64.

ONCOCHALCIS MICROLINEA, Walker,
Trans. Ent. Soc., 1862, 372.

A specimen (♂) from Durban is probably this species, which was described under *Chalcis* from Natal. It is black; the tegulæ, apex of femora narrowly, the 4 anterior tibiæ except for along line behind, their tarsi, the base and apex of the posterior tibiæ behind and their tarsi, yellow. There are about thirteen short, stout, closely pressed teeth on the hind femora, of almost equal size. Apex of scutellum broadly rounded, margined. Metanotum closely, irregularly reticulated; its sides rounded, untoothed; the areola is not very clearly defined; it is about four times longer than wide, slightly wider at the base than at the apex, and it bears two irregular transverse keels in the middle. Abdomen short, smooth; the last segment strongly, closely punctured and covered with white pubescence. Face opaque, closely punctured; the centre broadly smooth and shining, the smooth space widened below the middle, obliquely narrowed at the apex; the clypeus smooth; a row of irregular punctures (four or five) on either side above. Propleuræ irregularly, stoutly striated in the middle; the base of the mesopleuræ smooth, with an irregular row of the usual foveæ; the apex is striated from shortly above the middle; base of the metapleuræ smooth, the rest of the area closely rugosely punctured.

Length 5 mm.

GENUS SPILOCHALCIS, Thoms.

SPILOCHALCIS CAPENSIS, sp. nov.

Vermillion-red; the flagellum of antennæ, the vertex broadly, the front more narrowly, the occiput, except at the edges, the outer half of the hind orbits, basal slope of pronotum, a line down its middle, a triangular large mark on the basal half of mesonotum prolonged as a broad line to the scutellum, the inner half of the lateral lobes, an irregular spot on the apex of the scutellum, the median segment and the pro- and mesopleuræ and the breasts, deep black. Legs coloured like the body, the fore coxæ, the middle except for a red spot below, the hinder except for an obscure mark on the apex below, all the trochanters, the base of the 4 anterior femora broadly, an irregular mark on the inner

side of the posterior, a smaller round mark near the middle on the outer side, a large semicircular one on the apex below at the edge, the base of the tibiæ and their apex more broadly, black. Wings hyaline, the nervures blackish. ♂.

Length 4.5 mm.

Cape Town.

Sides of front and face irregularly punctured; the frontal tubercle large, broad, rounded, and narrowed slightly above. Pronotum closely, the middle of mesonotum sparsely punctured, the lateral lobes smooth. Scutellum punctured like the mesonotum, furrowed down the middle; the apex in the middle closely striated. Metanotum reticulated, its centre stoutly longitudinally keeled. Propleuræ aciculated, sparsely punctured below. Apical half of mesopleuræ longitudinally striated, the base minutely, closely punctured. Metapleuræ irregularly reticulated. Abdominal petiole smooth, about twice longer than wide; the fourth segment has a large black mark, widely and largely incised in the middle, at the base; the fifth is black at the base. Teeth on hind femora black, short, closely packed, about 20 in number; the coxæ are as long as the femora. Flagellum stout, opaque, covered with a white down, the first and second joints equal in length.

Halticellini.

GENUS STOMATOCERAS, Kirby.

* STOMATOCERAS FUMIPENNIS, sp. nov.

Black, covered with a white pile; the basal half of the antennal scape below, the basal 4 joints of the flagellum, the knees, the anterior tibiæ, the apex of the 4 posterior tibiæ and the tarsi, rufous; wings dark smoky, tinged with violaceous, the basal third of the wings and a small cloud twice longer than wide, and rounded below at the stigma, hyaline; the costa and nervures deep black. ♀.

Length to end of ovipositor nearly 9 mm.

Cape Colony.

Face and clypeus closely rugosely punctured; the frontal depression, except at the top, closely transversely striated. Sides of clypeus broadly roundly dilated. Immediately below the antennæ is a stout projection, smooth and shining, roundly narrowed above, its apex rounded. Mandibles except at the apex, and labrum dark rufous; the former is depressed at the top. Pro- and mesothorax closely rugosely punctured; the apical half of mesopleuræ closely

longitudinally striated, smooth at the apex below. Scutellum longer than the width at the apex, broadly, but not deeply, furrowed down the middle; the apex ending in two stout teeth, which are longer on the outer than on the inner side; the incision separating them forms a triangle; they project largely over the median segment. The latter is widely areolated; there is a long central area extending from the base to the apex and roundly widened in the middle; in the centre are three irregular transverse keels. At the base of the segment is, on either side, a large irregular area, wider than long. It is narrowed on the outer side, where there are some irregular broken striæ; on the sides of the apex are two areæ stoutly striated. Metapleuræ reticulated; the apical half above with an area, which is roundly incised in the middle at the apex and narrowed at the base. Abdomen shorter than the thorax; the hypopygium short, triangular. The apex of the hind femora below is keeled; behind this are two not very distinct, rounded curved projections. The third joint of the antennæ is about one-fourth longer than the fourth. Malar space as long as the eyes. The keel bordering the apex of the clypeus projects upwards on to the middle of the malar space. Tegulæ conchiform, densely covered with white pubescence.

STOMATOCERAS TRIFASCIATUS, sp. nov.

Black; the scape and basal 5 joints of flagellum red; the apex of the 4 front femora, the fore tibiæ in front, the hind femora in the middle broadly on the inner side and the base of the femora, dark rufous; wings hyaline; there is a brownish cloud at the stigma, longer than wide and narrowed at the apex; opposite it is a smaller cloud, and beyond, half-way between it and the middle, a longer curved one, narrowed in front. ♀.

Length to end of hypopygium 8 mm.

Cape Town.

Head rugosely punctured, the frontal depression closely, minutely punctured; the eyes, on the inner side, bordered by a keel. Apex of clypeus broadly roundly, but not deeply incised; malar space as long as the eyes; there is a smooth keel down the middle. Mandibles rufous, black at the apex, pro- and meso-thorax closely punctured; the pro- more strongly than the mesonotum, and the apex of the mesopleuræ still more strongly; the base of the latter stoutly striated, except below; the striæ are clearly separated. Metapleuræ coarsely, rugosely punctured, roundly projecting below. Smooth and thickly covered with white pubescence. Metanotum

reticulated closely in the centre; there is a large central area bordered at the base by two small ones, of which the inner is the larger and more regular; the sides are coarsely aciculated, opaque and densely covered with white pubescence. Ventral surface rufous, as are also the apical segments above. Hinder femora with the basal two-thirds keeled below; the keel with two curves. Apex of clypeus irregularly bilobate, the incision wider than deep, the lobes rounded.

STOMATOCERAS? SULCISCUTIS, sp. nov.

Black, densely covered with silvery pubescence, the 4 anterior tarsi, knees, and apices of tibiae dark rufous; wings fuscous, the basal third almost hyaline. ♂.

Length 6.5 mm.

Cape Colony. Hex River.

Antennae thick, eleven-jointed (but the three apical may be composed of two), covered with a close, white pile; the third joint greatly narrowed at the base, as long as the following two united. Head closely, strongly punctured, formed as in the preceding species; the labrum irregularly striated. Pro- and mesonotum and scutellum closely, strongly, almost uniformly punctured; the apical half of scutellum depressed in the middle. Scutellar teeth longer than their width at the base, bluntly pointed at the apex, centre of metanotum with an area about three times longer than wide in the middle; the part on either side irregularly areolated; the keels at the base curved, below straight, transverse. Pleurae closely, rugosely punctured, pilose; the apex of metapleurae shining, smooth, irregularly areolated like the metanotum. Abdomen sessile; the second segment smooth, shining, as long as the others united; the apical are closely, strongly punctured. There are two curves on the under side of the hind femora, the basal being the longer; they are closely, minutely serrate. Seen from above there is not much difference in the length of the basal four joints of the hind tarsi.

STOMATOCERAS? RUFIPES, sp. nov.

Black, the basal three joints of the antennae, the end of the apical joint and the legs red; wings hyaline, a small cloud at the stigma, the cloud longer than the width at the base, and slightly narrowed towards the apex. ♀.

Length 5 mm.

Natal. Estcourt.

Inner orbits margined by a stout raised keel, the part between the keel and the eyes striated; the inner side rugosely punctured; the frontal depression smooth; the vertex and temples closely rugosely punctured. Malar space two-thirds of the length of the eyes. Pro- and mesonotum and scutellum closely punctured; the pronotum more closely, more opaque, and more densely pilose than the mesonotum; the scutellum has a wide, shallow, punctured furrow down the centre; its apex is margined, broadly rounded. Parapsidal furrows narrow, distinct. Metanotum opaque, except for a shining oblique area on either side near the base; it is narrowed on the inner, broad and transverse on the outer side; the rest is finely rugosely punctured; in the centre is an area extending from the base to the apex; its basal fourth becomes gradually widened; from the widened part it becomes narrowed towards the apex, the keels, however, not meeting there; the sides have a longish projection near the base. Basal segments of abdomen smooth, the apical punctured; the apical segments forming a short stout ovipositor; the ventral surface is rufous. Pro- and metapleuræ rugosely punctured, the latter more closely than the former; in the middle of the mesopleuræ is a striated belt, broad above, becoming gradually narrowed below; the base and apex are irregularly, largely and finely, punctured.

This is not a typical *Stomatoceras* as defined by Kirby (Journ. Linn. Soc., xvii., 62), for that has the apex of the scutellum "armed with two small raised teeth," while in the species I have described it is broadly rounded. It agrees fairly well otherwise with the generic description of *Stomatoceras*.

CRATOCENTRUS, gen. nov.

Abdomen with a long ovipositor—longer than the abdomen—the last segment conically projecting above, forming there a short sheath for the base of the ovipositor; the sheaths of the ovipositor moderately broad, punctured at the base. Antennæ stout, ten-jointed, densely pilose, originating close to the mouth. Apex of scutellum broadly rounded. Apex of metanotum with a broad rounded tooth above. Hind femora with ten teeth, the apical small, and close to each other, the basal larger and more widely separated.

The malar space is nearly as long as the eyes; the anterior ocellus is clear of the frontal depression; the hind ocelli are separated from each other by a distinctly greater distance than they are from the eyes; they are separated from the anterior by about the same distance as they are from the eyes. The last

antennal joint is one-half longer than the penultimate. Body and legs densely covered with silvery pubescence. Abdomen sessile; its apical half densely punctured. Mesonotum trilobate, the parapsidal furrows being distinct.

Comes near to *Rhynchochalcis*, which may be known by the untoothed femora, by the scutellum being bilobate, by the frontal depression enclosing the anterior ocellus, and by there being a keel between the antennæ. The ovipositor is more distinctly separated from the abdomen than usual with the *Chalcididinae*, being more as in the *Toryminæ*, that is to say the apical segments do not enter into its structure. I have included in the genus one species (*C. bicornutus*), in which the vertex is armed with 2 teeth or horns.

CRATOCENTRUS ARGENTEOPILOSUS, sp. nov.

Black, densely covered with silvery pubescence, which is much longer on the median segment than elsewhere, the apical half of the pronotum, the greater part of the mesonotum and scutellum dark red; the basal half of abdomen and the legs of a brighter red colour; the outer side of the hind femora darker coloured; the coxæ are densely, the rest of the legs are more sparsely pilose. Wings hyaline, infuscated along the margin, the nervures deep black. ♀.

Length 8 mm.; terebra 4 mm.

Cape Colony. Dunbrody.

Head rugosely reticulated-punctured, the sculpture almost hid by the dense pubescence. Frontal depression deep, narrower than the space between it and the eyes, closely, finely, transversely striated, stoutly keeled down the middle. Pro- and mesonotum and scutellum coarsely reticulated; the apical slope of the scutellum is oblique, stoutly longitudinally striated and with a distinctly raised margin which is broadly rounded. Median segment short, the centre steeply sloped, finely striated; the sides are more strongly striated. Pleuræ rugose, densely covered with longish, silvery pubescence; the lower basal half of the mesopleuræ striated, depressed.

* **CRATOCENTRUS RUFICORNIS, sp. nov.**

Black; the base of pronotum narrowly, its apex broadly, scutellum, mesopleuræ narrowly below the tegulæ, base of abdomen above and more broadly below, rufous; legs rufous; the outer side of hind femora, except on the top, black. Wings hyaline, the apical half largely suffused with fuscous-violaceous, the nervures black. ♂

Length 7 mm. ; terebra 3 m.

Cape Colony. Dunbrody.

Head reticulated-punctured, covered with short, white pubescence. Frontal depression strongly, closely, transversely striated; there is a longitudinal fine keel down the lower half. Thorax closely, rugosely reticulated; the apex of pronotum and the scutellum much more strongly than the rest; the apical slope of the scutellum stoutly, longitudinally striated; its middle projects into a stout tooth. Metanotum longitudinally reticulated, the transverse keels weaker than the longitudinal ones; the lateral tooth is large, blunt. Pleuræ closely reticulated; the propleuræ more distinctly and less coarsely rugosely than the rest. Abdomen closely, distinctly punctured throughout; there is a broad, dense belt of fulvous pubescence on the third segment; the apical segments are more coarsely, closely punctured than the others; the apical spine is longish, gradually narrowed to a sharp point; the base of the ovipositor is punctured. At the base of the hind femora are two large, sharply-pointed teeth, widely separated; these are followed by at least nine short, blunt ones.

CRATOCENTRUS BICORNUTUS, sp. nov.

Black; the antennæ, except the apical three joints, the greater part of the head, thorax, legs, and the apices of the basal three abdominal segments, rufous; hind femora with about fifteen minute teeth, forming a serrated edge; the terminal tooth is much larger than the rest; the vertex behind the ocelli armed with two stout, sharp-pointed teeth; wings hyaline, the apex with a smoky cloud. ♂.

Length 9 mm. ; terebra 4 mm.

Southern Rhodesia. Sebakwe.

Antennæ ten-jointed, almost bare. Head rugosely punctured, sparsely covered with silvery pubescence; the frontal depression deep, closely striated; the sides keeled. Malar space two-thirds of the length of the eyes; there is an oblique keel near its top. Thorax closely rugosely punctured; the top of the basal slope of the pronotum has an irregular, rugose keel. Scutellum rugosely reticulated; its apex rounded, depressed, striated; the middle projecting into a triangular tooth. Metanotum short, the sides above projecting into stout triangular teeth. Mesopleural depression deep, closely striated at the bottom. Abdomen closely and strongly punctured, the apical segments more strongly than the basal; it is

densely covered with depressed, pale-golden pubescence. The apical segment is long, becomes gradually narrowed to a fine point, aciculated-rugose, smooth at the apex. The ovipositor is longer than the abdomen, rufous, black at the apex.

PHASGANOPHORA, Westrv.

PHASGONOPHORA RUFICAUDIS, sp. nov.

Black, the six basal joints of flagellum, the legs, except the fore coxæ and the upper part of the hind femora, the base of the abdomen and the ovipositor rufous; the wings hyaline, their nervures black. ♀.

Length 7mm.

Dunbrody. Cape Colony.

The base and sides of the prothorax, the mesonotum round the scutellum; the sides of the latter are rufous. Face closely, strongly punctured. Frontal depression deep, closely striated, narrower than the space between it and the eyes. Hind ocelli separated from each other by double the distance they are from the eyes. Malar space as long as the eyes. Pronotum as long as the mesonotum; its basal slope rufous, closely transversely striated. Pro- and mesonotum and scutellum covered with raised points in transverse rows; those on the scutellum are broader and larger. Metanotum reticulated; its areola is large, wide on the apical two-thirds, narrowed at the base; the sides of the segment are rounded at the apex and thickly covered with long, grey hair; their base bears laterally an oblique, stout tooth. Propleuræ smooth above; there is a curved keel below the middle. Central part of mesopleuræ closely reticulated; the base of the metapleuræ smooth, the rest strongly reticulated. Hind femora with seven teeth; the basal close together, the rest widely separated; the apical broad, rounded. Abdomen smooth, except the sixth segment, which is strongly punctured. The ovipositor is nearly half the length of the abdomen. The first joint of the flagellum is not quite so long as the second. The whole body and legs thickly covered with glistening white hair.

EURYCENTRUS, gen. nov.

♂. Antennæ at least 12-jointed, the last joints not clearly separated, the third joint not much longer than the pedicle, covered

thickly with silvery tomentum ; they are situated half-way between the eyes and the clypeus. Eyes densely pilose ; the malar space is as long as them. Frontal depression gradually rounded, only margined at the eyes and, more distinctly, on the top above the fore ocellus. Scutellum large, clearly longer than wide, its apex broadly bidentate. Sides of metanotum stoutly toothed above, the teeth longer than the width at the base. Apical half of hind femora margined below, the margin slightly dilated at the base, bare. Hind tibiæ longer than the tarsi, not toothed at the apex ; the basal four joints of the tarsi become gradually slightly shorter ; the joints spinose. Abdomen short, the petiole very short, clearly broader than long ; its apical segment strongly punctured, the others smooth ; the ovipositor projecting, broad, three times longer than the width at the base. Wings smoky. Fore claws.

This genus, as regards the position of the antennæ, is intermediate between the *Chalcidini* and the *Haltichellini*, they being too low down for the former and not near enough to the mouth for the latter. The only genera with hairy eyes are *Trichochalcis*, *Microchalcis*, and *Allochalcis*, described by Kieffer (Berlin, Ent. Zeit., xliv., 246 and 247), but the species cannot fit into them. *Trichiochalcis* and *Allochalcis* are from Madagascar. The present genus comes nearest to the latter.

EURYCENTRUS ERYTHROGASTER, sp. nov.

Black ; the abdomen, except the ovipositor, the four anterior legs except the coxæ and trochanters and the hind femora, red ; the wings fuscous violaceous, the nervures black. ♀.

Length to end of ovipositor 10·5 mm.

Cape Colony.

Head rugosely punctured, the centre of the front closely transversely striated ; the temples and cheeks densely covered with longish silvery pubescence. Face below bordered by a smooth, shining keel, with rounded edges ; the apex of clypeus bordered by a similar keel, but not so strongly projecting ; the labrum large, with three stout transverse keels. Temples keeled on the outer edge. Malar space with two fine keels down the middle ; they are united below and, on the outer side, above are bordered by a row of three foveæ, outside of which is another foveated band, extending to the bottom. Pro- and meso-thorax closely, rugosely punctured, more or less reticulated. The reticulatous punctures are strong on the pronotum, stronger on the scutellum, and weaker on the base of the

mesonotum. On the centre of the metanotum are two areæ extending from the base to the apex; these are bordered by an area which is dilated in the middle on the outer side; at the sides at the base is a long curved area, widest below, with two stout keels opposite the spines, the base bearing also stout keels.

EUCHARINÆ.

STIBULASPIS, gen. nov.

Scutellum large, roundly narrowed behind, ending in two longish teeth about 3 or 4 times longer than wide; strongly longitudinally striated throughout. Metanotum with a steep slope, the sides broadly rounded, not tuberculate. Antennæ twelve-jointed, the fourth to ninth joints stoutly produced above, the projections longer than thick, gradually narrowed to a sharp point, the apical roundly narrowed at the apex, closely united to the penultimate, which is broader than long and shorter than the preceding; they are placed well upon the face, above the lower edge of the eyes. Malar space longer than the eyes. Clypeus bounded laterally by oblique furrows, but not from the face. Temples very short. Except on the metanotum the whole thorax is strongly striated. Abdominal petiole stout, twice longer than wide. Wings not extending much beyond the apex of the abdomen; the nervures as in *Stibula*. Legs slender, the femora narrowed towards the apex; metatarsus as long as the following three joints united. Claws curved, simple. Ovipositor slender. Mandibles curved, bidentate, the apical tooth long, curved, sharp-pointed, the sub-apical shorter and blunter.

The affinities of this genus are with *Stibula*, which may be known from it by the antennæ in both sexes being simple, neither serrate in the ♀ nor flabellate in the ♂; and both have a distinct hump-like elevation above the metapleuræ. In *Stibula*, too, the thorax is strongly punctured; in *Stibulaspis* it is as strongly striated. The form of the scutellum is the same in both, except that in *Stibula* the apical teeth are curved, not straight as in the present genus. In the ♂ of *Stibulaspis* the abdominal petiole is longer, much longer than in the ♀; the middle joints of the antennæ, instead of being stoutly serrate, are stoutly flabellate.

The history of the *Eucharinæ* is interesting. So far as it is known the species are parasites on ants. Cf. Cameron, Manchr. Memoirs, vol. 34, 1890-91, p. 5, where it is stated that *Chalcura bedeli*,

Cam., lives parasitically in the nests of *Myrmecocystus viaticus* in Algeria.

STIBULASPIS FORTISTRIATA, sp. nov.

Blue with brassy and dark purple tints; the apex of femora, tibiæ, and tarsi pale testaceous, the lower half of the abdomen rufo-fulvous; antennæ black; the wings clear hyaline, the nervures pale. ♀.

Length 5 mm.

Natal. Durban.

Head from the ocelli to the clypeus longitudinally, closely striated, the striæ becoming weaker below; the raised centre of the face transversely striated; the clypeus smooth and narrowed above, transversely striated below. Mandibles dark purple. The fourth to ninth joints of the antennæ are stoutly produced above; the serrations broad at the base, becoming gradually narrowed towards the apex. Malar space almost twice the length of the eyes; it is stoutly striated; the striæ are curved. Mesonotum stoutly, transversely striated; the striæ sharp, clearly separated. Scutellum similarly but longitudinally striated; the striæ somewhat stronger and more widely separated; they converge towards the apex; the two apical teeth are united at the base, stout, slightly diverging; about three times longer than thick, the apex rounded. Metanotum closely reticulated in the middle; the sides irregularly transversely striated. Pleuræ longitudinally striated, the striæ sharp, clearly separated; the upper part of the propleuræ closely reticulated. The dorsal part of the abdomen is dark blue to near the apex, which is rufo-fulvous.

STIBULASPIS ATROPURPUREA, sp. nov.

Head and thorax blackish purple, the abdomen black with a faint bluish tint; antennæ black; legs black, tinged with purple; the apex of femora, tibiæ, and tarsi testaceous; wings hyaline, the nervures pale fuscous. ♂.

Length 4 mm.

Natal. Estcourt.

Face opaque, alutaceous, bare, a broad depression or furrow in the centre; clypeus finely irregularly transversely striated; malar space irregularly, finely, obliquely striated; it is about one-half longer than the eyes. Sides of vertex and front finely longitudinally striated. Pro- and mesonotum transversely, regularly striated; the striæ moderately stout and clearly separated; the scutellum is more

strongly longitudinally striated, the striæ, too, being more widely separated; the apical spines are long, slender, not much thickened at the base, and about four times longer than they are thick at the base. Metanotum irregularly longitudinally reticulated. Pleuræ longitudinally striated, the striæ becoming stronger towards the apex. Abdominal petiole long, slender, cylindrical, about half the length of the rest of the abdomen. The apical eight joints of the antennæ bear long stout rami, of which the basal are slightly shorter than the others.

EURYTOMINÆ.

EURYTOMA, Illig.

EURYTOMA NATALENSIS, sp. nov.

Black, the head and thorax densely covered with short, white pubescence; the abdomen smooth and shining; the four anterior legs, the apex of the hind femora and the hind tibiæ and tarsi rufo-ferruginous; wings hyaline. ♀.

Length 3 mm.

Natal. Durban.

Antennæ stout; the first joint of flagellum twice longer than wide, narrowed at the base, the others stouter, shorter, but still longer than wide, and bearing white microscopic pubescence and some stiff hairs. Malar space as long as the eyes, shining, closely reticulated-punctured, its outer margin stoutly keeled; its inner side less distinctly margined; the rest of the head strongly punctured and covered with stiff white hair; the punctuation is rugose, close. Ocelli in a curve; the hinder separated from each other by double the distance they are from the eyes. Vertex depressed above. The head is slightly wider than the thorax. Metanotum finely closely punctured, without keels and with an oblique slope; not furrowed or excavated in the middle. Forewings hardly ciliated; the posterior with longish ciliæ. Abdomen ending in a longish sharp point.

ORMYRIDES.

ORMYRUS, West

A genus of small extent, recorded from the Palæarctic, Nearctic, and Neotropical Zoological Regions,

ORMYRUS STRIATUS, sp. nov.

Blackish purple, shining, above covered with short pale pubescence; the base of tibiæ and the tarsi pale testaceous; wings hyaline, the nervures black; tegulæ fuscous. ♂.

Length 2 mm.

Cape Colony. Stellenbosch. "Bred from galls."

Antennæ black, the flagellum covered with a pale pubescence; its joints broader than long, the first narrowed at the base. Face depressed below the antennæ, a broad keel in the middle of the depression; the sides punctured. Occiput above finely, closely transversely striated. Pronotum weakly, the mesonotum more strongly, closely transversely striated; the scutellum more irregularly striated, its apex closely punctured. Metanotum with a broad furrow in the middle; the parts bordering its top raised, tuberculate. Propleuræ raised above in front, the centre closely finely striated; the mesopleuræ smooth and shining; the metapleuræ closely, irregularly obliquely striated. Abdomen closely, finely distinctly punctured; the basal segment is finely closely reticulated; it is largely tinted with blue, and is separated from the second by a deep furrow; the second is short, about two-thirds of the length of the third, which is a little shorter than the fourth; the latter is irregularly longitudinally striated; the penultimate is finely closely striated; the last is much narrower than the penultimate and is transverse at the apex.

 ADDITIONS AND CORRECTIONS.

The following correction is to be made in my paper in the Ann. S. Afric. Mus., v., 1906—

For *Acanthobracon* read
NEOTRIMORUS, Dalla Torre

= *Trichiobracon*, Cam., Journ. Straits Branch Roy. Asiatic Society, 1905, 104 = *Acanthobracon*, Szép. non Kriechb. = *Trimorus*, Kriechb. preoccupied.

GONIOPRYMNUS MACULICEPS,

Ann. S. Afric. Mus., v., pt. 2, p. 126.

This genus is clearly related to *Moansa*, Tosq. I am, indeed, not sure but that it may be identical with it. So far as I can make out

from the description, *Gonioprymnus* differs in having the spiracles on the first abdominal segment placed at the apex of the basal third, not "in medio sitis"; the first joint of the flagellum is distinctly longer than the second; in *Moansa* it is shorter; in the latter the sixteenth to nineteenth joints of the flagellum are compressed and flattened and each of them bears one or two spines, which are slender, elongated; in *Gonioprymnus* it is only the nineteenth joint of the flagellum, *i.e.*, that before the terminal three—those which are turned off at an angle—which bears spines. The antennæ are twenty-two-jointed as in *Moansa*; the three terminal joints are hardly compressed and not thicker than the preceding; the apical two are almost equal in length; the basal is distinctly shorter.

The Malay species referred by Tosquinet to *Moansa* (Mém. Soc. Ent. de Belgique, 1903, pp. 57-67) are clearly not generic with the African *Moansa*; they have the median segment areolated as in the Malay genera *Epicorides*, &c.

The GENUS MACROGASTER, Brullé.

The genus *Macrogaster* was described by Brullé in the fourth vol. of the Hist. Nat. des Ins. Hyménoptères, p. 184, on an insect from the Cape of Good Hope, *M. rufipennis*, which was figured on Pl. 41, fig. 4. This genus has always been a puzzle to me. Neither the description nor the figure is good; *e.g.*, the joints of the tarsi are said to be "allongés et très courts," whatever that means. Mr. Frederick Smith described from Borneo a *Macrogaster* which was no Cryptid (Brullé placed *Macrogaster* at the head of the *Cryptides*) but a genuine Pimplid belonging to (according to my views) the genus *Epirhyssa*, Cresson, a genus which differs mainly from *Rhyssa* in the forewings having no areolet. The late Dr. Tosquinet describes (Mém. de la Soc. Ent. Belg., 1903, p. 258) *Macrogaster flavopictus*, Smith, from Borneo; which is, I have no doubt, an *Epirhyssa*. I am now inclined to believe that the genus which I described in the Annals of the South African Museum, v., p. 127, under the name of *Ctenotoma*, is very probably identical with *Macrogaster*. In the figure of *M. rufipennis* the transverse cubital nervure in the forewings is shown to be interstitial; the transverse median nervure in the hind wings is unbroken, the head is shown to be narrowed, not dilated behind the eyes, and it is a more slenderly built species than any of the species of *Ctenotoma* that I have described. Still, as

neither Brullé's descriptions nor figures are remarkable for extreme accuracy, as has been more than once pointed out, the chances are that an examination of Brullé's type in the Paris Museum will show that my suspicion of the identity of *Ctenotoma* and *Macrogaster* is well founded.

The species of *Macrogaster* I described (Manchr. Memoirs, vol. 43, 1898-99, pp. 193-201) from the Khasia Hills belong to a new genus or genera, but not to the *Hemigasterini*. So far the genus *Ctenotoma*, in the sense I use it, is an African one, containing at present four species, namely, *rufipennis*, Brullé, *fuscipennis*, Cam., *nigriceps*, Cam., and *ruficeps*, Cam.

6.—*Notes on some Bushman Crania and Bones from the South African Museum, Cape Town.*—By FRANK C. SHRUBSALL.

THE earliest remains of the Bushmen peoples of South Africa would appear to be those of the Strandloopers found in the caves along the south-eastern seaboard. On cultural grounds these are said to be of a somewhat different type to the inland Bushmen of the present day. It therefore becomes a matter of some interest to compare the features of the two.

This paper is based primarily on a collection of skulls and skeletons in the South African Museum, Cape Town, but other material has been called on for comparison.

The skulls and the bones of the skeletons have been separately dealt with.

The skulls are first of all described, and details as to the method of measurement are given.

The averages are compared with those obtained from surrounding races. The purity of each stock is then tested, and it will be shown that the Strandloopers are more homogeneous than the other Bushmen. The Hottentots are then dealt with, and shown to be intermediate in characters between the Strandloopers or primitive Bushmen and the Bantu tribes. It appears that if the Hottentots are a cross between these two races, the intermingling must have taken place a long time ago, as the Hottentots' skulls form a very homogeneous series.

The Bushmen and Hottentots are then compared with the Pigmies of Central Africa, whom in many respects they resemble, and with the populace of Upper Egypt, with whom, from archæological and linguistic evidence, it has been thought they might have come in contact.

Finally, an attempt is made to suggest a possible explanation of the present geographical distribution by a scattering of the Negro

tribes from the region of the Great Lakes under the pressure of Hamitic tribes advancing from an easterly direction.

The bones of the skeleton are then described and compared.*

SECTION I.

THE CRANIA.

Material.—Twenty-four skulls, some of which were in a fragmentary condition, and of which six only were accompanied by the lower jaw. Ten were available for examination.

Of the skulls ten certainly belonged to the variety known as Strandloopers, while two others probably fell into the same category.

In addition, a collection of Strandlooper crania now in the Anatomical Museum at Cambridge were measured, and the results incorporated with the foreign.

Records available for Comparison.—It was at once obvious that the material available from this collection was insufficient for the purpose, so that for comparison use had to be made of skulls and skeletons previously described. In this relation the records of 43 Bushman and 30 Hottentot crania previously measured and described by the present writer have been utilised.† This avoids the risk of any possible errors arising due to different methods of measurement. For some purposes the records of others have been drawn on, bringing the total number of Bushman skulls up to 79.

With the intention of showing the relations of the Bushmen to other South and Central African races, the writer has made use of the records of the groups of skulls he had previously measured. For a few places the records of others had to be employed. Male skulls only are used for comparison.

Central African Pigmies.

Akkas, 2. Sent to the British Museum by Emin Pasha, and described by Prof. Flower (*J. Anth. Inst.*, vol. xviii.).

Bambute, 1. Sent to the British Museum by Sir H. H. Johnston. (*The Uganda Protectorate*, vol. ii.)

* Reference should be made to the explanatory diagrams at the end of the article.

† F. C. Shrubbsall, "Crania of African Bush Races," *J. Anth. Inst.*, 1897.

Eastern Bantu-speaking Peoples.

Kaffirs. Zulus. Anyanja. Angori. 73. (Shrubsall, J. Anth. Inst., vol. xxviii.)

Western Bantu-speaking Peoples.

From the district between the Rio del Rey and the Congo. 77.

? Hamitic Peoples.

Predynastic Ancient Egyptians. 224. (Thomson and MacIver, "The Ancient Races of the Thebaid.")

Masai. 6. (Reinecke, Archiv für Anthropologie, Bd. xxv.)

The study of any series of skulls is usually commenced by a process of inspection. It is necessary that each skull should be placed in the same position during the examination, or the comparisons may be inaccurate. The most usually adopted positions are the French or German horizontal orientation. In the French method the skull is so orientated that the occipital condyles and the mid-point of the alveolus of the upper jaw are in the same horizontal plane. In the German system the skull is so placed that a line from the inferior margin of the orbit to the superior margin of the external auditory meatus on either side is accurately horizontal. This corresponds closely, but not quite exactly, with the plane of the visual axis. Arthur Thomson and Randall MacIver, of Oxford, found the angle made by the basi-nasal line with the horizontal in skulls orientated according to the German or Frankfort-Munich plane varied from 22° to 34° , and recommended that skulls should be orientated for examination in such a manner that the basi-nasal line always makes an angle of 27° with the horizon. ("The Ancient Races of the Thebaid," p. 37.) The Frankfort-Munich plane has been employed for the study of the skulls described in the present paper.

The skull once orientated is looked at from above, front, behind, below, and the side; these positions being distinguished by the terms *Norma Verticalis*, *Norma Facialis*, *Norma Occipitalis*, *Norma Basilaris*, and *Norma Lateralis* respectively.

Viewed in *norma verticalis* both Bushman and Strandlooper skulls present a fairly uniform oval appearance with some slight narrowing in the anterior temporal region, as had well-developed frontal and parietal eminences. In the majority of skulls, which are, therefore, termed *cryptozygous*, the zygomatic processes are not seen in this *norma*. This feature is more noticeable among the Strandlooper group than among the collection of crania from the interior districts.

The coronal, sagittal, and lamboid sutures are remarkably simple and wormian bones rare. Many crania, more especially those of females, exhibit the phenomenon of stenocrotaphy, or a narrowness in the region of the pterion or posterior point of the parieto-sphenoid suture accompanied by greater breadth at the stephanion or point of intersection of the coronal suture and the temporal ridge.

In *norma occipitalis* the crania present a pentagonal appearance from the prominence of the parietal eminences, the mastoid processes are small, the *conceptaculæ cerebelli* full, so that when placed on a table many skulls rest posteriorly on these rather than on the occipital condyles. The vertex is often flattened though sometimes rounded off in a wide curve. The sides are flattened in about half the total number of Bushman crania examined.

In *norma lateralis* the most prominent features are the fulness of the forehead, the forward projection of the malar or cheek-bones, and the want of prominence of the nasal bones which lead to the appearance of great flattening of the face as a whole. The alveolar border of the maxilla projects but little, the incisor teeth are set vertically in their sockets, and the chin in the majority of cases is weak and receding. The sigmoid curve between the coronoid and condyloid processes of the mandible is very shallow. This feature is characteristic of the dwarf races of Africa. The temporal fossæ are ill-filled; that is, the temporal bone is separated by a well-marked groove, or gutter, from the lateral surface of the frontal bone which projects outwards into the fossa. The mastoid processes are small but present posteriorly well-marked digastric grooves, and are bounded above by a deep groove running downwards and forwards from the posterior separation of the *lineæ temporales* across the squamosal bone, and thus render the mastoid processes more conspicuous than would have been anticipated from their actual dimensions. This prominent supra-mastoid groove is a distinctive feature of Bushman-Hottentot skulls. The sutures seen in this *norma* are quite simple, and in only one case in the whole series of Bush crania I have examined was there a fronto-squamosal instead of a parieto-sphenoid articulation at the pterion.

The *norma facialis* is characterised by a broad, full forehead, prominent external angular processes rendered yet more conspicuous by a slight depression on the bone above and internal to them, comparatively large and forwardly projecting malar bones, a broad depressed nose and a receding chin. The orbits are broad with strong borders and a wide inter-orbital space due to a flattening and widening of the ascending processes of the *maxillæ*, which in these

crania form part of the bridge as well as of the side walls of the nose. The nasal bones are flattened from side to side and from above downwards are set at a very wide angle to one another, so that they do not contribute to the prominence of the bridge of the nose. The side walls of the broad apertura pyriformis round off into the floor, and this into the anterior surface of the maxilla. The nasal spine is inconspicuous, the upper jaw broad and slight with very distinct incisor and canine fossæ.

In norma basilaris it may be noticed that the palate is parabolic, the teeth large and healthy but usually much ground down, incisors and molars alike. The bony processes are all slender and the glenoid fossa shallow.

MEASUREMENTS.

The following measurements have been taken in every skull sufficiently complete and recorded in millimetres in the tables appended:—

Maximum glabello-occipital length, from the glabella, or most prominent point of the frontal bone in the median line on or between the supra-orbital ridges, to the most distant point of the occiput in the median sagittal plane. This dimension is ascertained with the callipers, the fixed point of which is applied to the glabella and kept there with a finger while the movable end explores the occiput. Especial care must be taken that the fixed point has not moved from the glabella, and that the callipers have not been deflected from the median sagittal line during the process of measurement.

Maximum breadth, taken with the callipers, which explore the skull until the maximum diameter above the level of the auditory meatus is ascertained. The callipers may be held either vertically or horizontally so long as care is taken to keep the points in the vertical and horizontal planes, that is, exactly opposite one another.

Basi-bregmatic height. To take this dimension one point of the callipers is placed on the basion, or mid-point of the anterior margin of the foramen magnum, and the other on the bregma, or point of junction of the coronal and sagittal sutures.

Bi-maxillary breadth, taken with the callipers between the most distant points, in the same plane, of the anterior surfaces of the two maxillæ.

Bi-zygomatic breadth, or greatest diameter between the zygomatic arches.

Naso-alveolar height, taken with the callipers between the nasion,

or point where the inter-nasal meets the fronto-nasal suture, to the alveolar point, or most prominent point on the alveolar margin between the two upper median incisor teeth.

Orbital height, the maximum vertical distance between the superior and inferior margins of the orbit.

Orbital breadth, measured with callipers from the lacrymal point or dacryon, the point of junction of the frontal, maxillary, and lacrymal bones, in such a manner as to be at right angles to the previous diameter. It is usually well to define the orbital margin with a pencil before carrying out this measurement.

Bi-dacryc breadth, or distance between the two lacrymal points.

Nasal height, taken from the nasion to the nasal spine.

Nasal breadth, the maximum transverse diameter measured horizontally between the margins of the apertura pyriformis.

Internal bi-orbital breadth, taken from a depression just above the middle of the outer margin of one orbit to the corresponding point on the outer margin of the other orbit.

Basi-nasal length, the diameter between the basion and the nasion.

Basi-alveolar length, the diameter between the basion and the alveolar point.

Dental length, the distance between the centre of the anterior border of the incisor surface of the first pre-molar tooth and the centre of the posterior border of the third molar.

Naso-malar curve, the measurement taken with the tape over the nose between the same points as the internal bi-orbital breadth.

Frontal, parietal, and occipital curves. The lengths taken with the tape of the respective portions of the median sagittal curve from the nasion to the mid-point of the posterior border of the foramen magnum. Care is necessary to keep the tape in the median sagittal plane while reading off the measurements.

Cranial Capacity. This is ascertained by pouring No. 8 shot or millet seed into the cranium, the foramina of which have been plugged with cotton-wool, shaking gently the while until the cavity is completely filled. The contents are then poured into a glass measure which is shaken in a similar manner to the skull, and the capacity can then be at once read off. When shot are employed as the cubing medium it is usual to apply gentle pressure with a rammer in the course of filling both the skull and the measure. This is disadvantageous when a delicate skull is being measured on account of the risk of starting some of the sutures, which is avoided by the

employment of the lighter material, millet seed. The crania from the South African Museum have been cubed with millet seed; those previously examined and at present in various English museums were cubed with shot.

Many other measurements of crania have from time to time been described, for which the reader is referred to any standard text-book of anthropology. Further measurements on a previous series of the Bushman and Hottentot skulls will be found in the *Journal of the Anthropological Institute of Great Britain and Ireland*, vols. xxvii. and xxviii.; these series have been drawn on for comparison in the present paper.

METHODS OF INTERPRETATION OF THE MEASUREMENTS.

It was until recently the custom to compare skulls by a study of the relative magnitude of one dimension in terms per cent. of some other dimension, the resulting value being described as an index. This presents the disadvantage that the index varies according to the magnitude of both components, so that if both should vary together a similar index might be yielded by two skulls or groups of skulls of very different actual magnitude. This method is, however, still in use, and will be first considered.

In the earlier papers on craniology it was customary to record only the average indices, then the possible indices were divided into a few—usually three—groups and the percentage proportion of a series of skulls falling into each group was noted. Later still it became the rule to arrange the skulls in a series, stating the actual or percentage number, presenting each index so that variations in distribution around the average or mean point could at once be noted. This would at once show whether the average corresponded to the index of maximum frequency of occurrence, or whether it was, on the other hand, a mean between two or more widely separated groups, in which case it was considered that the series of skulls under observation was not homogeneous but comprised numbers of different racial groups. If such seriation tables be shown graphically in the form of curves in which the ordinates represent the percentage frequency of each index and the abscissæ the indices, it will be seen that numerous peaks appear on the curve. The greater the number of skulls in the series the smaller will be these peaks and the smoother the curve, so that large numbers must be available before any very definite interpretation can be given to such peaks as remain.

INDICES.

The following are the most usually taken indices and the nomenclature adopted in classifying crania by their use:—

Name of Index.	Nature of Index.	Classification.	Nomenclature.
Cephalic.	$\frac{\text{Maximum breadth} \times 100}{\text{Glabello-occipital length}}$	{ Below 75 75-80 Above 80	Dolichocephalic. Mesaticephalic. Brachycephalic
Altitudinal.	$\frac{\text{Basi-bregmatic height} \times 100}{\text{Glabello-occipital length}}$	{ Below 72 72-75 Above 75	Chamæcephalic.* Orthocephalic. Hypsicephalic.
Breadth-height or Vertical.	$\frac{\text{Basi-bregmatic height} \times 100}{\text{Maximum breadth}}$	{ Below 92 92-98 Above 98	Tapeinocephalic.* Metriocephalic. Akrocephalic.
Alveolar.	$\frac{\text{Basi-alveolar length} \times 100}{\text{Basi-nasal length}}$	{ Below 98 98-103 Above 103	Orthognathous. Mesognathous. Prognathous.
Upper Facial of Kollman.	$\frac{\text{Naso-alveolar height} \times 100}{\text{Bi-zygomatic breadth}}$	Below 50 Above 50	Chamæprosopic. Leptoprosopic.
Nasal.	$\frac{\text{Nasal breadth} \times 100}{\text{Nasal height}}$	{ Below 48 48-52 Above 52	Leptorhine. Mesorhine. Platyrhine.
Orbital.	$\frac{\text{Orbital height} \times 100}{\text{Orbital breadth}}$	{ Below 84 84-89 Above 89	Microseme. Mesoseme. Megaseme.
Nasomalar.	$\frac{\text{Nasomalar curve} \times 100}{\text{Internal bi-orbital breadth}}$	{ Below 107.5 107.5-110 Above 110	Platyopic. Mesopic. Prosopic.
Dental.	$\frac{\text{Dental length} \times 100}{\text{Basi-nasal length}}$	{ Below 42 42-44 Above 44	Microdont. Mesodont. Megadont.
Cranial capacity.	However measured.	{ Below 1,350 cc. 1,350-1,450 cc. Above 1,450 cc.	Microcephalic. Mesocephalic. Megacephalic.

The method of classifying the indices derived from any series of skulls and expressing the percentage frequency in each group is in reality a variety of seriation. The great drawback to this is that the groups are of uneven size. Until quite recently, however, it was the most usual custom, and serves to show many characteristic features. The following tables show the percentage distribution of the indices

* Some authors use the terminology of the vertical index for that of the altitudinal index, adopting the divisions used in the latter, which they altogether omit.

derived from the Strandlooper skulls contrasted with similar percentages from measurements of Bushmen, Hottentots, and the two main types of the Bantu-speaking peoples. These contrast measurements are taken from the papers of the *Journal of the Anthropometrical Institute*.

It will be noticed that the Hottentots are intermediate in all respects between the Bushmen and the Bantu-speaking peoples, while the Strandloopers are further removed from these than the other Bushmen.

	Strand- loopers.	Bushmen.	Hottentots.	Eastern Bantu.	Western Bantu.
<i>Cephalic Index.</i>					
Dolichocephalic.....	25·0	45·8	60	75·2	32·5
Mesaticephalic.....	60·0	50·0	40	23·1	55·8
Brachycephalic.....	15·0	4·2	—	1·7	11·6
<i>Altitudinal Index.</i>					
Chamæcephalic.....	88·9	42·3	35·1	28·8	9·1
Orthocephalic.....	11·1	46·2	56·8	40·8	28·6
Hypsicephalic.....	—	11·5	8·1	30·3	62·3
<i>Breadth-height Index.</i>					
Akrocephalic.....	50·0	13·4	46·9	80·7	63·6
Metriocephalic.....	50·0	55·8	31·2	19·2	31·2
Tapeinocephalic.....	—	30·8	21·9	—	5·2
<i>Alveolar Index.</i>					
Orthognathous.....	60·0	43·2	16·7	20·2	7·5
Mesognathous.....	20·0	36·7	50·0	50·9	43·3
Prognathous.....	20·0	20·1	33·3	28·9	49·2
<i>Facial Index.</i>					
Chamæprosopic.....	60·0	47·5	36·8	24·1	27·6
Leptoprosopic.....	40·0	52·5	63·2	75·9	72·4
<i>Nasal Index.</i>					
Leptorhine.....	—	3·3	—	1·7	1·3
Mesorhine.....	13·3	13·3	25	18·9	20·3
Platyrrhine.....	86·7	83·3	75	79·4	78·9
<i>Orbital Index.</i>					
Megaseme.....	70·5	17·8	34·3	40·3	38·3
Mesoseme.....	23·5	44·6	31·4	34·0	41·1
Microseme.....	5·9	37·3	34·3	25·9	21·6

Cranial Capacity.

Strandloopers (7) 1,345 cc.

Bushmen (24) 1,285 cc.

Previous observations had given the capacity of the skull of the male Bushman as 1,330 cc. and of the female as 1,255 cc.

The range of variation in the Strandloopers is from 1,185 cc. to 1,515 cc. and in the Bushmen 1,060 cc. to 1,570 cc.

With these may be compared:—

Hottentot	1,365 cc.
Eastern Bantu	1,520 cc.
Western Bantu	1,420 cc.

STANDARD DEVIATION.

The average, whether of index or dimension, is very liable to be affected by a chance occurrence when the total number of observations is very small. To in part eliminate this the study of the standard deviation and of the probable error of the averages has been introduced. The method consists in determining the error of the mean square. As an example the standard deviation of the cephalic index of the Bushman skulls is worked out.

Index.	Number of Individual Skulls in each Group. Z.	Deviation from Centre. X.	ZX.	ZX ² .
67	2	- 8	- 16	128
68	1	- 7	- 7	49
69	3	- 6	- 18	108
70	2	- 5	- 10	50
71	1	- 4	- 4	16
72	2	- 3	- 6	18
73	8	- 2	- 16	32
74	9	- 1	- 9	9
75	11	0	—	—
76	12	+ 1	+ 12	12
77	9	+ 2	+ 18	36
78	10	+ 3	+ 30	90
79	4	+ 4	+ 16	64
80	2	+ 5	+ 10	50
81	1	+ 6	+ —	—
82	—	+ 7	+ —	—
83	—	+ 8	+ —	—
84	1	+ 9	+ 9	81
85	1	+ 10	+ 10	100
	<u>79</u>		<u>111</u>	<u>879</u>

The average index of the series can be seen by inspection to be somewhere near 75, so this number being taken as a centre, all the other indices can be treated as so many units above this that is positive, or below or negative. The products ZX of the number

in each group multiplied by the deviation from the centre are then calculated and added, being in this case 86 negative and 111 positive, giving a total of + 25. This number, divided by the total number of skulls in the group, 79, yields a quotient + .32 which has to be added to the centre 75 to give the average 75.32. In any such calculation the sum of the first column ZX divided by the total number of observations made, the sum of column Z, gives the amount to be added (+) or subtracted (-) from the centre selected by inspection to yield the average. The product ZX is then once more multiplied by X, the amount of deviation from the mean, all the products being now positive.

The amounts in the column ZX^2 are now added up and the sum divided by the total number of observations Z, in this case 79, so that we have $\frac{ZX^2}{Z} = \frac{879}{79} = 11.13$.

This gives thus the sum of the squares of the deviations from the arbitrarily selected centre to correct this to the deviations from the true centre or average; for the whole group the square of the deviation of the arbitrary centre from the average must be subtracted, *i.e.*, the square of the quotient $\left(\frac{ZX}{Z}\right)^2$ which in this case is $(.32)^2$ or .1024.

$$\sigma^2 = \frac{ZX^2}{Z} - \left(\frac{ZX}{Z}\right)^2 = 11.13 - .1024 = 11.0276.$$

Therefore $\sigma = 3.3211$.

From the value of σ the standard deviation, the range within which the averages of other observations of the same group would fall can be calculated. Thus the chances that they would lie between the average M and $\pm \frac{\sigma}{\sqrt{N}}$, the standard deviation divided by the number of observations, are even. Between $M \pm 2 \frac{\sigma}{\sqrt{N}}$ are 49 to 1, $M \pm 3 \frac{\sigma}{\sqrt{N}}$ are 1,000 to 1, and $M \pm 4 \frac{\sigma}{\sqrt{N}}$ are 33,300 to 1. A knowledge of the standard deviations of two groups enables these to be compared with a knowledge of the chances against any difference being due to random sampling.

The formula to apply is—

$$M_1 - M_2 > \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

where M_1 and M_2 are the averages, N_1 and N_2 the number of

observations made, and σ_1 and σ_2 the standard deviations of the two averages.

If the difference between the two averages is equal to the square root of the sum of the squares of the standard deviations divided by the number of observations in each group, *i.e.*,

$$M_1 - M_2 = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}},$$

then it is an even chance that such a difference is due to random selection. If—

$$M_1 - M_2 = 2\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}},$$

then it is roughly 50 to 1 against the difference being due to random sampling, and if—

$$M_1 - M_2 = 3\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

it is 1,000 to 1 that the difference is not due to chance selection, but to the action of some definite cause. It is usual to take this

value, $3\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$, as definitive, and say that when the difference

between two averages exceeds this the difference is significant, and when it does not that the possibility of random sampling comes in to an extent which prevents a difference due to some definite cause other than chance being proven. To illustrate by example, the average cephalic index of the Strandlooper skulls was found to be

77.1, and the value of $\frac{\sigma^2}{N}$ for this group was .74. The average index of the Bushmen skulls other than Strandloopers was 75.7, and the value of $\frac{\sigma^2}{N}$ was .04. The difference of these two averages

is $77.1 - 75.7 = 1.4$, and the value of—

$$\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} = \sqrt{.74 + .04} = \sqrt{.78} = .88.$$

Three times this = 2.64, which is greater than 1.4, indeed twice this, 1.76 is greater, so that the difference between the two averages falls well within the limits of possible random selections.

On the other hand, the average index of the Eastern Bantu

skulls was 72.6, and the value of $\frac{\sigma^2}{N}$ for this group was .07. The difference between the Bushman and Eastern Bantu averages is—
75.7 - 72.6 = 3.1.

The value of—

$$\sqrt{\frac{\sigma_1^2}{N} + \frac{\sigma_2^2}{N}} = \sqrt{.04 + .07} = \sqrt{.11} = .33.$$

So that the difference of the averages is nearly ten times greater than the value of the range of even chances that the cause of the difference is a random selection, which makes the odds against this explanation many millions to one.

The limit, $3\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$, in this case .99, was much exceeded, so

that the difference in the averages may be regarded as significant.

The following table shows the results of the application of this method to the present collection and of those with which it has previously been contrasted. The figures indicate that the Strandloopers cannot be distinctly separated from the Bushmen or from the Hottentots, while they are clearly separated from both divisions of the Bantu-speaking peoples. It must, however, be remembered that owing to the small number of specimens available the standard deviation of the Strandlooper skulls is very great, so that there may be differences which cannot be mathematically proved. In any case, so far as the averages go, a distinct gradation can be traced.

INDICES.

Racial Group.	Cephalic.		Alveolar.		Facial.		Nasal.		Orbital.	
	Av.	$\frac{\sigma^2}{N}$	Av.	$\frac{\sigma^2}{N}$	Av.	$\frac{\sigma^2}{N}$	Av.	$\frac{\sigma^2}{N}$	Av.	$\frac{\sigma^2}{N}$
Strandloopers.....	77.1	0.74	97.5	1.87	50.0	0.93	57.2	1.99	80.7	5.13
Bushmen	75.7	0.04	98.5	0.30	50.5	0.48	58.6	0.58	83.5	0.53
Hottentots	73.4	0.29	101.3	0.89	51.7	0.65	57.5	1.07	86.3	1.83
Eastern Bantu	72.6	0.07	100.9	0.09	52.9	0.09	57.0	0.19	87.4	0.20
South-western Bantu ...	72.5	0.37	—	—	51.0	0.30	—	—	87.7	1.20

More attention has been paid to a study of actual dimensions than of indices. The reason for this is of course clear: Two males might have the same index and yet be of very different actual size; it therefore seems advisable to test the present collection by this means.

The first step was to separate the skulls as far as possible according to sex and then to endeavour to ascertain whether the differences in dimension between the two groups were such as to justify the classification which had been adopted. As regards the Strandloopers, this separation was somewhat difficult owing to the small numbers available, so that the results were compared with a similar division of the skulls of Bushmen and Hottentots previously examined by the present writer. Nine dimensions were chosen for investigation and the results compared in the adjoining table. The Standard Deviation of the Strandlooper skulls has been omitted owing to there being no more than six female skulls available.

STRANDLOOPERS.

DIMENSION.	Male.			Female.	
	Average.	No.	Standard Deviation.	Average.	No.
Maximum length	181·07	15	5·63	173·00	6
Maximum breadth	138·33	12	3·54	137·20	5
Basi-bregmatic height	126·09	11	4·64	121·20	5
Bi-zygomatic breadth	123·89	9	2·47	116·00	4
Naso-alveolar height	61·70	10	2·68	60·20	4
Nasal height	43·80	9	2·40	43·60	3
Nasal breadth	25·00	10	1·79	26·00	4
Basi-nasal length	93·73	11	4·33	93·20	5
Basi-alveolar length	90·70	10	5·94	90·90	4

BUSHMEN.

DIMENSION	Male.			Female.		
	Average.	No.	Standard Deviation.	Average.	No.	Standard Deviation.
Maximum length	178·83	29	6·40	175·07	14	6·95
Maximum breadth	134·66	29	4·81	133·43	14	4·86
Basi-bregmatic height.....	126·41	29	4·84	124·43	14	3·99
Bi-zygomatic breadth	121·35	17	6·51	116·42	12	4·91
Naso-alveolar height	60·24	21	4·80	60·46	13	3·18
Nasal height	42·76	25	3·87	42·75	12	2·00
Basi-nasal length	94·93	28	4·32	93·00	13	4·54
Basi-alveolar length.....	94·91	22	5·84	92·08	13	4·30

HOTTENTOTS.

DIMENSION.	Male.			Female.		
	Average.	No.	Standard Deviation.	Average.	No.	Standard Deviation.
Maximum length	183.21	19	3.47	177.45	11	4.14
Maximum breadth	133.47	19	4.31	132.18	11	4.78
Basi-bregmatic height.....	130.63	19	5.10	126.45	11	4.54
Bi-zygomatic breadth	125.76	17	5.57	118.57	7	7.29
Naso-alveolar height	65.50	18	1.26	61.30	10	1.06
Nasal height	46.22	18	3.91	43.00	11	3.04
Nasal breadth	26.33	18	2.62	25.25	8	2.22
Basi-nasal length	98.32	19	4.14	95.36	11	4.77
Basi-alveolar	99.58	19	5.50	95.36	11	4.60

The value of the difference between any two averages may be estimated by the proportion this bears to $\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$.

The Strandlooper males and females could not be contrasted owing to the small number of the latter. In comparing Bushman males (other than Strandlooper) with Bushman females, random sampling was rarely excluded, whereas in comparing Hottentot males and females sexual differences can be regarded as practical certainties. When male Strandloopers are compared with male Bushmen in only one dimension, the breadth of the head itself, the difference seems to exclude the probability of random sampling. When they are contrasted with the Hottentots in four dimensions—the breadth of the head, the height of the head, and the basi-nasal and basi-alveolar lengths—the differences are such that random sampling would appear to be absolutely excluded. It may, however, be concluded that the Strandloopers and Hottentots are distinctly different, but that no such difference is proven between them and the Bushmen. In comparing female crania, owing to the small number of examples available for any of these groups, no differences which could not be simply explained by chance are found between either Bushmen, Strandloopers, or Hottentots. In the following table the proportion of the differences between the averages of the value of the above-mentioned formula is given, contrasting not only Strandloopers, Bushmen, and Hottentots, but also the latter with Kaffirs, the natives of British Central Africa, and a collection of skulls derived from tribes in the northern part of German territory in South-West Africa, described by Dr. Widen-

mann. The latter contrast is somewhat unsatisfactory owing to the usual reason—the small number of skulls available for examination. The latter shows that the Hottentots, still more therefore the Bushmen, are distinctly separated in all dimensions from the Kaffirs, and in most dimensions from the peoples of Nyasaland, but although they probably differ equally from the Herrero tribes of German territory, the differences are not demonstrably unaffected by chance.

GROUPS CONTRASTED.

DIMENSION.	Bushman Male and Female.	Hottentot Male and Female.	Strandlooper Male and Bushman Male.	Strandlooper Male and Hottentot Male.	Bushman Male and Hottentot Male.	Hottentot Male and Kafir Male.	Hottentot Male and Angoni and Anyanja Male.	Hottentot Male and Herrero and Djagga Male.
Max. length	1·7	4·5	1·2	1·2	2·8	5·1	0·6	1·5
Max. breadth	0·8	0·7	2·7	3·4	0·5	3·0	0·04	0·5
Basi-bregmatic height	1·4	2·4	0·2	2·5	2·9	5·0	2·9	1·3
Bi-zygomatic breadth.	2·3	2·3	1·4	1·2	2·1	5·4	0·5	2·0
Naso-alveolar height .	0·1	2·8	1·1	2·4	2·8	2·8	3·1	1·0
Nasal height	0·01	2·4	1·0	1·7	2·9	2·4	1·8	0·4
Nasal breadth	0·5	1·1	1·3	1·5	0·5	1·5	1·4	1·6
Basi-nasal length	1·2	1·7	0·8	2·8	2·7	5·6	3·0	—
Basi-alveolar length..	1·6	2·3	1·1	3·9	2·6	3·5	2·7	—

A figure above 2·0 indicates considerable odds against the explanation of the differences between the respective average being random sampling, while a figure above 3·0 indicates the practical exclusion of chance.

The apparent relationships between the dimensions of the crania from the several groups having been determined, it seemed advisable to endeavour to determine if any of these groups were more mixed than the others. The groups showing the widest range of variation in dimensions might be expected to be more probably a mixture of individuals of different stocks. For this purpose the *coefficient of variation* of each group was calculated.

The coefficient of variation is one hundred times the quotient of the standard deviation divided by the actual value of the average:
$$\frac{\text{Standard deviation} \times 100}{\text{Average}} = \text{Coefficient.}$$
 Thus the standard deviation of head length in the Strandloopers is 5·6276, the average

head length is 181.07 millimetres, and the coefficient of variation

$$= \frac{5.6267 \times 100}{181.07} = 3.10.$$

The following table indicates the coefficients in the groups previously contrasted:—

GROUPS OF MALE SKULLS.

DIMENSION.	Strand- loopers.	Bushmen.	Hottentots.	Kaffirs.	Angoni and Anyanja.	Herrero and Djagga.
Maximum length	3.10	3.58	2.35	3.49	3.11	3.47
Maximum breadth	2.55	3.57	3.23	3.67	4.51	3.87
Basi-bregmatic height	3.68	3.82	3.90	2.95	4.28	3.09
Bi-zygomatic breadth	2.00	5.36	4.43	3.22	5.76	4.16
Naso-alveolar height	4.34	7.97	6.87	6.51	7.07	7.57
Nasal height	5.48	8.92	8.45	5.47	6.00	5.00
Nasal breadth	7.15	7.47	9.94	7.45	7.46	8.40
Basi-nasal length	4.62	4.55	4.21	3.89	4.30	—
Basi-alveolar length	6.54	6.15	5.52	5.36	4.46	—

From this it would appear that the Strandloopers are a less variable group than the skulls collected under the general title of Bushmen—a conclusion amply confirmed by inspection. The Hottentots show a lesser range of variation in most dimensions than do the Bushmen, though somewhat greater than either the Strandloopers or the Kaffirs.

This scarcely agrees with the idea that the Hottentots are a recent racial admixture recruited irregularly from both Bushmen and Kaffirs. It is doubtful whether this view has ever rested on a firm historical basis. On the other hand, if an equal number of Strandlooper and Kaffir skulls be taken and treated as a simple group, the resulting average dimensions and coefficients of variation agree closely with the numbers obtained from the Hottentots. Yet in the case of such a mixture it is comparatively easy by the eye to pick out the majority of the component skulls and place them under their respective categories. While in dealing with the Hottentot series, although many could be at once selected as indistinguishable from Bushmen, fewer would be taken for Kaffirs.

On the other hand, it is far less easy to separate the skulls of a mixed group of Hottentots and natives of Nyasaland. The latter are in many respects a more variable group, and, it may be, contain

among them the racial elements from which the Hottentots are derived. The skulls from the northern part of German South-West Africa and the south of Portuguese territory in Angola are more easily distinguished from the Bushmen-Hottentots, and resemble those of the Eastern Bantu group.

It has been suggested by von Luschan and others on linguistic grounds that the Hottentots are related to the Hamitic peoples of North-Eastern Africa. To inquire into this is a matter of some importance, but of great difficulty. In the first place it has to be determined who are the Hamites—a question as yet unanswered. The tribes of Abyssinia and Somaliland are possibly largely Hamitic, but no collections of skulls from these areas appear to be available. The Egyptians, ancient and modern, and the Soudanese of the Nile Valley, no doubt present a large Hamitic element. Of the osteological features of the latter little is known. Of the former there are large collections from all periods, even as far back as predynastic times, which can only be approximately dated. Are these to be looked upon as representative of the Hamites? This is quite uncertain; they undoubtedly contain a large mixture of the Mediterranean man. The relationships of the early, yet still surviving, inhabitants of the South-Eastern Mediterranean to the Hamitic stock are quite unknown, so that it may be a gross error to select them as examples of Hamites. Arthur Thomson and Randall MacIver, in a recent publication, claim to have disentangled a Negroid element from among the early inhabitants of the Thebaid. It is disputed whether the type in question represented a separate race element or only one extreme of the variation of a fairly uniform population, and if the type does represent a separate element it is not clear whether it should be looked upon as Hamitic or Negro. The only other people differing from the surrounding Negro tribes, and who may in their distant affinities be Hamitic, are the Masai. From this group only six male skulls are available, so that they can be but sparingly employed for comparison.

The Egyptian skulls chosen for comparison were from the predynastic period, and are compared in two series—one containing all the skulls, the other only those of the Negroid type. The average and deviations have been calculated from the tables in the appendix to Thomson and MacIver's work. The following table gives the ratio between the differences in the averages of the contrasted groups and

the value derived from the formula— $M_1 - M_2 : \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$

CONTRASTED GROUPS.

DIMENSION.	Hottentots and all Predynastic Egyptians.	Hottentots and Negroid Type of Egyptian.	Negroid Type and Angoni Anyanja.	Negroid Type and Masai.	All Egyptians and Masai.
Maximum length.....	1.1	0.1	0.4	0.4	0.1
Maximum breadth	0.4	1.2	1.2	0.1	0.5
Basi-bregmatic height.....	2.4	1.3	2.2	0.2	0.2
Bi-zygomatic breadth	0.8	2.2	0.8	0.0	0.7
Naso-alveolar height	4.1	0.9	2.8	4.0	1.6
Nasal height	4.8	2.2	0.9	2.4	2.2
Nasal breadth	1.3	0.7	1.0	3.7	2.2
Basi-nasal length	3.5	3.1	0.5	—	—
Basi-alveolar length	0.9	0.1	4.0	—	—

In this table a number above 2 shows a probability of a real difference existing between the contrasted groups in respect to the given dimension, while a number above 3 makes this difference a practical certainty. It will be seen that the Hottentots are quite distinct from the general average of the predynastic Egyptians, but show fewer differences from the Negroid type. While the Negroid type is in other respects separated from the Bantu-speaking Negroes from Nyasaland. The latter group was selected for comparison as appearing to present more points of similarity to Thomson's Negroid type of Egyptian than any other of the Negro groups investigated. Although in certain respects the Hottentots and the Negroids are clearly separated, it is interesting to note that in any large collection of early Egyptian skulls a certain number can be picked out by the eye as distinctly resembling the former. The Bushmen, and still more the Strandloopers, are further removed from the Negroid type than are the Hottentots. The Masai skulls differ from the Negroid type in presenting longer faces and longer and narrower noses, otherwise there is a considerable similarity in their dimensions. The small number of Masai crania leads to so large a probable error that direct contrast, as in the previous table, is of much less value. Yet even with this the Negroid type are clearly distinct from the Masai, who more closely resemble the general average of predynastic Egyptian, and especially in some dimensions the so-called non-Negroid type. The important basi-nasal and basi-alveolar dimensions are unfortunately not available. The chief interest of

this comparison is that it would tend to show that the Negroid type is not the Hamitic element, and the non-Negroid type is widely different from the Bushmen-Hottentot group.

The features of resemblance of the Negroid type with the Hottentots may be due to some former northern extension of the Bushmen and Hottentots, as has been suggested, or to the influence of the Central African Pigmies.

A comparison of the Bushman and Strandloopers with the Central African Pigmies is best made by a list of actual dimensions and indices, since only three examples of the latter skulls are available. The measurements of a Sicilian Pigmy described by Kollmann are also appended.

Dimensions.	Strandlooper.		Bushman.		Bam- bute.	Akka.*		Sicilian Pigmy.
	♂	♀	♂	♀	♂	♂	♀	♂
Maximum length	181·1	173·0	178·8	175·1	178	168	163	170
Maximum breadth ...	138·3	137·2	134·7	133·4	141	125	127	121
Basi-bregmatic height	126·1	121·2	126·4	124·4	125	—	124	130
Bi-zygomatic breadth .	123·9	116·0	121·3	116·4	125	118	109	121
Naso-alveolar height .	61·7	60·2	60·2	60·5	67	—	—	52
Nasal height	43·8	43·6	42·7	42·7	46	41	38	41
Nasal breadth	25·0	26·0	25·9	25·1	27	26	21	24
Basi-nasal length	93·7	93·2	94·9	93·0	94	92	92	95
Basi-alveolar length ..	90·7	90·9	94·9	92·1	101	100	96	84
<i>Indices.</i>								
Cephalic	76·2	79·2	75·4	76·4	79·2	74·4	77·9	71·1
Facial	50·1	51·7	49·2	51·9	53·6	—	—	42·9
Nasal	57·0	59·4	60·4	58·2	58·7	63·3	55·3	58·5
Alveolar	96·8	97·8	100	98·9	107·4	108·7	104·3	88·4

* From measurements of Flower, *Journal Anthr. Inst.*, vol. xviii.

The resemblance is not great, but individual Bushman and Strandlooper skulls approach the others closely in dimensions, and with such small numbers doubts must arise as to the representative nature of the examples available.

The great feature distinguishing the Central African Pigmies from the Bushmen is the prognathism. This character suffices to say that at present they are not the same race, it does not show that they may not have a common ancestry. The Pigmies of the forest zone, so far as it is at present known, seem to be largely mixed with Negroes. This has given rise to the colour types among them, one with a dirty yellow-coloured skin, the other black. Johnston regards

the yellow type as more probably representing the pure-blood Pigmy, and the black type as due to intermixture with bigger Negro races. The differences seem to be individual rather than tribal, which would suggest that the race mingling was extensive. In distinction from the colour Johnston shows that while the black Pigmy sometimes presents the considerable prominence and development of the buttocks—a feature greatly exaggerated in the Bushmen—the yellow Pigmy has these but poorly developed. The Negro tribes surrounding the great forest present similar prognathism. The tribes of the border zone are intermediate in physical proportion between the Pigmies and the taller Negroes.

As it has been suggested by Thomson and MacIver that the alveolar index was a doubtful test of prognathism, the various groups were also compared by testing the direct sub-nasal projection of the upper jaw. The basi-nasal, basi-alveolar, and naso-alveolar measurements being known, the dimensions of each skull were plotted out on paper, the basi-nasal line being set at a constant angle of 27° to the horizontal, as recommended by the authors just quoted.

Perpendiculars were then dropped from the nasion and the alveolar point to the horizontal base line on which the position of the basion had been marked, and the distance of these perpendiculars measured from that point. The following are the average results:—

	A. Distance of Perpendicular from Nasion.	B. Distance of Perpendicular from Alveolar Point.	C. Sub-nasal Prognathism.	Percentage Ratio of C to A.
Strandloopers	83.5	88.5	5.0	6.0
Bushmen	84.4	93.6	9.2	10.9
Hottentots	87.0	96.9	9.9	11.4
Kaffirs	93.0	103.0	10.0	10.7
Angoni, &c.	90.0	100.5	10.5	11.7
Bambute Pigmy	84.4	98.6	14.2	16.8
Negroid Type of Egyptian	90.0	96.0	6.2	6.9
All Predynastic Egyptians	89.5	90.0	0.5	0.5
Western Bantu	89.0	103.5	14.5	16.3

This table shows several very interesting features. The Strandloopers appear much more orthognathous than the Bushmen or Hottentots, and present the same relative, though not actual, pro-

portions as the Negroid Egyptian type. The Hottentots in this respect are not intermediate between Bushmen and Kaffirs, but more closely resemble the Bantu-speaking Negroes of Nyasaland—a feature previously noted in their general appearance. The Pigmy is quite distinct from all these groups, but in relative dimensions resembles the Western group of Bantu, occupying the seaward margin of the great forest zone.

From the general table of average dimensions it may be seen that the Western Bantu differ from the Eastern just in the features in which the former resemble the Pigmies. It is tempting to consider whether they may not be regarded as a Pigmy-Bantu cross in the same manner that the Hottentots have been as a Bushman-Bantu cross.

The accompanying table records the average dimensions of the skulls of each group that has been used for contrast. The standard deviations, the coefficient of variation, and the value of $\frac{\sigma^2}{N}$ are given to facilitate comparison. The probable error of each average is given to show the accuracy of the result, which depends on the number of observations available. The probable error is $\pm 0.6745 \times \frac{\text{Standard deviation}}{\text{The square root of the number of observation}}$ *i.e.*, $\pm 0.6745 \frac{\sigma}{\sqrt{N}}$. That is, the accuracy increases with the number of observations in the ratio of the square root of that number. The probable error decreases as the standard deviation decreases.

SUMMARY.

The Strandloopers appear in all respects to be a purer group than the Bushmen, and to be distinct from the Hottentots, though the influence of chance selection cannot be quite excluded, owing perhaps to the small amount of material available.

The up-country Bushmen appear intermediate between the Strandloopers and Hottentots.

The Hottentots present dimensions exactly intermediate between the preceding and the Bantu. They show in many features a smaller coefficient of variation, which tends to prove that the cross, if such is the true explanation, was of some standing and very complete. In many characters they approach the Negroes of British Central Africa more closely than the Kaffir tribes of the East Coast.

MEASUREMENTS OF

Crania in the South African

Race *	S.	B.	S.	B.	S.	S.	B.	S.	B.	B.	S.	B.	? S.
Catalogue Number	1 A.	1	2	4	6	7	13	15	18	22	24	26	27
Sex	M.	F.	? M.	? M.	M.	M.	F.	F.	M.	M.	F.	? M.	M.
Maximum glabello-occipital length	185.5	167	178	174	190	176	161	167.5	187.5	180	167	163	186
Maximum breadth	142	127	—	134	134	138	134	129	144	132	142	127	135
Basi-bregmatic height	132	114	—	130	131	123	123	119.5	132	128	120	124	125
Bi-maxillary breadth	100	86.5	—	—	—	—	—	90.5	86	98	—	93	101
Bi-zygomatic breadth	124	112	—	—	—	—	—	114	112	123	—	—	126
Naso-alveolar height	65	54	—	—	—	—	—	59	65	55	70	—	61
Orbital breadth.—Right Orbit	40	37	—	—	—	—	—	37	36	38	—	—	39
Orbital breadth.—Left Orbit	39	35	—	38	—	—	—	36	36	39	38	—	40
Orbital height.—Right Orbit	30	32	—	—	—	—	—	31	34	29	—	—	33
Orbital height.—Left Orbit	30.5	32	—	32	—	—	—	31	34	30	33	—	32.5
Bi-dacryc breadth	23	22	—	22	—	—	—	21	20	22	25	20	23
Nasal height	48	38	—	—	—	—	—	40	47	42	51	—	44
Nasal breadth	24	25	—	—	—	—	—	24	23	24.5	28	—	25
Internal bi-orbital breadth	99	91	—	—	—	—	—	93	91	99	—	—	96
Basi-nasal length	100	88	—	96	—	94.5	95.5	86	98	102	86	92	97
Basi-alveolar length	97	88	—	—	—	—	92.5	84	90.5	100	—	—	88
Internal palatal length	—	43	—	—	—	—	—	47	42	46	47	—	47
Internal palatal breadth	—	32	—	—	—	—	—	35	32	36	38	—	35
Dental length	40	—	—	—	—	—	—	—	—	37	—	—	38
Naso-malar curve	108	99	—	—	—	—	—	100	95	107	—	—	105
Frontal curve	134	116	132	123	—	141	134	138	—	119	121	129	—
Parietal curve	116	118	122	124	—	111	121	118	—	118	120	127	—
Occipital curve	122	100	112	111	—	110	109	93	122	110	105	114	123
Total sagittal curve	372	334	366	388	372	362	364	349	394	347	346	370	372
Total horizontal curve	—	472	—	490	523	502	509	479	528	490	483	500	514
Total coronal bi-auricular curve	—	271	—	—	—	300	295	282	308	278	296	277	290

INDICES.													
Length-breadth	76.6	76.0	—	77.0	70.5	78.4	74.0	77.0	76.8	73.3	85.0	69.4	72.6
Length-height	71.2	68.3	—	74.7	68.9	69.9	68.0	71.3	70.4	71.1	71.9	67.8	67.2
Breadth-height	92.9	89.8	—	97.0	97.8	89.1	91.8	92.6	91.7	97.0	84.5	97.6	92.6
Maxillary-facial	65.0	62.4	—	—	—	—	65.2	75.6	56.1	—	—	63.4	60.4
Upper facial (Kollmann)	52.4	48.2	—	—	—	—	51.8	58.0	44.7	—	—	—	48.4
Orbital.—Right Orbit	75.0	56.5	—	—	—	—	83.8	94.4	76.3	—	—	84.6	78.0
Orbital.—Left Orbit	78.2	91.4	—	84.2	—	—	80.1	94.4	76.9	86.8	—	81.2	75.0
Nasal	50.0	65.8	—	—	—	—	60.0	48.9	58.3	54.9	—	56.8	62.4
Alveolar	97.0	100.0	—	—	—	—	96.9	97.7	92.3	98.0	—	95.7	95.4
Palatal (Virchow) Staphylinic	—	74.4	—	—	—	—	74.5	76.2	78.3	80.9	—	74.5	74.0
Dental	32.2	—	—	—	—	—	—	—	37.8	—	—	—	39.2
Naso-malar	109.0	108.8	—	—	—	—	107.5	104.4	108.1	—	—	109.4	109.5
Relation of Frontal-total sagittal	36.0	34.7	36.1	—	—	39.0	36.8	39.5	—	34.3	35.0	34.9	—
of Parietal-total sagittal	31.2	35.3	33.3	—	—	30.7	33.2	33.8	—	34.0	34.7	34.3	—
Curves. Occipital-total sagittal	32.7	29.9	30.6	—	—	30.4	29.9	26.6	31.0	31.7	30.3	30.8	33.1

* B = Bushman. S = Strandlooper.

CRANIA IN MILLIMETRES.

Museum.								Dr. Duckworth's Collection.		Anatomical Museum, Cambridge.						Royal College of Surgeons.	
B.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
30	31	32	34	35	36	39A	39B	I.	II.	3731	3732	3733	1742	1743	1744	1298A	
M.	M.	F.	M.	M.	M.	M.	M.	M.	M.	M.	F.	M.	F.	F.	M.	F.	
183	178	185	172	191	182	168	175	178	180	177-5	173	171-5	182	169	182	179	
145	134	144	145	137	128	140-5	138	139	135	138	134	141-5	143	135	137	141	
133	124	122	123	—	—	124	—	116	127	132	124	122	126	123	129	123	
—	90	86	88	96	—	—	—	90	—	90	94	—	81-5	84	98	90	
—	127	119	118	120?	—	—	—	120?	123?	127	119-5	124?	116	120	124	117	
—	58	58	66	62	—	58	—	59	60	62	57	59	52	56	65	59	
—	37	37	39	38	—	36	—	38	39	40	40	38	—	—	—	—	
—	36-5	36-5	39	39	—	36	—	38-5	39	39	39	37-5	36	37	38	36	
—	28	32	32	31	—	32	—	34	29	31	32	30	—	—	—	—	
—	27	32	33	31-5	—	32	—	33	29	32	32	30-5	27-5	29	31	27	
—	20	24	19	22-5	—	22	—	21-5	26	20-5	25-5	24-5	18	20	23	21	
—	43	40	43	43	—	40	—	40	43	47	41	41-5	38	43	44	40	
—	24	26	23	27	—	23	—	25	23	25	25-5	24	25	23	26-5	25	
—	92	94	95-5	95	—	92	—	92	94	97-5	99-5	97	108	105	114	107	
96	98	96	88	87	—	90	—	89	91	97	94	93	95	90	95	91	
—	97	93	95	85	—	85	—	82	82	87	92	92	91	92	98	93	
—	50	45	52	—	—	47	—	—	—	—	—	—	41	46	45	48-5	
—	38	34	33	—	—	34	—	—	—	—	—	—	—	35	34	32	
—	—	35	36	37-5	—	—	—	—	—	—	—	—	—	—	38	41	
—	100	102	101	103	—	100	—	100	101	104	107	103	99	100-5	108	102	
—	128	139	131	145	—	128	—	132	127	137	116	—	131-5	127	133	135	
—	116	121	123	137	—	115	—	118	115	117	117	—	127	117	132	124	
—	108	116	111	116	—	106	—	107	122	112	114	—	102	105	106	109	
384	352	376	365	398	—	349	—	361	387	364	366	—	360	349	371	368	
519	501	520	505	—	—	—	—	501	—	—	—	—	521	485	511	488	
316	284	306	298	—	—	301	—	285	—	—	—	—	427	416	415	426	
79-2	75-3	77-8	84-3	71-7	—	83-6	78-9	78-1	75-0	77-7	77-5	82-5	78-6	79-9	75-3	78-8	
72-7	69-7	65-9	71-5	—	—	73-8	—	65-2	70-6	74-4	71-7	71-1	69-2	72-8	70-9	68-7	
91-7	92-5	84-7	84-8	—	—	88-2	—	83-5	94-1	95-6	92-5	86-2	88-1	91-1	94-2	87-2	
—	64-4	67-4	75-0	64-6	—	—	—	68-9	—	68-9	60-6	—	63-8	66-7	66-5	65-0	
—	45-7	48-7	55-9	51-7	—	—	—	49-2	48-8	48-8	47-7	47-6	44-8	46-7	52-5	—	
—	75-7	86-5	82-0	81-6	—	88-9	—	87-2	74-4	77-5	80-0	78-9	—	—	—	—	
—	74-0	87-7	84-6	80-7	—	88-9	—	85-4	74-4	82-0	82-0	84-0	76-4	78-4	81-6	75-0	
—	55-8	65-0	53-5	62-8	—	57-5	—	62-5	53-5	53-2	62-2	57-8	65-8	53-5	60-2	62-5	
—	99-0	96-9	108-0	97-7	—	94-5	—	92-1	90-1	89-7	97-9	98-9	95-8	102-2	103-2	102-2	
—	76-0	75-6	63-5	—	—	72-3	—	—	—	—	—	—	65-5	64-9	—	66-0	
—	—	36-4	40-9	—	—	—	—	—	—	—	—	—	—	—	40-0	45-1	
—	108-7	108-5	105-8	108-4	—	108-7	—	108-7	107-4	106-7	107-5	106-2	106-4	105-8	106-9	108-2	
—	36-4	37-0	35-9	36-4	—	36-7	—	37-0	34-9	37-4	33-4	—	36-5	36-4	35-8	36-7	
—	33-0	32-2	33-7	34-4	—	32-9	—	33-0	31-6	32-0	33-7	—	33-3	33-5	35-6	33-7	
—	30-7	30-9	30-4	29-1	—	30-4	—	30-0	33-5	30-6	32-9	—	28-3	30-1	28-6	29-6	

MANDIBLES.—MEASUREMENT IN MILLIMETRES.

Race	South African Museum.						Cambridge.	R.C.S.
	B.	B.	S.	?S.	S.	S.	S.	
Catalogue Number	1	13	24	27	34	37	1743	1298A
Sex	—	—	—	—	—	—	F.	F.
Total Facial height	90	100	—	103-5	107	—	97-5	98
Bi-zygomatic breadth	112	114	—	126	118	—	120	117
Bi-condyloid breadth	98	102	102	105	103-5	—	102	100
Max. Bi-gonial breadth	79-5	75	80	91	84	—	89	84
Symphysial height	24	29	31	35	33	32	28	31
Molar height	20	22	23	25	27	22	24	23
Ramus height	31	39	34	36	38	40	33	36
Ramus breadth	32	36-5	33	37	34	34	34	32
Condyllo-coronoid breadth	42-5	45	39	41	44	—	29	32
Bi-gonial Curve max.	179	—	—	203	190	—	180	173
INDICES.								
Total Facial	80-4	87-7	—	82-1	90-7	—	81-2	83-8
Gonio-Zygomatic	71-0	65-8	—	72-2	71-2	—	74-2	71-8
Mandibular	83-3	75-8	74-2	71-4	81-8	—	—	—

The Pigmies appear distinct, but have similar relative proportions to the tribes in their vicinity.

The Western Bantu in the characters in which they differ from the Eastern resemble the Pigmies.

The Masai are distinctly different from the Negroid type of Egypt, and apparently from the Bantu, although this is not clearly demonstrated as free from chance.

If the Negroid type in Egypt be admitted to be real in characters it would appear to approach the Strandlooper-Bush-Hottentots rather than the Bantu Negroes. This may possibly support the archaeological evidence suggesting a former northern extension of the latter group.

Dwarf peoples bearing a resemblance to Bushmen are said to exist on the slopes of Mount Elgon, in Laikipia, and other points in Eastern Central Africa. From these districts no material is available.

The present geographical situation is, then, that the apparently purest dwarf race is situated, or was recently situated, on the coast at the extreme south of the continent, the furthest point to which they could retreat under pressure. The more inland representatives appear mixed.

Eastern Africa with a part of South-Western Africa are occupied by a distinct tall race of Bantu speech. The Hottentots seem to be intermediate in character as in position between these. A group of Negroes in the centre of Africa around Lake Nyasa are also in some features intermediate, though tall and of Bantu speech.

The north-eastern corner is occupied by a different people, the Somali and Gallas, of whom the physical characters are but little known. Further south the Masai, who may be allied to this group, are apparently distinct in many respects, at least from the Negroes of Bantu speech. The forest zone is occupied by Pigmies, who, though in some respects resembling the Bush people, have other features closely allied to the Negroes to the north of this district.

The tribes of Bantu speech inhabiting West Africa between the Rio del Rey and the Congo, though in most characters they resemble the eastern tribes of the same linguistic stock, in others resemble the Pigmies.

In predynastic times there were in Upper Egypt people having some characters resembling the Bush-Hottentot group, and possibly also the Bantu Negro, but widely different from the peoples of the eastern coast, as represented by the present-day Masai.

It thus seems possible to conceive the following reconstruction of the early history of Southern Africa:—

That the first inhabitants of Southern Africa were of the Bushman type, and spread over the whole of this part of the continent.

That in the pastoral country around the Great Lakes and the Upper Nile Valley the tall Negro tribes developed, or at least that they occupied this country. That subsequently pressure was brought to bear on these peoples from the east, driving a large section of them south. These in turn drove the Bushman type before them as far as the extreme southern coast. Others took refuge in the forest zone, and in time mingled with the peoples around. Some of the latter Negroes passed north of the forest zone to the Atlantic coast. These later, pressed on by the races from across the Sahara, were in part driven back out of the forest—a process still continuing—or down to the sea; when in the unsuitable environment their physique deteriorated. Some of these Negroes may have been driven down the Nile Valley, taking possibly with them, or driving in front of them, any survivors of the northern Bush races, who thus came into contact with Egypt. On the other hand, there is no evidence to show that the Bush peoples may not have been previously far to the north.

There are said to be dwarf races in Central Morocco, and in the Neolithic station at Brassempouey, in France, a statuette has been found which represents the race living there at that time as short and steatopygous.

[Since the above was written I have received two additional Strandlooper skulls, Nos. 39A and 39B, both of which are broad headed. Their measurements have been included in the table but not in the averages and tables of variation. They support the view that the primitive Bushman stock was broader headed.]

SECTION II.

THE BONES OF THE SKELETON.

Portions of twelve skeletons were available, but unfortunately none were quite complete, so that for each series only a limited number of comparisons could be made.

Two of them were from Humansdorp—a larger, probably a male, and a smaller, probably a female. These, referred to as Humansdorp 1 and 2, are in the South African Museum, Cape Town. Of the remainder, from caves in the Knysna district, Nos. 7 and 8 are probably males, though, as the pelvic bones are lacking, this description of sex is only tentative. No. 34 is a male. Some odd bones, appearing to have belonged to a female, are referred to as South African 1. All these are from the South African Museum.

In addition the osteological collection at the Anatomical Museum of the University of Cambridge possesses two nearly complete skeletons, Nos. 3731 and 3732, and some odd bones, referred to as C1, C2, and C3 respectively. Nos. 3732 and C1 were female, 3731, C2, and C3 male. All these are from caves in the Knysna district.

With the exception of No. 34 in the South African Museum the skeletons had not been mounted, owing to the lack of certain bones, so that the stature could not be directly ascertained. For purposes of comparison illustrative examples of other races have been taken from Turner, "Report on the Human Skeletons," *Challenger Reports*, and Duckworth, "Morphology and Anthropology."

The available measurements will be considered *seriatim*.

LUMBAR VERTEBRÆ.

These are usually studied by measuring the heights of the centra of the vertebræ, from the mid-point of the superior margin to the mid-point of the inferior margin of the anterior and posterior surfaces respectively. From these an index is constructed which serves to show the degree of curvature of the spine. When the index is over 100 the posterior height is the greater and the spine has an anterior concavity, when it is below 100 the anterior height is greater and the spine is convex anteriorly. It must, however, be remembered that in life the intervertebral discs modify and may entirely reverse the direction of the curve shown by the bony centra. These discs are very large in the Bushman, and provide for a greater mobility of the lumbar region of the spinal column.

$$\text{Index} = \frac{\text{The posterior height of the centrum} \times 100}{\text{The anterior height of centrum, or for the whole lumbar spine}}$$

$$\text{Index} = \frac{\text{The sum of the posterior heights of the centra} \times 100}{\text{The sum of the anterior heights of the centra}}$$

No. of Lumbar Vertebrae.	Humansdorp.						Knysna.		
	1, Male.			2, Female.			2731, Male.		
	Ant.	Post.	Index.	Ant.	Post.	Index.	Ant.	Post.	Index.
I.	21	23	109·5	13	12	92·3	25	22	88·0
II.	21	24	114·3	14	15·5	110·7	25	22	88·0
III.	20	23	115·0	14	15	107·1	23·5	23	97·9
IV.	21	22	104·7	14·5	14	96·5	22	23	104·5
V.	19	19·5	102·6	16	12	75·0	22	20	90·9
Total.....	102	111·5	109·3	71·5	68·5	95·8	117·5	110	93·6

No. of Lumbar Vertebrae.	Knysna.								
	2732 Female.			C1 Female.			S.A.1 Female.		
	Ant.	Post.	Index.	Ant.	Post.	Index.	Ant.	Post.	Index.
I.	21	24	114·3	22·5	24	106·6	23	24	104·3
II.	21·5	23	107·0	22	25	113·6	22	24	109·1
III.	21	22	104·8	23	23	100	23·5	23·5	100
IV.	22·5	22	97·8	22	21·5	97·7	23	22	95·6
V.	24	19	79·2	24	20	83·3	26	22	84·6
Total.....	110	110	100	113·5	113·5	100	117·5	115·5	98·3

These indices may be contrasted with those given by Turner ("Bones of the Human Skeleton," *Challenger Reports*, vol. x., pt. ii., p. 67):—

No. of Lumbar Vertebrae.	Bushmen.			Euro-peans.	Andaman Islanders.	Negroes.	Austra-lians.
	Male, 2.	Female, 4.	Total, 6.	12.	2.	3.	5.
I.	98·7	104·4	102·5	106·8	111·3	108·8	114·4
II.	101·2	110·1	107·1	101·5	105·6	104·2	112·3
III.	106·4	103·0	104·1	95·4	102·0	100·0	108·0
IV.	104·6	96·9	99·4	93·0	91·8	93·0	103·7
V.	96·7	80·5	85·9	83·6	84·2	89·0	91·4
Total	101·4	98·5	99·5	96·0	99·0	99·0	106·0

In Turner's Bushman the general lumbar index was 106, and the index of the fifth lumbar vertebræ was 95.

Cunningham from three Bushman skeletons found a mean lumbar index of 106·6, with an individual range from a mean index of 115·9 in the first to 95·3 in the fifth.

From fourteen male Andamanese Cunningham obtained a mean total index of 106·3, and from nine females 102·4; from seven male Negroes an index of 106, and from three females one of 103·4.

The Central African Pigmies present similar indices to the other dwarf races, but smaller than for Negroes or Australians, viz. :—

Bambute (Shrubsall)	102.
Akka (Flower)	..... 102·6.

The two Humansdorp skeletons thus yield widely different results, the larger being distinctly simian in its characters. It has the largest lumbar index yet recorded, and resembles the Simiidæ in that in the lowest as in the highest lumbar vertebræ the centrum is wedge-shaped with a base directed posteriorly. The smaller bones present the opposite features, but the individual not being full grown comparison is very uncertain. So far as the bones go the Bushmen (and Strandloopers) should therefore have a nearly straight lumbar spine. Cunningham and Turner have, however, shown that in life this is not the case, the shape of the individual discs, which are thicker anteriorly, sufficing to reverse the attitude determined by the proportions of the bones.

The races of mankind have been classified by means of the index of the lumbar spine into three groups :—

1. *Kurtorachic*. Index below 98, the spine being strongly convex anteriorly. In this category come most Europeans and Chinese.
2. *Orthorachic*. Index 98–102, the spine being nearly straight. The Eskimo are examples of this class.
3. *Koilorachic*. Index above 102, the lumbar spine being concave anteriorly. Polynesians, Andamanese, Negroes, and Australian natives belong to this class, as do the Simiidæ.

Previous observations place the Bushmen in the latter class; the present series of skeletons, however, fall in the second class with straighter spines. The limits of variation, however, are great, examples being found with indices ranging from 95·8 to 109·3, and the number of specimens so small that no definite classification is quite certain. The average falls near the limits between classes 2 and 3.

THE SACRUM.

The measurements of this bone usually taken are the *length* from the middle of the anterior surface of the upper border, the promontory to the middle of the anterior surface of the lower border, and the *breadth* between the most distant points at the same level of the alæ.

From these a *Sacral Index* is computed :—

$$\text{Index} = \frac{\text{Breadth of Sacrum} \times 100}{\text{Length of Sacrum}}$$

The following classification is adopted :—

Nomenclature.	Index.	Illustrative Examples.
Dolichohierie	Below 100	{ Bushman (Turner). Bantu Negro. Simiidæ.
Sub-platyhierie	100-106	{ Andamanese. Australian native. Negro. Chinese.
Platyhierie	Above 106	{ Eskimo. Europeans. Ancient Egyptians.

Sacra were available for examination in the present series—

	Humansdorp.		Knysna					
	Male, 1.	Female, 3731.	Male, C2.	Male, C3.	Male, 34.	Female, 3732.	Female, C1.	Female, S.A.1.
Sacral length	109	89	106	86·5	80	92	90	88
Sacral breadth ...	93	91	100	87	80	100	97	94
Index	85·3	102·2	94·3	99·4	108·7	108·7	107·7	106·8

The average value for the index is: Male, 95·3; Female, 108·0. If the bones previously described be included the averages are: Male, 94·7; Female, 101·3. The female average is probably too low, because one sacrum had an index of only 81, and may have represented an exceptionally small breadth.

Again the wide range of variation and the small number of specimens prevent any very definite statement as to classification, though inclusion in the dolichohieric group would appear the more probable.

The indices for other races collected from various sources, especially Turner's Monograph, are:—

	Male.		Female.	
	No.	Index.	No.	Index.
Hottentots	2	82	3	85
Kaffirs	6	92·8	1	107
Negroes.....	29	106	10	98·8
Andamanese.....	8	94	9	106
Bambuté	1	90·1	—	—
Akka	—	—	1	96·5

THE PELVIS.

Five pelves were available for examination, though for various reasons a complete series of measurements could not be taken.

The measurements comprised:—

The Maximum Breadth between the Iliac Crests.

The Height of the Innominate Bone from the iliac crest to the lowest point on the tuberosity of the ischium.

The Breadth of the Innominate Bone between the extremities of the anterior and posterior iliac spines.

The Maximum Transverse Diameter of the Pelvic Brim from the mid-point of the promontory to the mid-point of the upper border of the posterior surface of the symphysis pubis.

From these three indices may be computed:—

$$\text{The Pelvic Index} = \frac{\text{Breadth between iliac crests} \times 100}{\text{Height of innominate bone}}$$

$$\text{The Pelvic Brim Index} = \frac{\text{Antero-posterior diameter of the brim} \times 100}{\text{Transverse diameter of the brim}}$$

$$\text{The Innominate Index} = \frac{\text{Breadth of innominate bone} \times 100}{\text{Height of innominate bone.}}$$

The pelvic index was computed in two skeletons:—

	C3 ♂	34 ♂
Maximum distance between iliac crests...	201.....	191
Height of innominate bone.....	177.....	172
Pelvic index.....	880.....	90·1

Turner obtained from one male an index of 91.

This compares with:—

Bambute 1 ♀	89·5 (Shrubsall).
Negro 4 ♂	80 (Turner).
Andamanese 2 ♂	76·5 (Turner).
European ♂	79 (Vernean).
" ♀	74
Chimpanzee	97
	Average of the three larger forms of Simiida 87 (Duckworth).

INNOMINATE INDEX.

	Humans- dorp.	Knysna.			
	1 ♂.	3731 ♂.	C3 ♂.	3732 ♀.	S.A.1 ♀.
Innominate Height.....	164	175	177	177	169
Innominate Breadth.....	118	121	125	118	130
Index.....	71·9	69·1	70·6	66·7	76·8

The average being : Male 70·5, Female 71·7, which contrasts with—

Bambute 1 ♂	68·4 (Shrubsall).
Negroes 3 ♂	80·7 (Turner).
" 2 ♀	98·5
Andamanese 2 ♂	89·0 (Turner and Flower).
" 2 ♀	91·0
European ♂	74·5 (Vernean).
" ♀	79·1
Gorilla ♂	55·3 (Duckworth).

PELVIC BRIM INDEX.

	Humans- dorp.	Knysna.			
	1 ♂.	C3 ♂.	3732 ♀.	S.A.1 ♀.	34 ♂.
Transverse diameter.....	105	100	113	100	97
Antero-posterior dia- meter.....	94	86	104	91	90
Index.....	89·5	86·0	92·1	91·0	92·8

Average : Male, 87·7; Female, 92·0.

The average index of eight female Bushmen previously described is 89, and of five males, 99.

Contrast :—

Bambute, 1.....	95·8 (Shrubsall).
Akka, 1.....	100·0 (Flower).
Negroes, 35.....	92·7 (Turner).
„ 31.....	88·3
Andamanese, 12.....	98·0 (Turner and Flower).
„ 16.....	91·7
European.....	80·0 (Vernean).
„	78·0
Simiidæ	128–151 (Turner, Duckworth).

The pelvic brim indices of different races have been classified into three divisions :—

Nomenclature.	Index.	Illustrative Examples.
Dolichopellic.....	Above 95.....	Australian Natives.
„	„	Andamanese.
„	„	Bantu Negroes.
„	„	Bushmen?
Mesatipellic	95–90	Negroes.
„	„	Melanesians.
Platypellic	Under 90.....	Europeans.
„	„	Chinese.

The great range of variations in all races, and the small number of specimens as yet examined, throws some doubt on the utility and permanence of this scheme.

SCAPULA.

The measurements taken were :—

The *Length*, from the superior to the inferior angle.

The *Breadth*, from the glenoid margin to the vertebral border at its point of intersection, with a line prolonged from the spine of the scapula.

The *Scapulo-spinal Angle*, included between the line of the scapular spine and that of the vertebral border.

$$\text{The Scapular-Index} = \frac{\text{Breadth} \times 100}{\text{Length}}.$$

	Humansdorp.				Knysna.	
	1.		2.		7.	
	R.	L.	R.	L.	R.	L.
Length.....	126	127	—	103	—	—
Breadth.....	84	84	80	67	—	129
Scapular Index.....	66·6	66·1	—	65·1	—	65·8
Scapulo-spinal Angle.....	75°	74°	74°	74°	—	75°

Average Index, 65·9.

The previously known averages were :—

Bushmen (10)	66·2
Hottentots (2)	60·0
Negroes (100).....	69·7 (Turner).
Andamanese (27).....	70·2
Europeans (46).....	65·3
Akka (2).....	80·3 (Flower).
Bambute (1).....	87 (Shrubsall).
Gorilla.....	70·4
Simia.....	69·3 (Duckworth).
Hylobates.....	97·0

The Pigmy races are thus more Simian than the others, while it has been shown that the human foetus approaches still nearer to that type.

THE LONG BONES.

The maximum length taken between two parallel planes placed vertically to the scale is the most important measurement. In the case of the Femur it is usual to also take the oblique length, as obtained when both femoral condyles are in contact with the fixed plane of the osteometric board. In the Tibia it is usual to omit from measurement the spine, which is accomplished by having a small hole in the fixed plane to accommodate it.

Transverse measurements are taken of the Femur and Tibia. In the Femur the antero-posterior and transverse diameters are taken immediately below the lesser trochanter and again at the middle of the shaft.

An index has been computed from the formula—

$$\frac{\text{Antero-posterior diameter} \times 100}{\text{Transverse diameter}}$$

The lower the index from the upper part of the shaft of the bone the greater the degree of flattening, to which the name platymeria is given. Manouvrier regards this as due to the extension of the area of attachment of the quadriceps extensor cruris muscle when in constant and powerful action. Not so much as an extension of the leg but in holding the knee firm while the trunk is extended on the lower limb, as in climbing. In this action the gluteus maximus plays an important rôle, and its attachment to the bone being at this level may also practically assist in widening the femoral shaft. The condition is common among mountaineers; Duckworth ("Morphology and Anthropology," p. 317 *et seq.*) throws some doubt on this explanation, but shows that none more credible has as yet been brought forward.

The average index for the upper region of the femur in the Bushmen skeletons examined is 80·3. In average recent European femora the index is 86, while an extremely platymeric femur of prehistoric age gave an index of 56.

The diameters at the middle of the shaft show the degree of projection of the *linea aspera*, a condition known when marked as pilastering. This is due to the development of the attached muscles, or alternatively to the throwing out of bone to resist bending under the weight of the body, such as occurs in rickets. The higher the index the more the pilastering. The average index in the Bush skeletons is 128·2.

Contrast:—

Negroes (20).....	105·8	} Topinard.
Modern French (15).....	109·2	
New Caledonians (13)	127·6	
Rickety Subjects (2)	111·1	

This shows a high degree of pilastering among the Bushmen to a degree which would appear to exclude rickets as a cause.

The transverse measurements of the tibia are taken at the level of the nutrient foramen.

$$\frac{\text{Transverse diameter} \times 100}{\text{Antero-posterior diameter}} = \text{Index.}$$

A low index shows lateral flattening of the tibial shaft, the area of attachment of the *tibialis posticus* muscle in extreme cases standing out as a flange. This condition is frequently associated with rickets.

when the flange may be looked on as a strut thrown out to resist bending, and it is found not only among rickety subjects in Europe, but constantly among the ill-fed peoples of Central Australia. On the other hand, it may occur without evidence of rickets, and Manouvrier attempts to associate it with a mountainous habitat and to explain its occurrence as due to the over-action of the tibialis posticus muscle. The condition appears in late adolescence chiefly in the male sex, and among any population both platycnemic and ordinary tibiæ may be found. It appears to have no racial significance.

The average index for the Bushmen is 68·7.

Contrast:—

Modern French, 88·2	Manouvrier.
Negroes (85·0)	„
Guanches of Grand Canary (66) ...	Topinard.

The Bushmen thus present in a marked degree platymeric and pilastered femora and platycnemic tibia.

Femur.	Humansdorp.		Knysna No. 7.			S.A. 1.		3732		3731		C2.	37.
	R.	L.	R	L.	L.	R.	L.	R.	L.	L.	L.		
Max. length	371	367	398	—	—	403	404	397	401	399	—	—	
Oblique length...	369	365	396	—	393	387	400	400	395	399	397	385	
Diameters below lesser trochanter—													
Ant.-post.	20	20	22	21	—	—	21	21	23·5	23	21	21	
Transverse.....	25·5	26	29	29	—	—	27	27	25	27	25	26	
Index	78·4	76·9	75·8	72·4	—	—	77·8	77·8	94·0	85·2	94·8	80·8	
Diameter Mid Shaft—													
Ant.-post.	—	—	30	29	—	—	26	25	30	28	31	24·5	
Transverse.....	—	—	23	23	—	—	20	21	23	22	22	20	
Index	—	—	130·4	126·1	—	—	130·1	118·0	130·4	127·3	140·9	122·5	

Tibia.	Humansdorp.		Knysna.			S.A. 1.		34	3732		3731		37.
	R1.	L.	R7.	L.	L8.	R.	L.	347	R.	L.	R.	L.	L.
Length	298	298	335	340	344	317	318	347	335	335	332	337	326
Diameter of level of Nutrient Foramen—													
Ant.-post.	27·5	26	31	32	32	—	—	—	29	31	31	30	27
Transverse.....	19	19	21·5	21	23	—	—	—	20	21	21	20	18
Index	69·1	73·1	69·4	65·6	71·9	—	—	—	68·9	67·7	67·7	66·7	66·7

LENGTH OF REMAINING LONG BONES.

	Humansdorp 1.				Humansdorp 2.			
	R.		L.		R.		L.	
Humerus.....	277	277	255	253				
Radius	215	216	188	191				
Ulna.....	228	226	205	203				
Fibula	292	—	—	—				
Clavicle	—	—	—	—				

	Knysna.														
	7.		8.		S.A. I.	34.	3732.		3731.		C2.		C3.		37.
	R1.	L.	R.	L.	R		R.	L.	R.	L.	R.	L.	L.	R.	L.
Humerus ...	291	285	—	296	286	267	276	274	271	267	289	278	277	—	270
Radius	—	220	—	247	—	217	216	218	217	—	—	—	212	217	—
Ulna	232	233	—	251	—	230	—	232	237	—	212	—	—	—	—
Fibula	335	—	—	—	—	322	—	321	323	—	—	—	—	318	—
Clavicle.....	—	132	137	138	—	—	—	—	—	—	132	—	—	—	—

The most usual comparisons are the relative lengths of the various segments of the limbs, of which a large number would be made, but four only are generally accepted.

The relative lengths of the upper and lower segments of the leg known as the Tibio-femoral Index :—

$$\frac{\text{Length of tibia} \times 100}{\text{Length of femur}}$$

The relative lengths of the proximal segments of the upper and lower limb. Humero-femoral Index :—

$$\frac{\text{Length of humerus} \times 100}{\text{Length of femur}}$$

The relative lengths of the proximal and distal segments of the upper limb. Radio-humeral Index :—

$$\frac{\text{Length of radius} \times 100}{\text{Length of humerus}}$$

The relative length of the upper limb exclusive of the hand to that of the lower limb exclusive of the foot. Intermembral Index :—

$$\frac{\text{Length of humerus and radius} \times 100}{\text{Length of femur and tibia}}$$

Indices.	Humansdorp.				Knysna.										
	Larger.		Smaller.		7		8		34	3732		3731		C3.	37
	R.	L.	R.	L.	R.	L.	R.	L.	M.	R.	L.	R.	L.	L.	M.
Tibio-femoral	82·2	83·0	—	—	84·8	—	—	—	89·7	83·7	83·7	84·3	84·4	—	84·7
Humero-femoral ...	..	75·9	—	—	73·5	—	—	—	69·0	69·0	68·5	68·6	66·9	69·7	70·1
Radio-humeral .....	..	78·0	73·7	75·5	75·6	77·2	—	83·4	81·2	78·3	79·6	80·1	—	76·5	80·4
Intermembral .....	..	73·5	—	—	69·9	—	—	—	65·8	66·9	66·9	67·1	—	—	68·5

M = Mean of both sides.

Tibio-femoral Index :—

Average value in the present series, 84·1.

The average value of this in all Bush skeletons of which a record was available is: Male, 83·1; Female, 81·6.

European	80-82	(Manouvrier).
Hottentots (1)	79·3	(Fritsch).
Andamanese (25)	84·4	(Flower).
Negritos (4)	83·9	
Kaffir males (4).....	81·5	(Fritsch).
Negroes male (32)	82·9	(Topinard).
„ female (10).....	84·4	„
Bambute male	80·1	(Shrubsall).
Akka „	83·0	(Flower).
„ female	81·1	

The higher the index the more the proportion between the bones approaches that found in the apes.

Humero-femoral Index :—

Present collection, 70·0.

	Male.	Female.
Bushmen (11)	70·3	72·0 (Various observers).
Hottentot.....	—	72·0 (Fritsch).
Kaffir (5)	70·6	—
Negroes (40)	71·2	— (Turner, Humphry, Broca).
Andamanese (28)	70·3	69·2 (Turner and Flower).
Bambute	71·2	— (Shrubsall).
Akka	72·0	71·9 (Flower).
European	72·5	— (Manouvrier).

Radio-humeral Index :—

Present series, 78·3.

Contrast :—

	Male.	Female.	
Bushmen (13)	78·7	76·1	(Various observers).
Bambute (1).....	80·1	—	(Shrubsall).
Akka (2)	76·2	82·9	
Kaffirs (5).....	78·7	—	(Fritsch).
Negroes (115)	78·2	78·3	(Turner, Humphry, Hamg. Broca, Topinard, &c.).
Andamanese (29).....	81·4	80·7	(Flower and Turner).
Veddahs	79·8	78·8	(Sarassin).
Negritos	—	83·7	(Topinard).
Europeans.....	72·5	72·1	

The Simiidæ have indices over 80.

Intermembral Index :—

Present series, 68·1.

Contrast :—

	Male.	Female.	
Bushmen (12)	68·5	69·0	(Various observers).
Hottentot	—	68·8	(Fritsch).
Bambute	72·0	—	(Shrubsall).
Akka	67·7	72·9	(Flower).
Kaffir (5)	69·4	—	(Fritsch).
Negroes (44).....	68·4	68·4	(Turner, Broca, Humphry).
Andamanese.....	69	67·5	
Europeans	69·7	69·7	(Turner and Topinard).

This index in all the groups of Simiidæ has a value well over 100.

THE PROPORTIONS OF THE LENGTH OF THE LONG BONES TO THE
TOTAL HEIGHT OF THE SKELETON.

The total skeletal height was recorded for the mounted skeleton in the South African Museum, No. 34. The total height and length of the bones are recorded for two Bushman skeletons in the museum of the Royal College of Surgeons. The proportions are given in the following table, and are contrasted with the values obtained from other races.

Proportions to Stature = 100.

Race.	Strand- looper. S.A. 34.	Bushman.		3 Bush- men (Hum- phry).	Akka (Flower).	Bam- bute (Shrub- sall).	25 Negroes (Hum- phry).	4 Chim- panzees (Hum- phry).
		R.C.S. 1300.	R.C.S. 1301.					
Sex	M	M	F	M	F	M	M	M
Bone—								
Femur ...	27·1	26·9	27·1	27·8	27·5	27·8	27·4	24·8
Tibia	24·4	22·5	23·7	23·9	22·3	22·2	23·2	20·0
Humerus	18·7	18·9	19·0	20·0	19·8	19·8	19·5	24·4
Radius ...	15·2	15·6	14·9	15·4	15·7	15·8	15·2	22·0
F. + T. ...	51·5	49·5	50·8	51·7	49·8	50·0	50·6	44·8
H. + R. ...	33·9	34·5	34·0	35·4	35·5	35·7	34·7	46·4

The net result of the additions to the averages has been to mark out the Bushman race in some respects more sharply than before, and to show clearly that although they approach the Simian type more closely than the other branches of mankind, the gap separating the two is very great.

DESCRIPTION OF FIGURES.

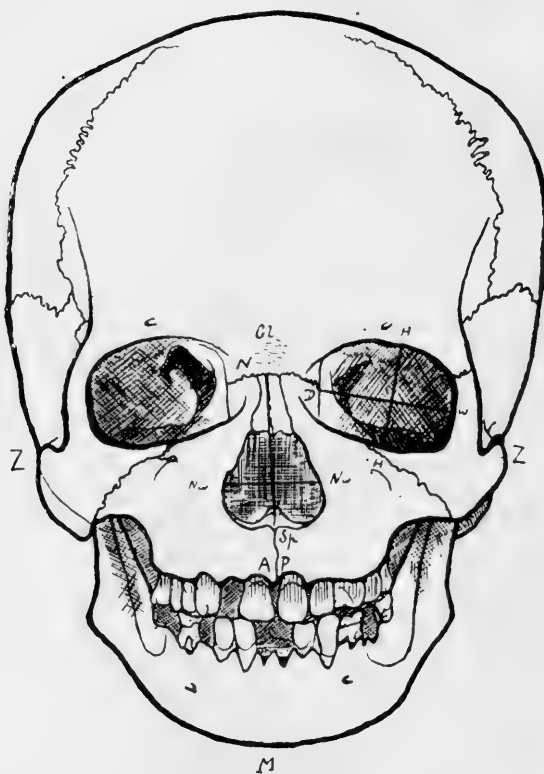


FIG. 1.—NORMA FACIALIS, OR FACE VIEW OF A BUSHMAN'S SKULL.

A.P = Alveolar Point.
 D = Dacryon.
 H-H = Orbital Height.
 N = Nasion.
 Gl = Glabella.
 Sp = Nasal Spine.
 D-W = Orbital Breadth.

N-Sp = Nasal Height.
 Nw-Nw = Nasal Width, the greatest
 width across the apertura pyriformis.
 N-A.P = Upper Facial Height.
 Z-Z = Bi-zygomatic Breadth.
 M = Mental Point.
 N-M = Total Facial Height.

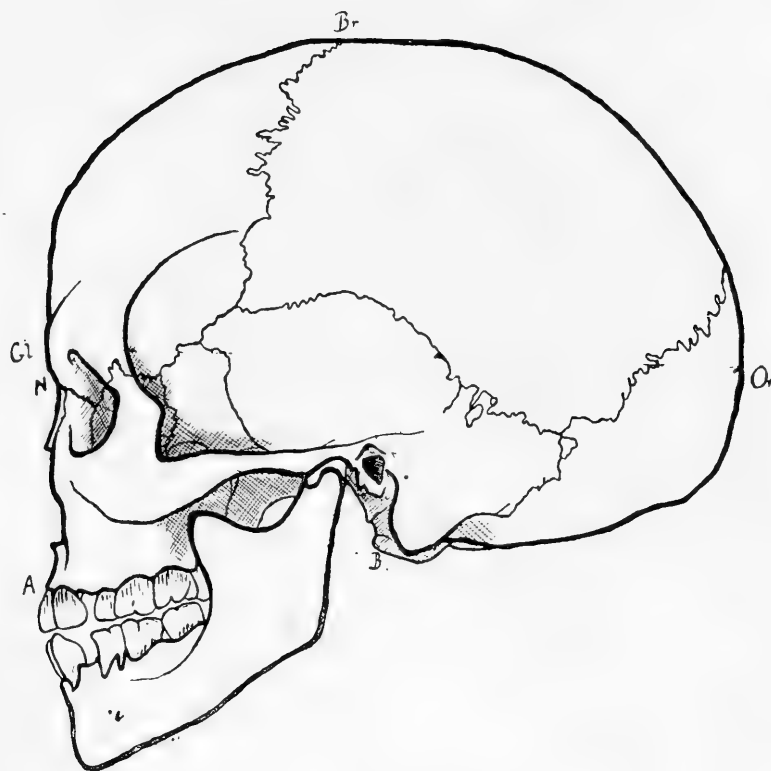


FIG. 2.—NORMA LATERALIS.

Br = Bregma.

B. Indicates neighbourhood of the Basion or anterior border of the foramen magnum, not actually seen in this view, being hidden by the occipital condyle.

A = Alveolar Point.

N = Nasion.

G1-Oc = Maximum Length.

B-Br = Basi-Bregmatic Height.

B-N = Basi-Nasal Length.

B-A = Basi-Alveolar Length.

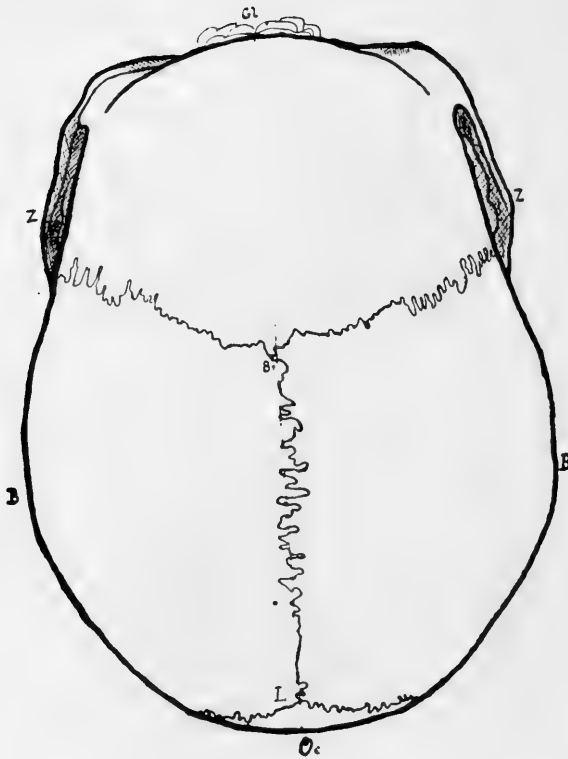


FIG. 3.—NORMA VERTICALIS.

Gl = Glabella.

Oc = Occipital Point.

Gl-Oc = Maximum Length.

B-B = Maximum Breadth.

Z-Z = Bi-zygomatic Breadth.

Br = Bregma.

L = Lambda.

7.—*Seventh Contribution to the South African Coleopterous Fauna.*—
By L. PÉRINGUEY, *Director.**

DESCRIPTION OF NEW SPECIES OF COLEOPTERA IN THE COLLECTION
OF THE SOUTH AFRICAN MUSEUM. (Plates V. and VI.)

FAMILY CICINDELIDÆ.

GEN. DROMICA (COSMEMA), Dej.

DROMICA (COSMEMA) CONVEXICOLLIS, n. sp.

♂ : Supra æneo-nigra lateribus prothoracis, elytrorum subtusque æneo-cæruleis; femoribus viridibus, tibiis antennarumque articulis basalibus quatuor sub-rufescentibus, labro flavescente, late nigro marginato, palpis flavis, articulo ultimo apice anguste infuscato; capite lato, inter oculos valde longitudinaliter plicato; prothorace latitudine longiore, antice haud sensim postice magis strangulato, disco præsertim in partem posticam valde elevato convexo, fere sub-gibboso, transversim strigillato; elytris elongatis, pone humeros ad medium inflexis, deinde parum incrassatis, ad apicem acuminatis ibidem spina valida acuta valde divergente utrinque munitis, supra convexis sutura acuta, punctis profundis ad latera oblitteratis a basi usque ad apicem æqualibus, interstitio angusto separatis obsitis, in callo humerali macula parva rotunda, pone medium altera ovata supra marginali et prope apicem vitta maculiformi flavo albidis utrinque ornatis.

This species is very closely allied to *D. cordicollis*, Chaud., which I erroneously stated to be synonymous with *D. gruti*, Chd.,† and

* The first four Contributions were published in the Transactions of the South African Philosophical Society, 1885-1892; the fifth and sixth in the Annals of the South African Museum, vol. i., p. 240, and vol. iii., p. 167.

† Descriptive Catal. S. Afr. Coleoptera, Cicindelidæ, p. 86, Trans. S. Afr. Phil. Soc., vol. vii., 1892.

the differences between the two can be detected only by comparing these two species. In *D. cordicollis* ♂ the labrum is only very slightly edged with black, whereas in *D. convexicollis* it is broadly marginate; the shape and plication of the head are nearly alike in both species, but while the discoidal part of the prothorax of *D. cordicollis* is highly raised, it falls abruptly behind above the posterior strangulation; in *D. convexicollis* it is regularly convex and more gibbose, and the prothorax itself is a little narrower; the shape and sculpture of the elytra are the same in both species, but they are narrower in *D. convexicollis*.

Length 10 mm.; width 2 mm.

Hab. Transvaal (Zoutpansberg). ? Rev. H. Junod.

DROMICA (COSMEMA) ZULUANA, n. sp.

♀: Fusco-cuprea, sub-nitida, lateribus prothoracis elytrorumque sub-æneis, antennarum articulis quatuor basalibus, tibiis, femorumque basi rufo-flavescentibus; labro flavo, haud fusco-marginato; capite lato, inter oculos valde plicato, collo transversim plicato-scabroso; prothorace breve, latitudine longiore, basi apice angustiore, ad basim haud sensim strangulato, areis dorsalibus duabus modice convexis, transversim undulato plicatis prædito; elytris elongatis, ad medium modice ampliatis, convexis, apice haud singulatim emarginatis, spina suturali brevi acuta munitis, punctis profundis confertis, ad latera oblitteratis, in partem anticam remotius positis obsitis, macula supra-marginali sub-elongata flava, vittaque marginali breve apicis spinam attingente utrinque notatis.

This species is allied to *D. elegantula* and also to *D. cordicollis*, but it is easily distinguished from both these species by the entirely flavous labrum, the sub-cylindrical prothorax, which is slightly attenuated in the posterior part and very little constricted there, and the much more closely set punctures which are also less wide, and which, instead of being of a uniform size as in the two species mentioned above, are slightly broader in the anterior than in the posterior part; in my ♀ examples of *D. elegantula* and *D. cordicollis*, the sides of the elytra are punctured as far as the outer margin, whereas they are broadly impunctate in *D. zuluana*.

Length 11 mm.; width $3\frac{1}{4}$ mm.

Hab. Natal (Eshowe).

FAMILY CARABIDÆ.

TRIBE ODOCANTHINI.

GEN. CASNONIA, Latr.

CASNONIA LETA, n. sp.

Rufo vel pallide rufo testacea, capite nigro, elytris fascia media communi lata, ad latera postice ducta læte cærulea, antennis fuscis articulis quatuor basalibus rufo testaceis, pedibus etiam fuscis femorum basi rufescentibus; abdomine nigro; palpis infuscatis; caput impunctatum; prothorax tenui, valde elongatus, post medium leviter ampliatus, ad basim strangulatus, convexiusculus, tenuissime longitudinaliter in medio canaliculatus, haud distincte transversim plicatulus, setis longis flavescentibus obsitus; elytra a basi apice punctis setam rigidam ferentibus seriatis prædita.

This species is evidently closely allied to *C. senegalensis* in shape and colouring, but it differs by the series of rigid setæ which are found on the prothorax and on the elytra, and which are wanting in the former, in which all the joints of antennæ are red; the prothorax is transversely plicate.

Length 7-8 mm.; width $1\frac{1}{2}$ -2 mm.

Hab. Natal (Malvern), C. N. Barker. Southern Rhodesia (Sebakwe), Delancey Dods.

TRIBE LEBIINI.

GEN. LEBIA, Latr.

LEBIA PROMONTORII, n. sp.

Flavo testacea, elytris pedibusque pallidioribus, illis plaga suturali communi nigra, pone medium quadrata striam 4 utroque attingente, antice valde acuminata, ad scutelli apicem ducta, postice angustata, truncata, longe ante apicem desinente notata; antennarum articulis longe pubescentibus; capite impunctato; prothorace brevi, longitudine tertio latiore, medio sulcato, lateraliter antice ampliato rotundato, postice fere recto angulis acutis reflexis, disco levi; elytris basi prothorace tertio latioribus, pone medium ampliatis,

supra vix convexis, punctulato striatis, interstitiis planis, vage aciculatis; abdomine sub-infusato.

This species differs from all the other South African species by its impunctate upper side and the great ampliation of the posterior part of the elytra; the shape of the black patch on the elytra is not unlike that of *L. imitator*, but it reaches the scutellum in *L. promontorii*, which it does not in the former which has also the head black.

Length $5\frac{1}{2}$ mm.; width $2\frac{1}{2}$ mm.

Hab. Cape Town. A. Raffray.

LEBIA SEBAKUANA, n. sp.

Pallide testacea, glabra, capite nigro, antennis prothoraceque rufo-testaceis; elytris fascia communi nigra basi quadrata ibidem striam attingente, deinde angustata, pone medium modice dilatata, plaga laterali utrinque a fascia communi late interrupta notatis; capite crebre aciculato, lateribus strigillatis; prothorace ampliato, longitudine tertio latiore, antice lateraliter ampliato rotundato, postice distincte sinuato angulis acutis, reflexis, medio canaliculato, disco distincte aciculato; elytris a medio ad apicem perparum ampliatis, nonnihil convexis, punctato striatis, interstitiis convexis, creberrime aciculatis.

The South African species to which this species might be compared owing to the head being black, and also to the shape of the dorsal markings, is *L. vaciva*, Pér., which is, however, densely pubescent, quite differently sculptured, and much larger.

Length 4 mm.; width $1\frac{3}{4}$ mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

LEBIA TENELLA, n. spec.

Glabra, capite prothoraceque rufo-flavis; elytris subtusque stramineis, illis fascia communi nigra basi-quadrata striam 4 attingente, deinde angustata, pone medium ad marginem lateralem utrinque extensa, longe ante apicem desinente ornatis; abdominis segmentis duobus ultimis infuscatis; capite antice aciculato, lateraliter conspicue plicato; prothorace antice ampliato rotundato, deinde fere recto, angulis posticis acutis, reflexis, medio canaliculato, disco crebre aciculato; elytris a medio ad apicem perparum ampliatis, haud convexis, punctulato striatis, interstitiis planis, tenuissime creberrimeque aciculatis.

One of the smallest of the South African species; the livery resembles that of *L. fortuita* and of *L. natalensis*, but the lateral

posterior band reaches the outer margin and is not dilated along it as in *natalensis*, nor is it so broad; from *L. fortuita* it differs in the size, the shape of the intervals, which are plane instead of being convex, and also in being glabrous on the upper side.

Length 4 mm.; width $1\frac{1}{3}$ mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

TRIBE CALLIDINI.

GEN. POLYLAULACUS, Chaud.

POLYLAULACUS PALLIDUS, n. sp.

Angustus, supra glaber, parum nitidus; pallide flavus, capite obscuriore, palporum articulo ultimo sub-infusato; capite antice levi a sutura frontali confertim strigillato; prothorace latitudine tertio longiore, antice nonnihil lateraliter ampliato rotundato, deinde recto angulis posticis acutis, basi transverso, supra crebre punctato, linea brevi media instructo; scutello impunctato; elytris prothorace nonnihil latoribus, fere parallelis, vix convexis, profunde punctato striatis, interstitiis modice convexis, sub-TECTIFORMIBUS, sutura leviter infuscata.

Allied to *P. brunneus*, Chaud, but smaller; it differs by its pale flavous, almost stramineous colour, and the less deeply and more closely punctured prothorax; the elytra are also slightly more parallel.

Length $4\frac{1}{4}$ –5 mm.; width $1\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

TRIBE ANTHIINI.

GEN. POLYHIRMA, Chaud.

POLYHIRMA SAMBESINA, n. sp.

Nigra, nitida, capite pilis albidis nonnullis, obsito, prothorace vitta longitudinali ab apice ad sextam partem elytrorum longitudinis ducta, elytris macula postica communi lata albo pubescenti ornatis, margine laterali interstitioque supra marginali sparse breviterque albo fimbriatis. Caput nonnihil angustum, profunde quadrifariam impressum, pone oculos antice haud angustius, latitudine duplo longius, supra conferte punctulatum, sulco laterali postico angusto, sub-sinuato, profundo, medium disci haud attingente; elytra ovalia, latitudine duplo longiora, ad basim modice convexa, deinde sub-

deplanata, sutura costisque carinatis quatuor integris apicem fere attingentibus alteraque basali abbreviata utrinque prædita, interstitiis profunde alveolatis; corpore subtus abdomine excepto, pedibusque breviter albido pubescentibus.

Long 20–24 mm.; lat. 6–7 mm.

This species is distinguished from its South African congeners with alveolate elytra: such as *P. amatonga* and *P. consobrina*, Pér., by the long and slender prothorax, and the white pubescence on the scutellum, the base and apex of the elytra.

In one of my examples the left antenna is only 9-jointed, and the right 10-jointed, but the apical article is greatly reduced.

Hab. Zambesi River (Feira). Dr. Stoehr.

POLYHIRMA KAFUENA, n. sp.

Nigra, nitida, caput rugose punctatum, pilis appressis albis nonnullis obsitum; prothorax angustus, in medio longitudine duplo brevior, antice posticeque angustatus, ad medium laterum nonnihil ampliatus, acute marginatus, in medium disci profunde canaliculatus, foveolis contiguis crebre obsitus, canali margineque laterali pilis albidis obtectis; scutellum albo pilosum; elytra antice angusta, a tertia parte ovato ampliata, ad medium prothorace quam duplo latiora, deinde ad apicem vix angustata, ibi margine posticali transverse sub-diagonali, carinato costata, interstitiis fere alveolatis, vitta albida suturali a basi partem quintam attingente, altera transversa communi ad medium sita, plaga utrinque postica arcuata, vittaque laterali marginali alba ornata; abdomen nitidum, subconfertim punctulatum; pectus, pedes, antennarum articulis quatuor basalibus, subdense albido pubescentibus.

Long. 16½ mm.; lat. 5 mm.

Closely allied to *P. ænigma*, Dohrn, but the prothorax is narrower.

Hab. Kafue River (Northern Rhodesia). J. Drury.

TRIBE SIAGONINI.

GEN. COSCINIA, Dej.

{COSCINIA CAPICOLA, n. sp.

Nigro picea, antennis pedibusque dilutioribus, illis articulo ultimo acutissimo, palpis testaceis; capite, collo etiam, profunde crebre

punctatis, area minuta media obsoletius punctulata, punctis longe setigeris; prothorace subdense pubescente, punctis rotundatis profundis obsito; elytris valde deplanatis, pubescentibus, punctis seriatis sub-remotis tectis; subtus pedibusque breviter pubescentibus.

Much smaller than *C. basalis*, Dej., which it resembles, but the elytra are concolorous, and the punctures on the prothorax and elytra are not so closely set.

Length $4\frac{1}{2}$ mm.; width $1\frac{3}{4}$ mm.

Hab. Cape Colony (Willowmore). Dr. H. Brauns.

GEN. ANISODACTYLUS, Dej.

ANISODACTYLUS INCHOATUS, n. sp.

Niger, nitidus, elytris dilute ænescentibus, labro, palpis, antennis pedibusque rufis; caput impunctatum, sulcis lateribus intra oculos modice profundis; prothorax ab apice ad tertiam partem nonnihil arcuato ampliatus, dein basi oblique ductus at haud sinuatus, angulis posticis acutis, latitudine baseos apicisque æqualis, antice convexiusculus, in medio anguste canaliculatus, postice impressione angusta lineiformi utrinque impressus, omnino impunctatus; scutellum leve; elytra oblonga, versus apicem sinuata in hoc loco conjunctim acuminata, convexiuscula, anguste striata, interstitiis planis, levibus, secundo puncto posticali evidentiore; corpus subtus epipleuræque fusco rufescentia.

Long. 12 mm.; lat. $4\frac{1}{2}$ mm.

But for the vestiture of the under part of the tarsi, this species might be taken for an *Harpalus*.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

GEN. HYPOLITHUS, Dej.

HYPOLITHUS CRUENTULUS, n. sp.

Capite prothoraceque rufis, elytris rufo ferrugineis, vitta communi nigra striam quartam utrinque attingente, postice apicem versus, oblitterata ornatis, antennis palpis pedibusque pallide testaceis; caput fronte verticeque sparse punctatum punctis breviter pubescentibus, collum leve; prothorax longitudine quarto latior, lateraliter modice rotundatus, ad basim apice nonnihil angustior, vix angulatus, depressus, in medio distincte at haud profunde canaliculatus, basi

utroque leviter impressus, sub-confertim punctulatus, punctis breviter flavo setigeris; scutellum punctulatum; elytra dense at breve pubescentia, basi prothorace nonnihil latiora, angulis vix rotundatis, lateribus recta, postice conjunctim attenuato rotundata, vix convexa, anguste striata, interstitiis planis creberrime punctulatis punctis remotis profundioribus nullis; corpus subtus nigrum.

Long. $7\frac{1}{2}$ –8 mm.; lat. 3 mm.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

HYPOLITHUS IMITATIVUS, n. sp.

Niger, sub-nitidus, capite prothoraceque glabris, elytris dense at brevissime flavescente pubescentibus; antennæ pallide flavo testaceæ articulis duobus basalibus exceptis, supra longitudinaliter fusco maculatis; pedes pallide testacei; caput leve; prothorax longitudine quarto latiora, basi apice fere æqualis, lateraliter mediocre rotundatus angulis posticis obtusis, vix convexiusculus, in medium disci nonnihil levior, antice lateraliterque sub-strigillato aciculatus, postice, præsertim ad latera, creberrime coriaceus, limbo externo angustissime flavescente; scutellum impunctatum; elytra oblonga, prothorace aliquantulum latiora humeris nonnihil obliquis, anguste striata interstitiis planis, confertissime aciculatis punctis validioribus seriatis nullis.

Long. $7\frac{1}{2}$ –8; lat. 3 mm.

Allied to *H. caffer*, Boh., but distinct.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

HYPOLITHUS OPTIVUS, n. sp.

Niger, nitidus, elytris sub-micantibus, brevissime flavescente pubescentibus; antennæ testaceæ, articulo primo fere omnino infuscato, ceteris linea longitudinali fusca, palpi tarsique pallide testacea, pedes nigri; caput impunctatum, labro apice anguste rufomarginato; prothorax longitudine media nonnihil latior, lateribus vix ampliatis, angulis posticis sub-obtuse rotundatis, basi apice nonnihil angustiore, antice convexiusculus, a medio retrorsum deplanatus, in medio leviter canaliculatus, parte antica levi, nitida, postica præsertim ad latera crebre aciculata, coriacea; scutellum impunctatum; elytra basi prothoracis latitudine maxima vix superantia humeris sub-obliquis, lateribus recta, postice conjunctim attenuato rotundata, anguste striata, interstitiis creberrime aciculato punctatis, haud coriaceis

tertio quintoque punctis validis 8 vel 10 a basi supra apicem seriatis remotis præditis.

Long. 9 mm. ; lat. $3\frac{1}{2}$ mm.

Hab. Natal (Isipingo). C. N. Barker.

HYPOLITHUS RIVALIS, n. sp.

Niger, nitidus glaber; antennæ flavo testaceæ articulis 7-8 supra longitudinaliter infuscatis; palpi pedesque flavo testacei; caput impunctatum, labro rufo ferrugineo; prothorax lateraliter anguste flavo testaceus, modice rotundato arcuatus, basi apice nonnihil angustior lateribus posticis distinctis at haud acutis, longitudine media fere quarto latior, vix convexiusculus, ab apice longe pone medium impunctatus, basi, præsertim ad latera, creberrime aciculatus; elytra prothorace nonnihil latiora, humeris sub-obliquis, lateribus recta, versus apicem conjunctim rotundato attenuata, striata, interstitiis planis, creberrime punctatis, punctis simplicibus, interstitiis tertio quintoque punctis majoribus seriatis nullis.

Long. $9\frac{3}{4}$ mm. ; lat. $2\frac{3}{4}$ mm.

Allied to *H. glaber* and *H. interstitialis*, Boh., but differs in having no rows of deeper punctures on any of the intervals between the elytral striæ.

Hab. Natal (Lower Umkomas). C. N. Barker.

HYPOLITHUS TURBATUS, n. sp.

Niger, nitidus, glaber, elytris leviter micantibus, sutura marginisque lateralibus anguste testaceis; antennæ pallide flavo testaceæ articulis supra longitudinaliter vix infuscatis; palpi pedesque pallide flavi; caput impunctatum, mandibulis labroque rufo testaceis; prothorax subanguste flavo marginatus, longitudine media quarto latior, basi apice latitudine fere haud brevior angulis posticis distinctis at haud acutis, lateribus vix arcuatus, supra deplanatus, in medio leviter canaliculatus, ab apice longe ultra medium levis, impressionibus posticis aciculato punctatis basi ipsa in medio substrigillata; elytra ut in specie præcedenti, interstitiis planis, crebre simplice punctulatis, tertio, quinto septimoque punctis evidentioribus remote seriatis, sutura linea testacea a basi ultra medium oblitterata.

Long. $7\frac{1}{2}$ mm. ; lat. $2\frac{3}{4}$ mm.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

Distinguished by the three alternate intervals of each elytron bearing a series of larger, remote punctures, and also by the testa-

ceous narrow margins of the elytra and of the posterior sutural part of the same.

HYPOLITHUS TETRICUS, n. sp.

Niger, opacus, supra tenuissime brevissimeque pubescens, antennæ nigræ, articulo basali pallide flavo; palpi nigri articulo ultimo apice flavo, femora flava, genibus tibiis tarsisque nigris; caput crebre punctatum fere rugosum, collo leve, labro anguste ferrugineo marginato; prothorax latus, longitudine media tertio latior, basi apice vero nonnihil latior angulis posticis distinctis, at haud acutis, lateribus arcuatis, ad medium nonnihil rotundatis, supra in medio leviter canaliculatus, omnino crebre asperoso punctatus, punctis contiguis; scutellum leve; elytra basi prothorace haud latiora, humeris sub-obliquis, a tertia parte leviter ampliata, ante apicem valde sinuata, apice conjunctim attenuata, supra fere plana, anguste striata, interstitiis parum elevatis, confertissime aciculato alutaceis, primo, tertio, quinto septimoque punctis remotis seriatis magis minusque evidentioribus instructis; corpus subtus nitidum.

Long. $12\frac{3}{4}$ mm.; lat. $5\frac{1}{2}$ mm.

Allied to *H. tomentosus*, Dej.; differs by the slightly rougher punctuation, the shorter pubescence, and the colour of the antennæ and legs.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

GEN. CRATOGNATHUS, Dej.

CRATOGNATHUS NATALENSIS, n. sp.

Os, palpi, antennæ, pedesque pallido testacea, caput atque prothorax viridi ænea, illo labro rufescente hoc anguste rufo marginato; elytra flavo castanea, nitida, dorso ænescente, corpus subtus nigro æneum. Caput omnino levigatum, in mare validissimum, ad suturam frontalem utrinque angustissime sed profunde punctatum; prothorax etiam levigatus, sulco medio tenui, utrinque plicatulo; scutellum impunctatum; elytra normalia, parum convexa, tenuiter simpliciterque striata, interstitiis sub-planis, levibus, stria secunda pone basim oblitterata, basi cum tertia sub-oblique connexa.

Shorter than *C. mandibularis*, Dej., and more of the size of *C. fallax*, Pér. It is distinguished especially by its colouration from *C. minor*, Pér., and the base of the prothorax is less narrowed than this species, the sides being straighter. It is, however, nearer still

to *C. grandiceps*, Boh., but shorter, and with the prothorax less impressed laterally above the base.

Length $7\frac{1}{2}$ mm. ; width 3 mm.

Hab. Natal (Colenso). Both sexes were captured at Hlangwana by Dr. G. B. Longstaff.

GEN. OMOSTROPUS, Pér.

OMOSTROPUS SIMPLEX, n. sp.

Niger, nitidus, oblongus, nonnihil angustus, palpis antennis pedibusque sub-rufescentibus ; caput leve, ad suturam frontis utrinque late punctatum, labro nigro ; prothorax levis, longitudine nonnihil latior, ad tertiam partem longitudinis lateraliter angustatus, deinde fere rectus angulo basali acuto, supra convexiusculus intra basin utrinque impressus, ubi punctis nonnullis insculptus ; elytra prothorace nonnihil angustiora, oblonga, anguste profundeque striata, interstitiis planis.

Allied to *O. vicarius*, Péring. ; the difference between the two consists in the prothorax being slightly more ampliate in front in *O. simplex*, and in the intervals of the elytra being slightly more plane and narrower than in *O. vicarius*. I have, however, seen one example only of *O. simplex*, and it might prove to be only a varietal form of *O. vicarius*.

Length $8\frac{1}{2}$ mm. ; width 3 mm.

Hab. Natal (Colenso). Dr. G. B. Longstaff.

OMOSTROPUS EGENUS, n. sp.

Rufo ferrugineus, capite, prothoraceque disco nonnunquam obscuriore, palpi, antennæ pedesque pallide testacei ; labrum ferrugineum, caput impunctatum, leve, impressione supra oculari punctiformi ; prothorax convexiusculus, longitudine haud latior, lateraliter antice sensim ampliato rotundatus, postice fere a medio leviter attenuatus haud sinuatus angulis acutis, basi apice nonnihil angustior, in medio anguste canaliculatus, disco ab apice longe ultra medium levigato, postice basi tota late crebre irregulariter punctata ; scutellum minimum, impunctatum ; elytra basi prothoracis latitudine maxima nonnihil latiora humeris acutis, recta, versus apicem conjunctim rotundata, modice convexa, lineato striata interstitiis levibus, fere plana.

Long. 9 mm. ; lat. 3 mm.

Hab. Southern Rhodesia (Bulawayo). G. A. K. Marshall.

In one of the two examples which I have examined, and which is slightly immature, the punctures along the base of the prothorax are only feebly indicated. The species is not unlike *O. vicarius*, but it differs, however, in several particulars.

GEN. DIORYCHE, MacLeay.

DIORYCHE CURTULA, n. sp.

Nigro viridis, supra dense griseo pubescens; antennis sub-infuscatis articulis basalibus duobus pallide flavis; palpi pallide flavi, articulo ultimo infuscato at apice flavo; pedes pallide flavi, labrum rufo testaceum; caput latum, creberrime punctatum; prothorax latitudine nonnihil brevior, lateribus leviter ante medium rotundatis, vix ampliatis, basi apice latitudine fere æquali, antice convexiusculus, in medio inconspicue canaliculatus, rude conferte punctatus, dense pubescens; elytra prothorace nonnihil latiora, vix magis quam duplo longiora, ad humeros modice acuta, lateribus recta, apicem versus conjunctim rotundata, ante apicem conspicue singulatim sinuata, punctato striata, interstitiis vix convexis, confertim aciculatis, dense pubescentibus; corpus subtus nigro fuscum, sparse punctatum.

Long. 6 mm.; lat. $2\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

Distinguished from the other South African species by its width in proportion to its length, and by the deeply punctate striæ of the elytra.

GEN. STENOLOPHUS, Dej.

STENOLOPHUS INVOLUTUS, n. sp.

Oblongus, niger, nitidissimus, elytris dilute micantibus; antennis longis, fuscis, articulis basalibus duobus, flavidis, palpis, articulo ultimo basi autem nigro maculato, pedibusque pallide flavo testaceis; caput impunctatum, utrinque impressum; prothorax longitudine media fere tertio latior, antice haud angustatus, ad punctum setigerum anticum nonnihil ampliatus, deinde ad basim modice angustatus, angulis posticis sub-obtusis, basi apice nonnihil angustior, supra leviter convexiusculus lateribus anguste flavo marginatis, levis, medio obsolete canaliculatus, ad basim utrinque late depressus punctulatusque; scutellum leve; elytra levia, anguste striata, striis impunctatis, secunda abbreviata bene distincta, lateraliter anguste postice late flavo testacea.

Long. $5\frac{1}{4}$ – $5\frac{3}{4}$ mm. ; lat. 2 – $2\frac{1}{2}$ mm.

Allied to *S. amœnulus*, Pér., owing to the general facies and also the colouration, but differentiated by the presence of a very well defined abbreviated second elytral stria.

Hab. Cape Colony (Humansdorp). Rev. J. A. O'Neil.

GEN. ACUPALPUS, Latr.

ACUPALPUS ALACER, n. sp.

Rufo ferrugineus, nitidus, prothorace dilutiore; caput nigrum; labro flavescente; antennæ sub-infuscatæ, articulo basali ultimoque saturatius flavo testaceis; palpi pedesque livido testacei; caput impunctatum, validum; prothorax ante medium nonnihil ampliato rotundatus, deinde ad basim sub-oblique ductus angulis vix acutis, convexiusculus, levis, postice supra basim utrinque haud profunde impressus, impunctatus, in medio obsoletissime canaliculatus; scutellum brevissimum, impunctatum; elytra oblonga, prothorace nonnihil latiora atque triplo longiora, ad humeros vix rotundata, paulo convexa, tenue striata, interstitiis convexiusculis, levibus.

Long. $3\frac{1}{2}$ mm. ; lat. $1\frac{1}{2}$ mm.

Hab. Natal (Durban). C. N. Barker.

ACUPALPUS ALIENUS, n. sp.

Nitidus, caput nigrum, prothorax rufus, elytra corpusque subtus rufo ferruginea, illis ad latera apiceque nonnihil dilutioribus; antennæ flavo testaceæ articulis basalibus tribus pallidioribus; palpi pedesque pallide flavo testacei; caput impunctatum; prothorax ante medium lateraliter modice ampliato rotundatus, pone medium sub-oblique angustatus haud sinuatus angulis posticis distinctis autem haud acutis, apice basi fere quarto latior convexiusculus, in medio obsolete canaliculatus, in disco levis, postice utrinque ad basim late impressus, crebreque punctulatus; scutellum impunctatum; elytra oblonga, prothorace latiora et triplo longiora, ad humeros vix rotundata, modice convexiuscula, profunde lineato striata, interstitiis convexiusculis, levibus.

Long. $3\frac{1}{4}$ mm. ; lat. $1\frac{1}{4}$ mm.

Allied to the preceding species, but distinguished by the closely punctate basal part of the prothorax. The antennæ are also paler.

Hab. Natal (Isipingo). C. N. Barker.

ACUPALPUS ANGUSTICOLLIS, n. sp.

Angustus, rufus, nitidus, elytra vitta lata juxta suturali antice posticeque longe abbreviata in singulo nigra, antennæ, totæ, palpi pedesque pallide flavo testacei caput impunctatum sulcis profundis; prothorax longitudine haud latior, ad punctum anticum lateraliter nonnihil sub-rotundato ampliatus pone medium sensim at fere recte attenuatum angulis posticis distinctis, basi truncatus in hoc loco apice tertio angustior, vix convexiusculus in medio distincte canaliculatus, postice impressione sub-angusta, profunda utrinque præditus, omnino levigatus; scutellum impunctatum; elytra oblonga, nonnihil elongata, prothorace latiora, fere quadruplo longiora, ad humeros vix rotundata, convexiuscula, tenuiter striata interstitiis præsertim pone basim convexis, vitta dorsali longitudinali nigra lata ab interstitio primo usque ad quintum extensa, a basi apiceque longe remota, ornata.

Long. 4 mm.; lat. $1\frac{1}{2}$ mm.

This species has a slightly more elongated facies than the other South African species, from which it differs also by the shape of the prothorax, which is slightly more narrowed behind with the posterior angle distinct; the posterior impressions are not so broad and are deeper, and the median longitudinal groove is very distinct.

Hab. Cape Colony (Dunbrody). Rev. J. A. O'Neil.

TRIBE PANAGÆINI.

GEN. TEFFLUS, Latr.

TEFFLUS KAFUENUS, n. sp.

Niger, nitidus, elongatus, sensim angustus; prothorax haud ampliat, latitudine fere quarto longior, lateribus in medio vix acute productis, rude rugoso punctatus, disco longitudinaliter tenue canaliculato; elytra suboblonga, sublate sulcata, sulcis aspero granulatis, interstitiis levibus, convexis vel subtectiformibus, tibiis supra profunde canaliculatis.

Length 39 mm.; width 13 mm.

This species is easily distinguished from the other African species by its comparatively narrow, and therefore more elongated form; the prothorax is much less amplified laterally in the centre, the ampliation occurring slightly past the middle, and also much less

angular than in *T. delagorqueti*; the granules in the sulcate striae are also much sharper than in that species.

Hab. North-West Rhodesia (Kafue River). J. Drury.

GEN. TRICHISIA, Motsch.

TRICHISIA RHODESIANA, n. sp.

Nigra, sub-nitida, supra nonnihil viridi nigra, pube densa flavida vestita, subtus parce pubescens, ore, antennarum articulo primo pedibusque luteis; capite utrinque profunde canaliculato foveolato, parte media elevata, leve, collo basi sub-strigillato; prothorace longitudine tertio latiore, ab apice longe pone medium lateraliter arcuatim ampliatio, ibi profunde emarginato, dein cito angustato angulis posticis valde acutis, profunde crebreque foveolato, in medio canaliculato, postice utrinque impresso; elytris ovatis; basi prothorace haud latoribus, profunde at anguste striatis interstitiis altecostatis tectiformibus creberrime transversim rugose plicatis; corpore subtus profunde punctato.

It is the first time that a species of this genus has been recorded from Africa. The other three species known are from India, Hong-Kong, and Eastern Australia.

Length $9\frac{1}{2}$ mm.; width $4\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

TRIBE CHLÆNIINI.

GEN. CHLÆNIUS, Bonel.

CHLÆNIUS NUNCIUS, n. sp.

Supra viridi-æneus, capite prothoraceque nitidis, elytris sub-opacis, utrinque flavo bi-maculatis; antennarum articulis basalibus duobus pedibusque pallide flavis; capite crebre aciculato, labro flavo; prothorace longitudine quarto latiore, late cordato, a medio basim versus modice angustato, postice utrinque impresso, medio canaliculato, crebre aciculato, glabro, marginibus lateralibus angustissime rufescentibus; elytris latis, humeris prominentibus, ad apicem distincte ampliatis, tenue striatis, interstitiis planis, creberrime scabrosis, brevissime pubescentibus, plaga laterali fere media, bi-sinuata, inter stria 3-8 sita maculaque apicali obliqua utrinque ornatis; corpore

subtus glabrum, nigro piceum, abdominis segmento ultimo apice flavo; pectore profunde punctato.

Allied to *C. transversalis*, Dej., but larger than the Senegal examples of this species, and more amplified behind; the elytra have no flavous margin, the quadrate patch is more median, larger and entire, there are no traces of a supra-apical macule, but the apical diagonal patch is of the same shape but not continued along the rounded part of the margin.

Length 17 mm.; width 7 mm.

Hab. Transvaal (Zoutpansberg). Pretoria Museum.

CHLÆNIUS EFFUGIENS, n. sp.

Niger, capite prothoraceque viridi-, elytris nigro-æneis, ore, antennarum articulis tribus primis, macula pone medium inter strias 3-8 transverse sita in singulo notatis pedibusque flavis. Capite elongato, ad latera medioque profunde punctato; prothorace latitudine fere duplo longiore, ad medium lateraliter angulato (♂), deinde brevissime sinuato, basi apice latitudine æquali, medio late at haud profunde longitudinaliter impresso, vix lineato, punctis profundis, confertis, brevissime setigeris obsito; scutello punctulato, nitido; elytris elongatis, angustis, post medium perparum ampliatis, profunde striatis, interstitiis sub-convexis crebre punctulatis, brevissime pubescentibus; subtus glaber, niger, nitidus, abdominis segmento ultimo nigro; pectore profunde punctato.

This species belongs to the group of *C. discicollis*, *bohemani*, *antennatus*, &c., and is easily recognised by the angular median part of the long, narrow prothorax. I do not know the female.

Length $11\frac{1}{2}$ mm.; width 4 mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

CHLÆNIUS ORPHANUS, n. sp.

Niger, opacus, pube brevissima flavida tectus, antennarum articulo primo pedibusque flavis, genubus sub-infuscatis; elytris ovato-oblongis, macula sub-ovata vel sub-quadrata breviter sinuata flava in singulo notatis; palpis antennisque articulo primo excepto nigris; capite omnino crebre profundeque punctato; prothorace longitudine quarto latiore, lateribus ampliato rotundatis, basi apice vix latiore, angulis posticis anticisque haud emarginatis, supra haud convexo, a basi fere ad medium utrinque profunde impresso, medio linea longitudinali profunda instructo, punctis profundis ad latera magis rugosis

crebre obsito; scutello impunctato; elytris basi prothorace vix latioribus, pone medium modice ampliatis, striatis, interstitiis convexis, creberrime profundeque punctulatis, plaga utroque supra strias 3-7 sita; subtus totus niger, pectore profunde punctato.

Length $12\frac{1}{2}$ - $13\frac{1}{2}$ mm. ; width 5 - $5\frac{3}{4}$ mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

I know of no ally of this species. The prothorax is more broadly and equally ampliate rounded laterally than in *C. ovampo*, Pér., and the elytra are more ovate.

CHLÆNIUS FINITIMUS, n. sp.

Niger, capite prothoraceque viridi æneis, ore, labro, antennarum articulis primis tribus pedibusque rufo-flavescentibus; elytris nigro ænescentibus, dense flavo pubescentibus, macula posticali flava, bisinuata inter strias 3-8 sita in singulo notatis; capite crebre aciculato; prothorace longitudine quarto latiore, lateribus ampliatio-rotundatis, antè nonnihil angustiore angulis acutis, posticis magis rotundatis, supra parum convexo, postice utrinque foveolato, in medio longitudinaliter canaliculato, punctis confertis rotundatis fere confluentibus obsito; scutello impunctato; elytris oblongis, pone medium leviter ampliatis, striatis, interstitiis in mare haud sensim, in femina magis convexis, conferte punctatis; subtus glaber; pectore profunde punctato.

Length 11 - $11\frac{1}{2}$ mm. ; width $4\frac{3}{4}$ - 5 mm.

Hab. Transvaal (Zoutpansberg); Southern Rhodesia (Umtali). A. Bodong.

The nearest ally of this species is *C. ovampo*, Pér., from which it is distinguished by the sculpture of the prothorax and elytra, which consists of round, nearly coalescing punctures, instead of being very scabrose shagreened; the prothorax is also more amplified.

TRIBE OOIDINI.

GEN. OODES, Bond.

OODES DECEPTOR, n. sp.

Niger, nitidissimus, antennæ dilute fusco testaceæ articulis tribus flavo rufescentibus, pedes obscuri, fere nigri, tarsis dilutioribus; palpi longi, obscure testacei; caput impunctatum; prothorax latitudine postica quarto brevior, ab apice basi gradatim angustatus,

parte antica autem sensim rotundata, convexus, impunctatus, impressionibus supra basalibus vel punctis nullis; elytra prothoracis basi antice haud latiora cum eo cohærentia, oblonga, postice conjunctim rotundata, ad apicem haud sinuata, convexa, distincte at tenue striata striis dorsalibus quatuor a basi longe remotis, fere ad apicem ductis, quinta basim attingente, sed ad apicem abbreviata, sexta quinta brevior, basim apicemque haud attingente, stria scutellari nulla; interstitio tertio punctis tribus, primo basali, conspicuo, secundo pone medium tertio ad tertiam partem sito utrinque prædito; prosternum inter coxas longe spinosum.

Long. 7 mm.; lat. $3\frac{1}{4}$ mm.

Allied to *O. angolensis*, Erichs., but more convex, and differing in the striation of the elytra; the first two striæ reach in *O. angolensis* much nearer to the base on each side, and the first one often reaches it.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

GEN. SYSTOLOCRANIUS, Chaud.

SYSTOLOCRANIUS DISCREPANS, n. sp.

Niger, capite prothoraceque opacis, elytris parum nitidis, antennarum articulis omnibus nigris; pedibus corporeque subtus nigris; caput impunctatum, punctis duobus juxta suturam frontis sitis haud prominulis; prothorax longitudine maxima tertio latior antice lateraliter attenuatus, a medio postice fere rectus, basi leviter sub-sinuatus, apice fere duplo latior, supra vix convexiusculus, impressionibus supra basalibus haud prominulis, in medio longitudine canaliculatus, impunctatus; scutellum impunctatum; elytra antice prothoracis basi nonnihil angustiora, elongata, apicem versus modice attenuata, postice conjunctim rotundata, ibi vix sensim sinuata, supra sub-depressa, anguste punctato striata, interstitiis antice convexiusculis a medio postice præsertim ad apicem, distincte convexis, tertio punctis tribus, primo ad medium, secundo tertioque magis approximatis ad partem posticam sitis prædito; corpus subtus nitidum vix punctatum, pedibus impunctatis.

Long. 13 mm.; lat. $7\frac{1}{2}$ mm.

Not unlike in general facies *S. tenebrioides*, from Nigeria, but smaller, and more gradually attenuated behind; the intervals on the elytra are also more tectiform.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

GEN. MELANODES, Chaud.

MELANODES INCERTUS, n. sp.

Niger, nitidissimus, antennarum articulis tribus atris, ceteris subinfuscatis, ultimo pallidiore; caput impunctatum, sulcis anterioribus prominulis; prothorax longitudine latitudine vix quarto latior, lateribus antice a tertia parte usque ad apicem leviter subarcuatim attenuatus, dein fere rectus, vix sinuatus, basi apice magis quam tertio latior, supra antice convexiusculus, postice deplanatus, in medio tenuiter canaliculatus, impressionibus supra basalibus linearibus; scutellum nullum; elytra prothoracis basi antice haud latiora, oblonga, postice conjunctim rotundata, apice singulatim sinuata, supra convexiuscula, tenue striata, striis simplicibus, interstitiis planatis, levibus, tertio puncto nullo.

Long. $9\frac{1}{2}$ mm.; lat. 4 mm.

Very closely allied to *M. ebeninus*, Erichs., but a little more convex; the legs and antennæ are darker, and the elytra more oblong.

Hab. Natal (Malvern). C. N. Barker.

TRIBE MASOREINI.

GEN. ANAULACUS, McLeay.

ANAULACUS CARINATIPENNIS, n. sp.

Rufo testaceus, sub-nitidus elytris opacis, capite elytris que piceis, his angustissime rufo marginatis; caput omnino levigatum, labro epistomaque rufo testaceis, oculis obtuse conicis; prothorax longitudine latitudine fere latior, lateribus haud ampliatis at brevissime arcuatis angulis posticis distinctis, margine antica arcuata, basi fere recta, supra deplanatus, in medio angustissime canaliculatus ibique levigatus; elytra pone basim prothorace vix latiora, duplo longiora lateribus rectis, postice arcuatim rotundata, haud sinuata, sutura carinata costisque dorsalibus duabus basim apicemque haud attingentibus in singulo instructis; tibiis posticis supra obtuse denticulatis.

Length 5 mm.; width $2\frac{1}{2}$ mm.

Differs from *A. capensis*, Péring, in having the elytra made opaque by a fuscous indumentum which hides completely the striæ, if they are present; in the dorsal part of each elytron are two

carinate costules, the outer one of which is not quite so highly raised as the juxta-sutural one.

Hab. Cape Colony (Port Elizabeth). Dr. G. B. Longstaff.

TRIBE APOTOMINI.

GEN. BASCANUS, Pér.

BASCANUS DISSIDENS, n. sp.

Testaceo rufescens, elytris piceo-rufescentibus, antennis rufis articulis 3-6 fuscis; caput rude punctatum, fronte pubescente; prothorace lateribus angustissime infuscatis, latitudine longior, antice truncatus, ante medium lateraliter ampliatus, deinde fere rectus, basi apice tertio angustior, angulis omnibus acutis, supra antice parum convexus, medio longitudinaliter canaliculatus; sulcis lateralibus partem median haud attingentibus, rude coriaceus, pube densa breve appressa vestitus; elytra oblonga, prothorace tertio longiora, convexuscula, distincte punctato striata, interstitiis elevatis, pube griseo flavescente appressa dense vestita; subtus rufescens, pedibus pallidis.

Differs from its two congeners *B. longicollis* and *B. gracilis* in the colour of the head and prothorax, and especially in the shape of the latter which is more amplified laterally in the anterior part, and more sharply marginate laterally, and the two lateral sulci reach from the base to about the median part of the disk; the elytra are more oblong. The upper part of the body is more densely pubescent than in the two above-mentioned species.

Length $7\frac{1}{2}$ mm.; width $3\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

TRIBE FERONINI.

GEN. METAXYS, Chaud.

METAXYS RHODESIANUS, n. sp.

Rufo ferrugineus, nitidus, elytra vitta suturali marginalique lata nigra a parte quarta longitudinis usque ad apicem ductis maculaque flavida posticali utrinque ornata; antennæ flavescens pubescentes articulis basalibus tribus glabris, nitidis; caput impunctatum;

prothorax latitudine postica quarto brevior, lateribus vix arcuatus antice leviter attenuatus, basi apice fere tertio latior angulis posticis obtuse rotundatis, basi distincte marginatus, supra convexiusculus, in medio anguste canaliculatus, impunctatus; elytra prothorace haud latiora, duplo longiora, oblonga, postice conjunctim rotundata, apice vix singulatim sinuata, supra-convexa, anguste punctato striata, interstitiis levibus, convexis; corpus subtile fere glabrum, pedibus pallide testaceis.

Long. 6 mm. ; lat. $2\frac{1}{2}$ mm.

This species is most probably allied to *M. amænula*, Boh., but it differs in several points, such as the convex intervals of the elytra, the sutural black band, and also the marginal ones, which are of the same length and surround both sides of the yellowish postical macules, each of which extend from the second to the sixth interval.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

TRIBE TRECHIINI.

GEN. TRECHUS, Clairv.

TRECHUS PARILIS, n. sp.

Rufo castaneus, nitidus, palpis, antennis pedibusque dilutioribus; caput impunctatum sulcis lateralibus conspicuis; prothorax longitudine nonnihil latior, lateraliter ab angulo antico postico modice arcuato, margine reflexa angulo postico oblique sub-reflexo, basi apice nonnihil angustior, disco levigato sulco longitudinali profundo; elytra oblonga angulis anticis rotundatis, prothorace triplo longiora atque in medio duplo latiora, depressa, striata, striis discoidalibus quinque angustis, integris, sexta, externali, lineiformi vix distincta vel fere oblitterata, antice posticeque late abbreviata, utroque prædita.

Long. $5\frac{1}{4}$ mm. ; lat. 2 mm.

Hab. Cape Colony (Cape District). A. Raffray.

Intermediate in shape between *T. pallipes*, Boh., and *T. tabulæ*, Pér. The elytra are less broadly rounded at the shoulders than in the latter, and are therefore less ovate; they are more broadly rounded there than in *T. pallipes*.

TRECHUS SOLUTILIS, n. sp.

Nigro piceus, nitidissimus; antennæ infuscatae articulis basalibus duobus rufescentibus; pedes rufo brunnei; caput impunctatum, sulci laterales profundi, sinuati; prothorax capite cum collum

nonnihil longior, lateraliter ampliato rotundatus, basim versus nonnihil angustatus angulis posticis acutis, basi truncatus hoc loco apice nonnihil angustior, in medio tenuiter canaliculatus, omnino impunctatus; scutellum breve, leve; elytra elongato ovalia humeris sub-obtusis at haud rotundatis, convexiuscula, utrinque quinque striata; striis dorsalibus tenuibus at profundis, prima partem sextam longitudinis tantum modo attingente, secunda juxta suturali integra, tertia a basi nonnihil remota punctum posticum attingente, quarta a puncto antico usque ad posticum fere ducta, sinu posticali brevissimo, quinta a ceteris late remota, supra marginali, profunde sulcata.

Long. 5 mm. ; lat. 2 mm.

This species is very distinct from all the other South African.

Hab. Southern Rhodesia (Salisbury).

TRIBE BEMBIDIINI.

GEN. TACHYS, Sch.

TACHYS SECUTORIUS, n. sp.

Rufo-ferrugineus, nitidissimus; antennæ elongatæ, articulis duobus primis flavescentibus, ceteris nigris; prothorax sensim latus, longitudine media fere duplo lator, fere ad medium ampliato rotundatus, deinde haud sensim sinuatus, angulo postico acuto, haud reflexo; elytra oblongo ovata, utrinque quadrifariam striata, striis sub-profundis, modice punctatis, prima integra, secunda ad apicem accedente, tertia quartaque multo-brevioribus, atque ultra partem dorsalem linea tenui fere integra prædita.

Ferruginous red, very shiny; antennæ long, slender, infuscate with the two basal joints pale flavescent; legs also very pale flavescent; head smooth, the lateral sulci deep; prothorax quite smooth, nearly twice as broad as long, ampliate rounded from the anterior angle to about three-fourths of the length, very slightly sinuate thence to the posterior angle which is sharp and not very much reflexed; elytra oblong, ovale, three times as long as the prothorax, impunctate; they have on each side in addition to the juxta-sutural stria, which is entire, three nearly equally deep dorsal ones, the first of which reaches slightly short of the apex within the horseshoe-like posterior enclosure, the third and fourth reach to

past the median part; these striæ are faintly punctulate, and on the sides are very faint traces of a fine line nearly entire.

Length $2\frac{1}{8}$ mm.; width 1 mm.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

TACHYS NIGROLIMBATUS, n. sp.

Niger, nitidus, antennæ nigræ articulis quatuor basalibus subflavescentibus; prothorax sub-latus, lateribus, antice modice rotundato ampliatis, postice haud sinuatis; elytra flavo testacea, sublate nigro limbata, basi plaga arcuata juxta scutellari, communi, nigra ornata, utrinque tenuiter quadristriata, striis tenuibus haud punctatis, exterioribus duabus cæteris brevioribus; pedes flavo-testacei.

Head and prothorax black, shiny, elytra light testaceous with a marginal and basal dark infuscate border, antennæ fuscous with the four basal joints flavescent, legs sub-flavescent with the femora slightly infuscate; head impunctate, sulci slightly elongate ovate, not very deep; prothorax impunctate, one-third broader than long, moderately ampliate rounded laterally near the anterior part, very slightly attenuate thence and not sinuate above the outer basal angle which is only moderately acuminate and not reflexed; elytra oblong, very little wider at the base than the broader part of the prothorax and having on each side, in addition to the juxta-sutural, three more striæ beginning at some distance from the base, in a line with the anterior puncture; the first of these three lines reaches behind as far as the arcuate sulcus, the second is slightly shorter, the fourth stops at about the median part; these striæ are very shallow, not punctulate; the supra-marginal sinuate sulcus of the posterior part merges with the margin, and is therefore hardly distinct.

Length 2 mm.; width 1 mm.

Hab. Natal (Malvern). C. N. Barker.

TACHYS VICARIUS, n. sp.

Rufo ferrugineus, capite prothoraceque dilutionibus, antennæ elongatæ, graciles, sub-stramineæ, articulis intermediis nonnihil obscurioribus; prothorax levis, longitudine fere duplo latior, lateribus antice magis ampliatis, postice modice sinuatis angulo postico acuto, reflexo; elytra oblonga, utrinque quinquies punctato striata, striis 2-4 partem declivam corporis attingentibus, exteriore brevioribus; pedes pallido-flavi.

Shiny; head and prothorax red, elytra ferruginous red and slightly darker in the median dorsal than on the posterior dehiscent part; antennæ long, moderately slender, pale flavescent like the palps and the legs; head impunctate, sulci moderately deep; prothorax impunctate, nearly twice as broad as the median length, ampliate rounded laterally for three-fourths of the length, the greatest ampliation being in the anterior third part, sinuate thence to the outer angle, which is very sharp and plainly reflexed; elytra oblong-ovate and having on each side in addition to the juxta-sutural four more striæ beginning at the same distance from the base; of these the first three, which are deep and punctate, reach to about two-thirds of the length, stopping, however, at some distance from the horseshoe-shaped posterior sulcus, the fifth is shorter, reaching only the median part, very shallow and not punctulate; the supra-marginal posterior sinuose sulcus is strongly defined.

Length 3 mm.; width $1\frac{1}{2}$ mm.

Hab. Natal (Malvern). C. N. Barker.

TACHYS VESCUS, n. sp.

Niger, nitidissimus, antennarum articulis omnibus pedibusque pallide flavidis; caput impunctatum, antennæ nonnihil breves articulis crassiusculis; prothorax latiusculus longitudine in medio tertio latior, lateribus ante medium modice ampliato rotundatis, deinde haud sinuatis, angulo postico haud reflexo; elytra oblonga, prothorace triplo longiora basiue tertio latiora, utrinque quadrifariam anguste striata, stria juxta suturali indistincte punctulata, integra at apice vix prominula, secunda tertiaque ad punctum posticum tantum modo continuatis secunda haud brevior at angustior, ad latera seriebus punctorum duabus fere oblitteratis vel vix distinctis, prædita, sulco arcuato posticali nullo, sulco supra marginali postico profundo.

Long. $2\frac{1}{5}$ mm.; lat. 1 mm.

Hab. Natal (Malvern). C. N. Barker.

TACHYS JUCUNDULUS, n. sp.

Nigro fuscus, nitidissimus; antennis nonnihil infuscatis articulis autem basalibus tribus pallide flavis; prothorace fusco, marginibus pallidioribus; elytris nitentibus margine laterali posticaque anguste flavescentibus, macula elongata supra-humerali alteraque rotundata supra-fossulam posticam sita in singulo ornatis; pedes pallide flavi. Antennæ elongatæ, graciles; caput impunctatum; prothorax levis

longitudine in medio tertio latior, ad foveam lateralem modice ampliatus, basi apice nonnihil angustior angulis posticis acutis, reflexis; elytra oblonga, prothorace tertio longiora, utrinque bifariam anguste striata, striis levibus, prima juxta suturali integra, at antice valde abbreviata, altera tertiam partem postice vix attingente, sulcus posticus lateralisque profundi.

Long. 2 mm.; lat. 1 mm.

This pretty species is as shiny iridescent as some of the small species of the genus *Stenolophus*.

Hab. Cape Colony (Port Alfred). Rev. J. A. O'Neil.

TACHYS DEBILIS, n. sp.

Flavus, nitidus, antennis articulis basalibus tribus pallidis, reliquis sub-infuscatis, palporum articulo ultimo etiam obscuriore; caput impunctatum, sulcis manifestis; prothorax longitudine duplo latior antice rotundato ampliatus, pone foveolam lateralem retrorsum suboblique attenuatus, basi apice nonnihil latior angulis haud reflexis, in medio canaliculatus, omnino levis; elytra antice prothorace nonnihil latiora, triplo longiora, oblonga, stria juxta suturali levi integra tantummodo utrinque prædita, arcu posticali bene distincto.

Long. $1\frac{1}{2}$ –2 mm.; lat. $\frac{3}{4}$ –1 mm.

Hab. Southern Rhodesia. (G. A. K. Marshall.)

TACHYS ARROGANS, n. sp.

Stramineo flavus, antennarum articulis totis pedibusque pallidis; caput impunctatum sulcis mediocribus; prothorax longitudine media nonnihil latior, ab apice pone medium manifeste rotundato ampliatus dein basim versus distincte sinuatus angulis acutis, reflexis, basi ipsa lata at apice aliquantulum angustiore; elytra antice prothoracis latitudine maxima, oblonga, vix convexa, striis levibus duabus juxta suturalibus, a basi longe remotis, prima ad apicem oblitterata, secunda punctum posticum attingente in singulo prædita, sulco posticali haud arcuato.

Long. 2 mm.; lat. $\frac{2}{3}$ mm.

Not quite so broad in proportion as *T. debilis*; the prothorax is narrower, and the number of striæ on the elytra differ.

TACHYS MINUTISSIMUS.

E minimis. Pelucidus, antennis pedibusque pallidis; caput impunctatum sulcis profundis; prothorax longitudine media tertio

latis, ab apice fere ad medium rotundato ampliatius dein retrorsum oblique modice attenuatus angulis acutis, vix recurvis, basi ipsa apice tertio angustiore; elytra suboblonga, basi recta humeris distinctis, prothorace fere quadruplice longiora stria juxta suturali unica levi in singulo prædita, arcu posticali oblitterato.

Long. $1\frac{1}{4}$ – $1\frac{1}{2}$ mm.; lat. $\frac{3}{4}$ mm.

Hab. Southern Rhodesia. G. A. K. Marshall.

FAMILY STAPHYLINIDÆ.

GEN. STAPHYLINUS, Linn.

STAPHYLINUS FAUVELI, n. sp.

Plate VI., fig. 12.

Niger, capite prothoraceque supra violaceo-cupreis, conferte profundeque foveolato punctatis, punctis umbilicatis, pube nigra ad latera rigidiora obsitis, illo linea supra basali brevissima levigata notato; scutello, atro, velutino; elytris confertim punctulatis, pube sub-aurata vel aurichalcea pilis nigris admixtis vestitis plagisque velutinis duabus basalibus prope scutellum sitis notatis; abdomine atro-tomentoso, segmentis dorsalibus 2, 3, 7, plaga lata, segmentis abdominalibus omnibus macula albida sericea utroque ornatis; antennis nigris, articulis basalibus tribus flavo-testaceis, corpore subtus pedibusque longe atro pubescentibus, pube tibiarum tarso-umque anticorum nonnihil flava.

Mas. Abdominis segmento 6 supra profunde emarginato, infra longe fisso, 5 subtus fossa triangulari profunda in medio sita.

This splendid species, of which I have seen an example of each sex, is, judging from the description, allied to *S. procerus*, Gah., but it differs in the colouring of the elytra and the absence of a lateral silvery patch on the dorsal part of the 7th abdominal segment. In the ♂ the 6th dorsal segment is deeply emarginate at apex, and the ventral one is very deeply incised and valve-like, the 5th ventral has a deep, median, sub-triangular pit; in the ♀ the silvery patches on the abdominal segments are distinct on the 2nd and 3rd segments only, and the pile on the elytra is more brassy than in the ♂.

Length 28–32 mm.; width 8– $8\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury), G. A. K. Marshall; (Umtali), A. Bodong.

GEN. *ÆDICHIRUS*, Erichs.*ÆDICHIRUS ONEILI*, n. sp.

Rufo testaceus, nitidus, capite, elytris, abdominis segmentis ultimis duobus nigris, palpis, longissimis, infuscatis, antennarum articulis 3-9 subinfuscatis, ceteris pallide flavis, pedibus flavis, genibus tibiatarumque basi longe infuscatis; caput glabrum, levigatum, ad medium frontis punctis subfoveolatis nonnullis præditum; antennæ modice graciles, elytrorum humeros attingentes, articulis ultimis duobus manifeste turbineis, prothorax glaber, latitudine maxima dimidio longior, antice ab apice versus medium ampliato rotundatus, dein retrorsum attenuatus, nonnihil convexus, in dorsi medium utrinque canaliculato, canalicula profunde seriato foveata; elytra pedunculo rubro, latitudine maxima dimidio longiora, fere parallelia humeris nonnihil rotundatis, apice manifeste arcuata, profunde rudeque punctato foveolata, foveis setam longam albidam ferentibus, in dorso confertius ad latera rarioribus instructis; abdomen supra subtusque setis rigidis, dense obtectum, segmentis omnibus dorsalibus trifariam transverse profunde punctato seriatis; pedes villosi, tarsis anticis articulis quatuor primis valde rotundato ampliatis, primo diformi, subtus cavernoso (σ).

Long. $7\frac{1}{2}$ mm. ; lat. $1-1\frac{1}{4}$ mm.

Hab. Cape Colony (Dunbrody). Rev. J. O'Neil.

FAMILY *SCYDMÆNIDÆ*.GEN. *MASTIGUS*, Latr.

Group of *M. deustus*, Thunb.

MASTIGUS TABULÆ, n. sp.

Niger, parum nitidus, tenuissime pubescens, elytris abdomineque castaneo rufis, antennæ subtenues, articulis primis 3 vel 4 nigris, cæteris flavescens, articulis basalibus duobus pilis rigidis nonnullis subtus munitis; caput confertim aciculatum, brevissime sericeo pubescens, postice profunde canaliculatum; prothorax elongatus, latitudine duplo longior, lateribus ante medium perparum ampliatus, deinde valde compressus sinuatusque, supra convexus, basi haud constrictus, in medium disci longitudinaliter carinatus, basi utrinque puncto distincto præditus, confertim aciculatus punctis setulam appressam brevissimam ferentibus; elytra elongata, in femina quam

in mare magis ovato ampliata minusque postice acuminata, singulatim rotundata, post medium præsertim ad latera obsolete striolata, striolis impunctatis, convexa, pone basim propter suturam leviter (σ) vel profunde atque late (φ) utrimque longitudinaliter impressa, creberrime aciculato punctata tenuissimeque griseo pubescentia; pedes elongati, subgraciles, femoribus ampliatis, brevissime pubescentibus, tibiis intus ad apicem tarsisque manifeste subflavescente sericeis.

Long. $5\frac{1}{2}$ – $5\frac{3}{4}$ mm.; lat. $1\frac{1}{5}$ –2 mm.

Allied to *M. deustus*, Thunb., and likewise found in wet moss on the Table Mountain Range, but it differs in the colour of the elytra which are darker red, and not infuscate at apex, the legs are entirely black instead of having the base of the femora and the tibiæ rufescent; the elytra have no traces in either sex of a basal transverse impression as in *M. deustus*, and the stiff hairs situated on the lower part of the two basal antennal joints are less numerous, and also shorter than in *M. deustus*.

Cape Colony (Cape Town). L. Péringuey.

MASTIGUS PROMONTORII, n. sp.

Niger, elytris rufotestaceis parte postica leviter infuscata; antennæ subtenuis nigræ, pubescentes, articulo primo pilis rigidis sparsis subtus obsito; caput confertim punctulatum, tenuissime pubescens, postice profunde canaliculatum; prothorax latitudine duplo longior, ante medium perparum ampliatus deinde valde compressus sinuatusque, supra convexus, post medium disci utrinque depressus basi autem transversim impressus, ibi puncto supra laterali utrimque præditus, in medio longitudinaliter carinatus, lateribus inferne plaga testacea notatis; elytra elongato ovata, in femina quam in mare magis ovato ampliata posticeque acuminata, apice oblique singulatim truncata, post basim (σ) convexa, vel (φ) leviter depressa, impressione sub-humerali vix profunda utrimque prædita, obsolete striata striis dorsalibus duabus primis manifestioribus profundiusque punctatis; pedes elongati, sub-graciles, tibiis tarsisque brevissime pubescentibus.

Long. 6– $6\frac{3}{4}$ mm.; lat. 2– $2\frac{1}{4}$ mm.

Differs from *M. deustus*, Thunb., and *M. tabulæ*, especially from the latter, by the much denser appressed pubescence on the elytra, the longer maxillary palps the 2nd joint of which is longer than the two apical ones taken together; each elytron is more obliquely truncate at the apex in both sexes which have also no traces of a longitudinal sulcate impression along the suture at a short distance

from the base, but on each side of the base, at a short distance from it, and midway between the suture and the rounded humeral part there is a round, somewhat small impression in each sex; the slightly infusate patch occupies about one-third of the length, and the second antennal joint has no bristly hairs underneath, thus differing from *M. deustus*.

This species is found in the plains under tufts of the plant *Mesembryanthemum edule*, and not on wet moss on mountains or mountain sides as *M. deustus* and *M. flavus*, Thunb., or *M. tabulæ*.

Hab. Cape Colony (Cape Town). L. Péringuey.

MASTIGUS PROCERUS, n. sp.

E. majoribus. Niger, brevissime griseo sericeus, elytris sternoque rufo castaneis, antennæ nigræ, interdum articulis ultimis subrufescentibus, subtenuis, griseo pubescentes, articulo primo secundoque setis rigidis nonnullis griseis subtus obsitis; caput creberrime aciculatum; prothorax latitudine duplo longior, lateribus antice attenuatis, ad medium ampliatis, deinde ad basim valde compressis sinuatisque, supra convexus, basi rotundatus, in medio longitudinaliter subcarinatus, dein ad basim canaliculatus, ibi utrimque puncto distincto præditus, creberrime aciculatus, vix distincte pubescens at subflavescente sericeus; elytra comferte punctulata, brevissime griseo sericea, valde ovato-ampliata, postice haud acuminata, apice singulatim rotundata, impressione sulciformi prope suturam sita striisque discoidalibus haud punctatis duabus ab apice basique longe remotis utrimque insculpta; pedes nigri, tibiis tarsisque subflavescente sericeis.

Long. 7 mm.; lat. 3 mm.

This is the largest species of the 7 South African ones known to me, and it is easily recognisable.

Hab. Cape Colony (Willowmore). Dr. H. Brauns.

Group of *M. longicornis*, Boh.

MASTIGUS NATALENSIS, n. sp.

Plate VI., fig. 14.

Niger, elytris dilute fuscis, tenuissime griseo cinereis; antennæ corpore longioræ, graciles, articulo primo secundoque pilis rigidis subtus bi seriatis obsitis; caput creberrime aciculatum, postice modice profunde canaliculatum; prothorax latitudine duplo longior, ad latera perparum ampliatus, deinde sensim longe constrictus, supra convexus, pone medium utrimque leviter deplanatus lineaque

supra laterali longitudinali vix distincta præditus, in medio ab apice basi distincte carinatus, ibi haud transversim impressus, creberrime punctulatus; elytra (σ) ovalia, postice sensim angustata, convexa, apice fere conjunctim rotundata, propter suturam haud depressa, at impressione sub humerali parva utrimque prædita, vel (ρ) ad latera a basi medio valde ampliata deinde perspicue sensim angustata apiceque conjunctim acuminata, supra convexa, sutura fere a medio ad apicem alte carinata ibi fere recte decliva compressaque; pedes graciles.

Long. $3\frac{1}{2}$ –4 mm.; lat. $1\frac{1}{4}$ –2 mm.

The difference between the two sexes is very great; in the σ the elytra are regularly ovate and convex, and the suture normal, while in the ρ , which is broader by one-third than the σ , the suture ending almost vertically at the apex is raised and compressed almost laminate, beginning at a short distance from the two very deep and broad dorsal foveæ, and somewhat in the shape of a wedge.

Hab. Natal (Durban). C. N. Barker.

FAMILY THORICTIDÆ.

GEN. THORICTUS, Germ.

THORICTUS MAJUSCULUS, n. sp.

Plate V., fig. 10.

Rufo ferrugineus, nitidus, setis erectis conspicuis sat dense obsitus; caput latum, rugose punctatum, dense pilosum; prothorax latitudine haud longior, postice autem antice latior, ad latera ab apice pone medium rotundato ampliatus, ibidem incisus angulis posticis acutis, extus valde productis setisque longis flavis apice dense fasciculatis, antice convexus, a medio basi nonnihil declivis, ad latera utrinque canaliculatus sat crebre punctatus, punctis setam brevem erectam ferentibus; elytra prothorace tertio longiora, basi extus angulata, prothoracis autem angulis posticis leviter angustiora, oblonga, dorso convexa, sed basi impressione communi lata profunda in medio prædita, quam in prothorace subtilius minusque confertim punctata, punctis setam ferentibus; pedes breviter pubescentes, tibiis spinosulis.

Long. $3\frac{1}{4}$ mm.; lat. 2 mm.

This species is easily distinguished from the three known South African ones (*T. capensis*, Pér.; *T. hottentotus*, Raffr.; *T.*

reicherti, Brauns) by its comparatively great size, the long yellow hairs of the upper side of the body, and above all by the shape of the prothorax which is deeply incised laterally above the posterior angles, the latter being produced into a triangular process directed outwards, bearing a dense bunch of long hairs at the tip, and projecting slightly beyond the humeral angle of the elytra, the hind median part of the disk is strongly dehiscent, but the sides have remained as high as the anterior dorsal part and form thus a somewhat narrow rounded wall along each side of the depression; the elytra have also in the anterior part of the base a dehiscent medium impression corresponding in size and depth to the prothoracic one.

Hab. Cape Colony (Matjésfontein). R. M. Lightfoot.

FAMILY BUPRESTIDÆ.

TRIBE AGRILINI.

GEN. CORÆBUS, Cast. and Gor.

CORÆBUS SCINTILLANS, n. sp.

Subtus obscure æneus, supra subtusque breviter albido pubescens; caput antice viridi vertice cupreo micans; prothorax antice læte cupreus, postice obscurior lateribus viridi micantibus; elytra a basi ultra medium viridiorichalcea, a medio apice infuscata fasciis duabus communibus albo pubescentibus prima post medium sita, altera supra apicali notata; pectus antennæ, femoraque extus læte viridia; caput crebre punctatum, antice impressum, vertice leviter canaliculatum; prothorax antice basi latior, lateraliter nonnihil ampliatus lateribus arcuatim depressis carina supra marginali perspicua, dorso antice elevatus, postice planus, anguste longitudinaliter canaliculatus, crebre asperose punctatus; scutellum basi aciculatum; elytra antice prothoracis basi nonnihil latiora, pone humeros vix sinuata dein abdomen fere tegentia, postice singulariter rotundata margine acute serrata; corpus subtus pedesque crebre punctata.

Long. 5 mm.; lat. 1 mm.

Hab. Southern Rhodesia (Sebakwe), Delancey Dods.

GEN. MELIBÆUS, Deyr.

MELIBÆUS PUNCTATUS, n. sp.

Pl. VI., fig. 7.

Nigro cyaneus, supra modice, subtus magis nitidus, prothorace macula antica supra marginali elongata alteraque rotundata magna a margine fere ad tertiam partem longitudinis extensa, medium disci basimque attingente pube appressa lutea formatis utrinque conspicue ornatus, sterno atque abdominis segmentis basalibus quatuor utrinque late albo notatis; caput fronte ab apice late profundeque canaliculata, omnino sub-transverse foveolatum, supra epistome plaga elongata e pilis orichalceis formata notatum; prothorax longitudine media fere duplo latior, ab apice pone medium lateraliter diagonalis, ibi leviter angulatus, dein basi breviter diagonalis angulo postico breve autem aculeato, basi profunde utrinque sinuatus, basi ipsa late triangula, disco a medio postice tuberoso gibbosus, antice utrinque, vix conspicue impressus, sub-transversim plicatus, interstitiis irregularibus, profunde punctatis, plicis gibbositatis magis approximatis, punctis omnibus setam albidam brevissimam ferentibus; scutellum trigonale, valde acuminatum, punctulatum; elytra prothoracis basi antice nonnihil angustiora angulis acutis, præter humeros longe sinuato attenuata, usque a tertia parte longitudinis fere ad quartam recta, dein apicem versus attenuata, apice ipso sub angulatim rotundato, haud serrulato, supra depressa, confertissime aspera, glabra; pygidium acuminatum, in medio longitudinaliter acute carinatum; abdomine segmento basali plicatulo punctato, carina laterali sinuata conspicua prædito maculaque alba supra carinam sita ornato, reliquiis crebre aspero punctatis, punctis omnibus setam brevissimam albam ferentibus, sterno conspicue transversim plicatulo punctulatoque; pedes brevissime pubescentes.

Long. 13 mm. ; lat. 4 mm.

Hab. Transvaal (Waterberg). Pretoria Museum.

GEN. AMORPHOSOMA, Cast.

AMORPHOSOMA TENEBRICOSUM, n. sp.

Cyaneo nigra, modice nitida, capite prothoraceque pube orichalcea appressa dense vestitis, elytris antice subdense griseo pubescentibus, pone medium fascia communi lata a pilis albidis orichalceisque admixtis formata, fascia altera supra apicali angustiore spatio denudato late divisa ornatis, apice ipso læte cupreo nitente; caput in fronte transverse, apice longitudinaliter sulcatum, ibi subtuber-

culatum, profunde sub-rugose punctatum, apice nonnihil plicatum ; prothorax longitudine pone medium tertio latior, lateribus declivis, margine laterali post medium valde sinuata incisaque, basi apice quarto latior, in disco postice alte tuberculatus impressionibus tribus profundis conspicuis utrinque præditus, crebre rugose punctatus, tuberculo plicatulo ; scutellum triangulum, leve, in medio longitudinaliter impressum ; elytra antice latitudine prothoracis baseos, callo humerali elongato, haud perspicuo, post humeros longe sinuata, a medio apice gradatim attenuata apice vero obtuse acuminato, supra deplanata, carinula discoidali modice conspicua fere medium attingente, a basi longe oblitterata utrinque prædita, in dorso aspero punctata, sinu laterali alte transverse plicato ; pygidium acute trispinosum ; corpus subtus pedesque conferte plicatula punctataque, punctis omnibus setam brevissimam albam ferentibus.

Long. 7 mm. ; lat. 2 mm.

Hab. Southern Rhodesia (Lesapi Riv.). G. A. K. Marshall.

AMORPHOSOMA ORIGINARIUM, n. sp.

Fusco cyanea, capite prothoraceque læte cupreis, pilis decumbentibus orichalceis vestitis ; elytris pilis brevibus sericeo albidis brevissimis in fasciis transversis communibus indistincte dispositis aspersis, apice vero plaga a pilis orichalceis formata bene notato ; caput medio anguste ad profunde canaliculatum, vertice utrinque sub-gibbosum crebre punctatum fronte transverse plicatula ; prothorax sub rugose plicatulo punctatus, latitudine maxima tertio brevior, basi apice dimidio latior lateribus ab apice basi gradatim incrassatis, ad medium nonnihil sinuatis, disco pone medium tuberculo rotundato lato modice elevato impressione discoidali lata, obliqua, altera supra marginali tertioque minore in medium baseos posita utrinque prædita ; scutellum basi transversum, breve sed acute acuminatum, impunctatum ; elytra prothoracis basi nonnihil angustiora humeris rotundatis, pone humeros longe lateraliter sinuata, dein modice ampliata postice gradatim attenuata, apice ipso sub rotundato acuminato, creberrime ubique granulata, sutura acuta nonnunquam cuprea ; pygidium in medio alte longitudinaliter carinatum, utrinque distincte spinosulum.

Long. 6 mm. ; lat. 2½ mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

AMORPHOSOMA SEMOTUM, n. sp.

Cyaneum, capite prothoraceque læte cupreis, antennis æneis ; caput profunde irregulariter punctatum, ad latera frontis indistincte

plicatulum, a vertice fere ad epistome late profundeque canaliculatum, glabrum at apicem versus tenuiter pubescens; prothorax apice basi nonnihil latior, lateribus ab apice fere ad basim modice arcuatis angulis posticis acutis, supra nonnihil deplanatus, utrinque ad medium late sub-transverse sulcatus, in medio etiam late sulcatus sulco postice magis profundo, basi utrinque profunde sinuatus in medio truncatus, plicis transversis prominentibus punctis irregularibus includentibus obtectus; scutellum antice transversum, postice elongato acuminatum, apice truncatum; elytra antice prothoracis basi vix latiora, quinties longiora, lateraliter ante medium sinuata, dein postice gradatim attenuata, ibidem singulatim subrotundata margine apicali distincte serrulata, supra plana, glabra, haud costata, plagis elongatis obscure viridibus tribus, prima a basi obliqua, secunda mediana, breve, tertio a tertia partem longitudinis apicem attingente in singulo variegata, creberrime asperoso punctata; corpus subtus creberrime asperoso punctulatum, punctis brevissime albo pubescentibus.

Long. 11 mm. ; lat. 3 mm.

This species will not probably be retained in the genus.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

GEN. PARADORA, Kerrem.

PARADORA UMTALINA, n. sp.

Plate VI., fig. 4.

Nigro ænea; capite canalicula transversa alteraque longitudinali in callis quatuor dense fulvo tomentosus divisio; prothorace longitudine latiore, antice angustato, postice ampliato, lateribus obliquis, ad basim rotundatis, margine sinuata, supra disco valde elevato, ad basim utrinque late excavato carinaque levi supra laterali prædito, medio umbrino tomentoso, lateribus indumento lanuginoso fulvo dense obtectis; scutello elongato, acute trigono; elytris prothorace vix brevioribus, elongatis, ante medium coarctatis, postice singulatim nonnihil sub-rotundatis, serrulatis, humeros callosis, supra depressis at ad apicem leviter ascendentibus, in medium disci costa longitudinali ad basim flexuosa post medium oblitterata utrinque instructis, sub-confertim punctatis, tomento fulvo aspersis, fascia supra apicali communi lata, fulva albidoque variegata alteraque angusta apicali fulva perspicue ornatis; corpore subtus cupreo æneo abdomine pone medium elytris latiore, lateribus late fulvo tomentosus.

Long. 13 mm. ; lat. 5½ mm.

This species is allied to *P. capucina*, Fahr, but the head and prothorax are not raised so as to form a kind of hood as in the latter, in which the elytra bear no traces of a dorsal costa, which is very conspicuous in *P. umtalina*, but the vestiture of the two species is very much alike.

Hab. Southern Rhodesia (Umtali). A. Bodong.

GEN. DEMOSTIS, Kerrem.

DEMOSTIS JACTUOSULA, n. sp.

Plate VI., fig. 10.

Ænea, capite prothoraceque pube orichalcea appressa dense vestitis; elytris sub-violaceis, pube griseo albida sericea transversim variegatis, humeris, basi apiceque in singulo orichalceo pubescentibus, abdomine pedibusque albido, sterno orichalceo pubescentibus; antennæ ænescentes; caput antice profunde arcuatim impressum, punctulatum, postice alte bituberculatum, tuberculis permagnis sulco angusto profunde divisus; prothorax antice postice fere tertio angustior, ad medium laterum profunde sinuatus, deinde ad basim valde ampliato rotundatus angulis posticis nullis, basi utrinque angusta et acuta, supra scutellum profunde arcuatim incisa, creberrime ubique asperoso punctatus, supra in medio gibbosus atque impressionibus duabus, prima antica elongata, secunda ad medium pone tuberculum posita fere transversa anteriore latiore longioreque utrinque præditus; scutellum late transversum, apice fovea insculptum; elytra prothoracis latitudine maxima nonnihil angustiora, lateraliter valde sinuata, apice conjunctim attenuato rotundata, apice ipso haud acuminato, supra depressa, creberrime aspero punctulata, fere coriacea, pube grisea plus minusve distincte transverse fascia formi ornata, fascia autem supra apicali apicalique bene distinctis, ea sub-maculiformi apiceque orichalcea, humeris, basi etiam orichalceo pubescentibus.

Long. $8\frac{1}{2}$ mm.; lat. 4 mm.

Hab. Mozambique (Rikatla). Rev. H. Junod.

DEMOSTIS PLICIPENNIS, n. sp.

Plate VI., fig. 9.

Cæruleo nigra capite omnino prothoracisque medio orichalceis; elytris post medium fasciis transversis duabus communibus fere indistinctis, prima pone medium, altera apicali albido sericeis; antennæ læte ænescentes; caput profunde ubique punctatum,

fronte declivi profunde impressa, vertice valde gibbose bituberculato a sulco longitudinali lato profunde diviso; prothorax longitudine haud latior, antice postice nonnihil angustior, fere ad medium laterum profunde impressus, dein ad basim perparum ampliatus, lateribus abrupte declivis margine laterali arcuatim incisa, supra utrinque bi-tuberculatus, tuberculis anticis posticis altioribus, disco a medio usque ad basim gradatim gibboso, gibbositate a tuberculis lateralibus sulco longitudinali supra laterali sinuoso profundo divisa; scutellum triangulum, fossula nulla; elytra prothoracis latitudinem maximam haud excedentia, fere quinto longiora, pone humeros longe valdeque sinuata, postice gradatim dehiscentia, apice singulatim modice rotundata, a basi fere usque ad partem quartam longitudinis distincte transverse plicata, plicis irregularibus, elevatis, apicem versus coriacea; pygidium rude coriaceum, in medio longitudinaliter carinatum, apice sub-emarginatum; corpus subtus profunde conferteque punctatum, setis nonnullis albidis aspersum.

Long. 7-9 mm.; lat. $2\frac{2}{3}$ -3 mm.

Hab. Transvaal (Leydenburg, Leydsdorp). T. Naughton.

GEN. PHLOCTEIS, Kerrem.

PHLOCTEIS DITISSIMA, n. sp.

Plate VI., fig. 6.

Nigro-cærulea, capite prothoraceque orichalceis, pube albida sparsim maculatis, rude profundeque punctatis, illo tuberculis validis quinque, munito; prothorax longitudine fere duplo latior, ad basim modice ampliatus angulis posticis acutis, dorso valde elevatus, in disco 10-tuberculatus, tuberculis rotundatis cupreo-nitentibus, carina flexuosa supra laterali atque tuberculo retrorsum hamato utrinque præditus; scutellum elongatum, acute trigonum; elytra prothorace haud latiora humeris alte callosis, ante medium coarctata, apice nonnihil singulatim sub-rotundata, supra plana costa longitudinali in medium dorsi ad apicem utrinque oblitterata, brevissime nigro tomentosa callis humeralibus costaque orichalceis, lituris flexuosis albidis in medium disci evanescentibus fasciaque transversa supra apicali distinctiore ornata; corpus subtus cæruleum, abdomen convexum, elytris latius, segmento secundo tertioque supra albo fasciatis, subtus lateraliter strigosis, in medio punctatis, plagis binis albo sericeis utrinque ornatis; pedes atro cyanei, coxis genibusque læte cupreis.

Long. 18 mm.; lat. 6 mm.

This remarkable species resembles *P. exasperata*, but it differs

not only in the livery but also in the shape of the prothorax, which is much less amplified laterally towards the base and has there a very sharply hooked tubercle; the tubercles on the forehead are much more developed, and while the two lower ones are inermous, the central and the two upper ones bear short bristles; the elytra are more deeply coarctate laterally, and the sides of the abdomen show therefore more than in *P. exasperans*; in my example the transverse, flexuose white lines are obliterated on the anterior discoidal part, but traces of them are plainly noticeable on the sides, and the space of the background separating the post-median band from the supra-apical one has a dark velvety appearance; at the very apex of the elytra are also one or two wavy, interrupted, transverse white lineoles.

Southern Rhodesia (Salisbury). G. A. K. Marshall.

PHLOCTEIS ELEGANS, n. sp.

Plate VI., fig. 8.

Atro-cyanea, capite prothoraceque tomento albido nigro variegato obsitis, illo longitudinaliter canaliculato, vertice fulvo sub-fasciculoso, hoc longitudine vix latiore, lateribus ab apice pone medium oblique ampliatius, deinde basi attenuatis, vix sinuatis at angulo postico acuto, supra antice leviter quadri-impresso, postice utrinque excavato; scutellum elongatum, acutum; elytra prothorace basi angustiora, ad medium valde sinuata at abdomine haud angustiora, deinde perparum ampliatia, apice leviter attenuata, singulatim subrotundata, supra plana humeris callosis, crebre punctata, haud costulata, tomento atro velutino obsita, a basi ultra medium albido variegata, fascia communi sinuata lata post medium sita, et intra apicem lituris plagisque nonnullis albis ornata; corpus subtus cyaneum, sterno strigoso, abdominis segmentis punctatis, lateribus dense albo sericeis.

Long. 11 mm.; lat. 4 mm.

The shape and the livery of this handsome species is almost similar to that of *P. immunita*, Fähr, but it is considerably larger, the prothorax is much more amplified laterally and not sinuate there at about the median part; in my examples of *P. immunita* the elytra are clothed from the base to two-thirds of the length with a silky white tomentum, and two or three round velvety black spots on each side of the suture, whereas in *P. elegans* the black tomentum predominates and is sparsely variegated with white.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

PHLOCTEIS DIVES, n. sp.

Plate VI., fig. 2.

Supra læte orichalcea, subtus pedibusque violaceis; capite profunde longitudinaliter canaliculato, crebre profundeque punctato, maculis pubescentibus sericeis albis quatuor notato; prothorace trigono marginibus fere rectis, postice breviter attenuato angulis posticis sub-rotundatis, supra sat crebre punctato, medio haud elevato, ante basim utrinque oblique impresso carinulaque arcuata brevi supra marginali munito, nigro velutino, maculis 13 albis ornatis; scutello elongato acute trigono; elytris prothorace haud latoribus, elongatis, ante medium coarctatis, apice singulatim nonnihil sub-rotundatis, serrulatis, supra sub-depressis, ad humeros callosis, basi late profundeque utrinque impressis, costa longitudinali in medium dorsi, crebre punctatis, indumento velutino nigro indutis maculisque 16 albis utrinque adpersis; corpore subtus modice convexo, strigoso, punctulato, sterno abdomineque maculis parvis albis adpersis; pedibus nigro-cæruleis, brevissime albo pubescentibus.

This pretty species differs from all its congeners in its livery which consists of numerous tiny silvery-white silky macules on a black velvety background; these white macules are also found on the underside as well as on the edge of the dorsal part of the abdominal segments projecting beyond the coarctate part of the elytra; the suture of the elytra is plainly carinate at a distance from the base, and the dorsal costa is very shiny.

Length 14 mm.; width 4 mm.

Hab. Transvaal (Lydenburg Distr.).

This species will probably be included in a new genus intermediate between *Phlocteis* and *Æmosis*.

GEN. ANADORA, Kerrem.

ANADORA NATALICA, n. sp.

Plate VI., fig. 5.

Ænea, nitida; capite crebre punctato, fronte longitudinaliter sulcata, utrinque fulvo fasciculata; prothorace longitudine vix latiore, lateribus bisinuatis, pone medium valde dilatatis, deinde breviter attenuatis angulis posticis rotundatis, basi valde sinuatis, supra haud convexo, ad medium sat crebre, ad latera rugose punctato, postice utrinque late profundeque impresso, disco haud elevato pube fulvescente sparsa at ad latera densiore obsito; scutello elongato

acute trigono; elytris thorace haud latioribus humeris callosis, lateribus ante medium coarctatis, apice nonnihil rotundatis, serrulatis, supra deplanatis, ad humeros utrinque profunde impressis, crebre punctulatis, humeris apiceque fulvo-fasciculatis, plagis juxta suturalibus tribus umbrino velutinis pube albida marginali fasciculae laterali atro post medium sito utrinque ornatis.

Long. 11 mm.; lat. $4\frac{1}{2}$ mm.

Hab. Natal (Stanger).

Not unlike in general facies small examples of *P. exasperans*, but the shape of the head and prothorax is very different, as both are devoid of tubercles; in well-preserved examples it is probable that the wide depression on each side of the discoidal part of the prothorax is clothed with denser fulvous hairs; the vestiture of the elytra is very faint; and along the coarctate part there is on each side a nearly obliterated patch of short, blackish-brown hairs.

KERREMANSIA, n. gen.

Caput breve, fronte longitudinaliter canaliculata, epistome breve, antennarum sulcis brevibus, genis carinulatis; oculi longi, paralleli; prothorax basi utrinque sinuatus, supra convexiusculus, in medio adque ad latera utrinque profunde sulcatus; scutellum valde elongatum, acutissimum, latitudine maxima fere duplo longius; elytra deplanata parte postica in arcum recurva, callo humerali apicalique bene notata, abdominis partem dorsalem lateraliter haud tegentia; prosternum latum, apice aculeatum, mesosternum etiam latum, pro receptione processus prosternalis antice excavatum, in medio sat profunde longitudinaliter canaliculatum; metasternum angustum; pedes validi, femoribus tibiisque intus conspicue arcuatis, tibiis sub-falciformibus atque valde compressis, fere laminatis, intus dense sub-rigide ciliatis, pedes paris tertiæ anterioribus intermediisque nonnihil graciliores; abdomen convexum, segmentis basalibus binis a sutura in medio haud divisis; pygidium in medio spinosulum.

The species of Buprestidæ, for which I propose the creation of this genus, are found holding by means of their arcuate legs to the edge of the leaves of plants which they thus devour laterally. Kerremans considers that the genus should come next to *Alcinöis* or *Synehocera*, Deyr., of the group *Agriolidæ*. I think that it is also closely allied to *Toxoscelus*, Deyr.

The main characteristic is the shape of the anterior and intermediate legs.

KERREMANSIA PARADOXA, n. sp.

Plate VI., fig. 3.

Caput, corpus subtus pedesque cyanea, his dilutioribus, fere cæruleis; antennæ æneo nigrescentes, supra fere nigra, nitida, glabra, elytris apice autem callo setulosis præditis; caput fronte confertim plicatula, late longitudinaliter canaliculata atque transverse impressa, vertice leviter bituberculatum; prothorax admodum anguste arcuatim plicatus, longitudine duplo latior ab apice pone medium lateraliter valde ampliatus, postice oblique angustatus, basi utrinque profunde arcuatus, basi ipsa angusta in medio retrorsum producta truncataque, supra carinula laterali utrinque præditus, impressionibusque tribus discoidalibus profunde insculptis notatus, margine laterum ad medium gibbosula; scutellum acute triangulum, latitudine duplo longius; elytra prothoracis latitudine maxima angustiora humeris gibbosis, pone humeros sinuata, dein apicem versus modice gradatim attenuata, apice singulatim sub-acute rotundata, supra deplanata parte posticali arcuatim recurva, basi utrinque profunde impressa atque impressionibus conspicuis transversis quatuor communibus a sutura vix divisis, costa obtusa discoidali flexuosa extrorsum terminatis prædita, callo conspicuo ad apicem posita setis rigidis modice brevibus nigris dense obsito utrinque instructa, subsparsim subscabrose punctata, apice conferte granulata, margine apicali serrulata; corpus subtus plicatulo reticulatum; abdomen convexum, segmento ultimo in medio profunde impresso; pedes anticis intermediisque intus longe subrigideque ciliatis.

Long. 12 mm.; lat. 4 mm.

Hab. Transvaal (Shilouvane). Rev. H. Junod.

KERREMANSIA ARCUATA, n. sp.

Omnino nigra obscure metallescens, glabra, a capite apice supra arcuata, nautiformi, caput fronte sulco lato profunde longitudinaliter divisa; prothorax longitudine vix latior, antice modice sinuatus, lateribus fere rectis, basi utrinque arcuatim sinuatus, supra trisulcatus, sulco medio profundo latoque, sulcis supra lateralibus brevioribus minusque profundis, areolis plicatulis omnino tectus; scutellum elongatum, acutum; elytra prothoracis latitune maxima, haud angustiora, a callo humerali longe ultra medium perspicue sinuata, deinde nonnihil attenuata, apice singulatim arcuato rotundata margine apicali leviter crenulata, supra depressa, basi utroque profunde impressa, atque impressionibus quatuor transversis a

sutura vix divisis, costulaque discoidali flexuosa extrorsum terminatis notata, tuberculis elongatis duobus primo ad partem quartam longitudinis, secundo apicali validiore, conspicuo, utrinque prædita, a basi ultra medium lateraliter haud profunde plicato reticulata, callo apicali scabrose punctato, haud perspicue setuloso; corpus subltus reticulato plicatum.

Long. 6 mm.; lat. $1\frac{3}{8}$ mm.

Hab. Southern Rhodesia (Sebakwe).

Much smaller than *K. paradoxa*, and differentiated by the shape of the prothorax.

GEN. AGRILUS, Steph.

AGRILUS MASHUNUS, n. sp.

Elongatus, sub-obscure viridis, caput late sulcatum, juxta oculos a vertice ultra medium frontis utrinque carinulatum, fere ad medium transverse angustequè canaliculatum, ubique pube flavo orichalcea dense indutum; prothorax conferte transversim plicatus, longitudine tertio latior, basi apice latitudine æqualis, lateribus ad basim brevissime ampliatis dein tenuissime attenuatis, supra in disco depressus, lateribus ab apice pone medium modice profunde impressus, in medium sub-late canaliculatus, impressionibus lateribus canaliculaque media pube orichalcea obsitis, postice carinula breve basim attingente utrinque præditus; scutellum impunctatum; elytra prothorace vix latiora, quadruplice longiora, tenuiter scabra, ad medium laterum sinuata, apicem versus acuminata, postice margine serrulata, apice ipso distincte spinoso, supra deplanata, costa discoidali acuta utrinque prædita, maculis elongatis flavo auratis inter suturam elevatam carinamque discoidalem seriatis utrinque ornata; corpus subltus nonnihil nitidius, sterno omnino pube grisea flavescente, in epipleuris aurantiaca obtectus, abdominis segmentorum parte superiore aurata, inferiore a lateribus fere ad medium griseo maculatis, pedes modice pubescentes.

Long. 10 mm.; lat. $2\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

AGRILUS GLORIOSULUS, n. sp.

Æneus, æneo violaceus vel nonnunquam æneo viridanus, caput pube grisea brevissima antice indutum, fronte indistincte canaliculata, asperose punctata, vertice distincte canaliculato punctis simplicibus sparsis; prothorax longitudine tertio latior, lateribus ad medium nonnihil sinuatis, supra deplanatus lateribus declivibus, in medio

transversim subprofunde impressis, postice carina breve utrinque præditus, disco ipso longitudinaliter canaliculato, canalicula in medio sublata interrupta, superficie tota confertim transverse plicatula; impressione discoidali, lateribusque minute griseo vel flavido pubescentibus; scutellum impunctatum; elytra creberrime scabrosa, prothoracis latitudine maxima basi haud angustiora, prothorace quinto longiora, pone humeros sinuata, apicem versus acuminata, apice ipso acuto, margine apicali distincte serrulata, abdominis parte dorsali a tertia parte fere ad apicem late detecta, dense at brevissime subaurata pilosa, supra deplanatus, basi utrinque ad humeros utrinque impressa, disco carina longitudinali ab impressione baseos apice ducta, sutura acuta, spatio juxta suturale pube brevissima, vix densa subaurata, nonnunquam deffesa, obsito; corpus subtus pedesque asperosulo punctata, punctis omnibus setulam brevissimam albidulam gerentibus; sterno omnino, abdominis lateribus late albo pubescentibus.

Long. $7\frac{1}{2}$ –9 mm.; lat. 2– $2\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Sebakwe), Delancey Dods; (Salisbury), G. A. K. Marshall.

AGRILUS DECORATUS, n. sp.

Æneo viridanus, modice nitidus at supra subtusque pube grisea flavescente breve obtectus; caput a medio frontis vertice canaliculatum, apice ipso late sulcato, antice longe denseque albido flavescente pubescens; prothorax longitudine latior, fere ad medium laterum nonnihil ampliato rotundatus, dein manifeste sinuatus, disco longitudinaliter bi-foveolatus, ad latera suboblique transversim utrinque impressus parteque posticali depressa, carina a medio basi ducta ibidem præditus, rude asperoso punctatus lateraliterque plicatulus, impressionibus omnibus flavescente pubescentibus; scutellum nitidum, impunctatum; elytra prothoracis latitudine maxima antice vix latiora, prothorace quinque longiora, post humeros modice sinuata, a medio apicem versus gradatim acuminata, apice ipso ad medium distincte spinoso, creberrime asperosa, costa discoidali nulla, in singulo quadri impressa, impressione basali ceteris profundiore, secunda ad medium, tertia pone medium quartaque supra apicem dispositis, impressionibus omnibus dense flavescente pubescentibus; epipleuris, parte dorsali abdominis detecta segmentoque tertio subtus conspicue flavescente pubescentibus.

Long. $7\frac{1}{2}$ mm.; lat. $2\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Motopos). G. A. K. Marshall.

AGRILUS FRAUDULENTUS, n. sp.

Obscure æneus, nonnunquam supra nonnihil nitidus; caput crebre punctatum pube grisea obsitum, vertice leviter canaliculatum; prothorax postice tenuiter attenuatus, longitudine nonnihil latior, antice sub-elevatus, postice arcuatim impressus, lateribus a medio basi depressis, carinula postica longitudinali utrinque præditis, in disco late sulcatus sulco in medio interrupto, sulco discoidali, laterumque impressionibus dense albido flavescente pubescentibus, parte denudata sub regulariter arcuatim plicatula; scutellum nitidum, denudatum; elytra crebre asperosa, prothorace vix latiora, fere quinto longiora, pone humeros longe at haud profunde sinuata parte abdominale modice detecta, apicem versus acuminata ibi serrulata spinulosaque, supra modice depressa, carina discoidali utrinque prædita, impressionibus tribus, prima obliqua basali, secunda prima angustiore fere ad medium, tertia post medium sitis, dense albido flavescente pubescentibus inter striam discoidalem et suturam in singulo ornata; corpus subtus crebre punctatum, brevissime albido setulosum.

Long. 4 mm.; lat. $1\frac{1}{5}$ mm.

Hab. Southern Rhodesia (Umfuli River, Sebakwe). G. A. K. Marshall; Delancey Dods.

GEN. KAMOSIA, Kerrem.

KAMOSIA TUBERCULIFRONS, n. sp.

Nigro ænea, sub-nitida, capite læte orichalcea, prothorace inornato, elytris indistincte albo sericeo variegatis, fascia transversa communi postice distinctiore, macula apicali orichalcea bene distincta apicem tegente in singulo ornatis; caput antice rude scrobiculato plicatum, ad medium frontis profunde impressum, vertice in tuberculis duobus valde elevatis, rotundatis, a sulco profunde divisus, conspicue rotundato plicatis, munitum; prothorax longitudine vix latior, lateribus sub-rectis, antice nonnihil ampliatis, ad basim nonnihil leviter incisus, supra disco elevato in medio late profundeque sulcato, sulco a carina media obtusa transversa diviso, utroque antice posticeque late impresso impressione postica carina acuta extrorsum terminata; scutellum late triangulum, curtulum, læte æneo micans; elytra antice prothoracis baseos latitudine, post humeros longe sinuato attenuata, pone medium leviter ampliata, dein apicem versus gradatim attenuata, apice ipso singulatim acuminato, extrorsum spinoso, sutura etiam nonnunquam spinosula, supra deplanata, fossa

elongata basali carinaque discoïdali a basi fere ad quartam partim longitudinis extensa utrinque prædita, in disco præsertim postice rude conferteque scabroso punctata, sinu laterali alte transversim plicato; abdomen pedes sternumque conferte punctata, hoc plicatum, punctis omnibus setulam brevissimam albidam ferentibus.

Long. 9–10 mm.; lat. $2\frac{3}{4}$ –3 mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

GEN. APHANISTICUS, Lat.

APHANISTICUS LEVICOLLIS, n. sp.

Viridi æneus, nitidus, glaber, caput ab apicis basi fere usque ad epistome profunde canaliculato, vertice ipso haud tuberculato, omnino conferte punctulatum; prothorax antice latitudine capitis baseos, longitudine latitudine æqualis lateribus fere rectis, angulis posticis acutis, prominentibus, basi ipsa apice nonnihil angustiore, supra omnino punctulatus; ab apice pone medium convexiusculus, postice late transverse impressus, impressione carina acuta supra marginali a medio disci basim attingente utrinque terminata; scutellum parvum, impunctatum; elytra antice prothoracis baseos latitudine, eo fere quadruplo longiora, ab humeros pone medium sensim sinuato attenuata, ibi brevissime ampliata, dein gradatim apicem versus attenuata, in apice ipso subacute singulatim rotundata, plicis transversis a basi longe ultra medium evidentioribus dein apice distincte interruptis crebre obsita; corpus subtus sparse punctulatum.

Long. $3\frac{1}{2}$ mm.; lat. 1 mm.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

FAMILY MALACODERMIDÆ.

SUB-FAMILY TELEPHORINA.

GEN. ICHTHYURUS, Westw.

ICHTHYURUS MASHUNUS, n. sp.

Pallide flavus, caput vertice nigrum; antennæ tenues, longæ, articulis basalibus tribus vel quatuor flavidis, ceteris sub-infuscatis; prothorax fascia transversa lata latera haud attingente, medium disci occupante, antice posticeque in medio profunde excisa notatus; elytra omnino flava; abdominis segmentum ultimum nigrum, ceteris

supra vix, subtus obscuriore infuscatis, pectus nigrum, palpi infuscati.

♂. Caput inter oculos impressum, postice canaliculatum, alutaceum; prothorax longitudine latitudine æqualis, antice arcuatus, in disco a medio postice profunde impressus, fascia nigra antice atque præsertim postice late arcuatim emarginata, notatus, indistincte alutaceus; elytra leviter alutacea brevissime pubescentia, a medio distincte marginata, margine nonnihil recurva; alæ infuscatae; abdominis segmentum ultimum late triangulo incisum, incisura fere tertio longitudinis angulis acutis, subtus profunde excavatum; pedes antici haud infuscati, intermediis femoribus extus infuscatis ibidem valde ampliatis, convexis, fere diformibus, intus nonnihil depressis, basi lobo acuto prominulo atque ad medium dente fere verticali subtus munitis, tibiis ejusdem paris leviter arcuatis, apice haud incrassatis; pedes postici tenues, modice infuscati.

♀. A mare differt pedibus omnibus tenuibus, infuscatis, spatio interoculari latiore, segmento abdominale ultimo magis recurvo, subtus haud excavato, capite corporeque subtus omnino nigris.

Long. $7\frac{1}{2}$ –10 mm.; lat. $1\frac{1}{2}$ –2 mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

According to Gestro, this species is the only one among the known South African ones in which the tibiæ of the intermediate legs are of normal shape.

FAMILY CURCULIONIDÆ.

SUB-FAMILY BRACHYCERINÆ.

GEN. BRACHYCERUS.

BRACHYCERUS KHOIKHOIANUS, n. sp.

Niger, squamis albis interdum obsitus; caput brevissimum, rude scrobiculatum, oculi ovali, depressi, palpebris nullis, rostrum capite fere quarto longius, basi tuberculis duobus conicis alte elevatis divergentibusque munitum, ad basim constrictum, in medio longitudinaliter carinulatum, antice sensim dilatatum, etiam rude scrobiculatum; antennæ sub-graciles, breviter setulosæ, rostri longitudine fere æquales, omnino albo squamosæ; prothorax longitudine haud latior, antice latitudine postica nonnihil angustior, apice utrinque late sinuatus, ad medium laterum vix ampliatus, supra atque ad latera fortiter tuberculatus tuberculis alte conicis, approximatis, antice profunde canaliculatus, canali crista elevata fere medium disci

attingente utrinque prædito; elytra basi prothorace nonnihil angustiora, dein elongato ovata, ad medium latitudine prothoracis maxima tertio latiora, modice convexa, postice retusa, late profundeque transverse seriato foveolata, in dorso biseriatim tuberculata, tuberculis validis, acutis, intervallis seriatim verrucosis; corpus subtus rude scrobiculatum; pedes graciles, longitudine corporis æquantes, tarsi omnes longissimi, apice dilatati, subtusque lateraliter a medio apice longe pulvinati; tibiæ anticæ apice fere truncatæ.

Long. (rostr. excl.) 16–17 mm.; lat. $8\frac{1}{4}$ – $8\frac{1}{2}$ mm.

Hab. Namaqualand (Bushmanland). Schlechter.

This species is easily recognised by the great length of its slender legs, all of which, tarsi included, equal the whole body in length. All the examples which I have seen are partly without white scales except on the rostrum and on the legs, but there can be no doubt that in their non-detrite form they are entirely covered with a squamose indumentum.

BRACHYCERUS NAMANUS, n. sp.

Niger indumento terreno fere omnino tectus; caput breve, oculi sub-ovati depressi, rostrum elongatum, capite fere triplo longius, a fronte modice profunde disjunctum, basi angustatum, dein apice triangulatim ampliatum, supra deplanatum, in medium apicis carina elevata triangula munitum; prothorax globosus, lateribus in medio rotundatus, tuberculis rotundatis apice denudatis confertis obsitus, a medio basi laxè haud distincte canaliculatus; elytra elongato ovata, antice prothoracis basi haud latiora, ad medium parum ampliata, supra valde convexa, postice sensim declivia, fere retusa, 6 vel 7-fariam utrinque tuberculata, tuberculis confertis, plus minusve rotundatis, ad partem declivam acutioribus, apice denudatis, granulis simplicibus in serie extima obsita; corpus subtus pedesque terreno pulverulenta.

Long. $9\frac{1}{2}$ –11 mm.; lat. 6– $6\frac{3}{4}$ mm.

Belongs to the same group as *B. texatus*, but the rostrum is longer and the prothorax more regularly globose.

Hab. Cape Colony (Namaqualand). G. Alston.

BRACHYCERUS AMATONGAS, n. sp.

Breviter ovato ampliatum, niger, rostro capiteque, rufo ochraceis, fere miniatis, prothorace albidiore squamuloso; elytris maculis plurimis albidis ochraceis, femoribus rufo ochraceis; caput transversum, haud breve, vage punctatum, oculi ovati, depressi, palpebra evidenter muniti, rostrum capite quam duplo longius, basi triangu-

latini incisum, supra fere planum, in medio haud longitudinaliter carinulatum, modice punctatum, punctis simplicibus; antennæ subbreves, articulis longitudine duplo latioribus, ultimo præcedenti quintuplo longiore; prothorax longitudine media duplo latior, lateribus pone medium angulato dilatatus atque acute spinosus, supra antice profunde canaliculatus, postice carinis tribus subobtusis at alte elevatis, mediis extus curvatis distincte præditus; elytra fere globosa, convexa, postice modice dehiscentia, tuberculis verrucosis æqualibus confertim seriatis obsita; pedes modice elongati, tibiis anticis extus remote denticulatis, apice longe, conspicue mucronatis.

Long. 15 mm.; lat. 9 mm.

This species is allied to *B. wahlbergi* and to its variety *B. picturatus*, Fahr., which form a group in the South African species easily distinguished by the long spine of the apical outer end of the fore tibiæ. It is easily distinguished from *B. wahlbergi* by the four hind costæ of the prothorax, the two median ones of which, which are nearly the continuations of the nearly straight walls of the anterior groove, curve outwardly in the shape of a comma. The outer costa in the posterior part is also very conspicuous.

Hab. Mozambique (Amatongas). P. A. Sheppard.

BRACHYCERUS MOUFFLETI, n. sp.

Niger, capite, prothorace pedibus subtusque indumento flavidulo obsitis, elytris pagina superiore lateribusque partim denudatis; rostrum capite duplo longius, basi profunde strangulatum, marginibus lateralibus distincte carinatis in medio haud conjunctis, supra deplanatum; oculi depressi, supra antice carinulati; prothorax longitudine fere duplo latior, lateribus subampliato rotundatus, supra elevatus, ad medium fere gibbosus, basi truncatus, antice utrinque valde sinuatus, parte antica media prominente at haud elevata, in disco antice subimpressus, foveis latis indumento repletis obsitus, in interstitiis sparsim brevissime setulosus, lateraliter sparse granulatus; elytra ampliato rotundata, ad medium prothorace fere tertio latiora, convexa, postice modice dehiscentia, profunde reticulato foveolata, tuberculis subrotundato acuminatis, in dorso remotius lateraliter confertius in series 9 utrinque prædita, seriebus dorsalibus alternis distinctioribus; corpus subtus rugose punctatum, abdominis segmentis setulosis; pedes modice robusti, setulosi.

Long. 11 mm.; lat. 7 mm.

Hab. Northern Ovampoland; Benguela.

The facies of this species is similar to that of *B. rotundatus*, Pér., but the sculpture of the elytra is different, the tubercles of the dorsal series being much broader, depressed in the anterior part, and conical behind and on the sides, those of the alternating series in the dorsal part are more developed than the others; in the prothorax all the alveolar cavities are filled with a thick coating.

SUB-FAMILY BRACHYDERINÆ.

GEN. STROPHOSOMUS, Sch.

STROPHOSOMUS FUNESTUS, n. sp.

Niger, squamis supra albidis umbrinisque, ad latera subtusque sub-opalinis tectus; antennæ rufescentes, scapo medium oculorum tantum modo attingentes; caput squamis umbrinis, ad latera supra oculos albidis, fronte latitudine maxima dimidio brevius, distincte canaliculatum a rostro canalicula transversa divisum, oculi prominuli longe retrorsum producti; prothorax longitudine medio duplo latior, basi apiceque truncatus ad angulos autem utrinque valde sinuatus, angulis ipsis præsertim posticis prominenter acutis, lateribus fere rectis at ad medium (♂) minus, (♀) magis acute angulatis, supra profunde crebreque punctatus, umbrino squamosus, vittis sub-latis albidioribus prima in disco altera ad latera utrinque ornatus; elytra antice prothoracis basi angustiora, basi nonnihil arcuata humeris, acutis reflexis, ab humeros ovalia, convexa, postice sub-retusa, profunde punctato striata, interstitio juxta suturali quintoque in dorso obscuriore umbrinis, cæteris præsertim ad latera albidioribus, in hoc loco magis minusve opalinis; corpus subtus squamis albedo opalinis tectum; pedes opalino squamosi, breviter albedo pubescentes, pilis crassioribus squamiformibus albis immixtis; pedes rufescentes.

Long. 5 mm.; lat. 2½ mm.

Hab. Transvaal. C. W. Howard.

This species, which is easily recognised from its congeners of the group having the eyes produced backwards, owing to the shape of its nearly quadrangular prothorax, has been sent to me from the Transvaal as proving injurious there to the crops of cotton and tobacco.

STROPHOSOMUS HAMATICOLLIS, n. sp.

Niger, squamis albedo griseis ad latera subtusque pallidioribus at haud opalinis vestitus, supra setulis rigidis brevibus, in elytris magis

conspicuis atque seriatis præditus; pedes antennæque fusci vel rufescentes, illis omnino squamosis ciliatisque; rostrum in medio capite nonnihil brevius, in hoc loco carinulatum, caput longitudine duplo latius fronte distincte canaliculata; antennæ graciles, scapo oculorum median partem attingente, oculi conspicui retrorsum valde producti; prothorax longitudine fere tertio lator, ab apice lateraliter late ampliato rotundatus, mox pone medium profunde transversim incisus, angulo acuto, retrorsum hamulato, deinde basim versus oblique attenuatus, antice rectus, basi (♂) vix, vel (♀) nonnihil arcuatus, basi ipsa marginata, convexiusculus, in medio longitudinaliter canaliculatus; elytra ovalia, basi prothoracis latitudine maxima nonnihil angustiora, profunde punctato striata, striis interstitiis nonnihil pallidioribus, his setulis brevibus seriatis præditis.

Long. 6–7½ mm. : lat. 2½–3 mm.

Hab. Transvaal. C. W. Howard.

Very easily recognised by its broadly amplified prothorax, which is transversely incised slightly past the middle, and obliquely attenuate thence towards the base.

GEN. CIMBUS, Sch.

CIMBUS GRATUS, n. sp.

Elongatus, niger, pedibus rufescentibus; supra subtusque pube appressa griseo albidula dense vestitus, apice præsertim ad suturam longe albo comosus; caput omnino creberrime punctatum a vertice apice canaliculatum, rostrum capite nonnihil longius angustiusque, fere lineare, oculi prominentes semiglobosi, antennæ ultra medium prothoracis attingentes; prothorax longitudine latitudine fere æquans, apice posticeque truncatus, antice modice constrictus, deinde cylindricus, supra conferte transversim plicatus; elytra elongata, basi prothorace dimidio latoria, ab humeros pone medium fere linearia, deinde apicem versus angustata, apice singulatim longe spinosa supra convexa, profunde punctato striata, interstitiis creberrime rugoseque punctulatis; corpus subtus nigrum, rugoso punctatum; pedes cinereo villosi, nonnunquam squamis nonnullis opalinis adpersi.

Long. 14–18 mm. ; lat. 5 mm.

This species is easily recognised by the long white villose pubescence of the posterior part of the suture, and also along the hind part of the outer margin. One of my examples exhibits faint traces of a dorsal and a supra-lateral band of blue hairs in the anterior part of the elytra; these hairs are, however, not squamose,

but as long and slender as the other appressed greyish white ones of which the vestiture consists.

Hab. Transvaal (Pietersburg). A. T. J. Janse.

CALÆCUS, nov. gen.

Rostrum a capite haud disjunctum, nonnihil angustius, vix duplo longius, fere lineare, a basi gradatim sub-dehiscens, lateribus haud carinatum, supra depressum, a basi capitis fere usque ad apicem in medio tenue canaliculatum lineaque impressa abbreviata utrinque munitum; oculi elongato ovati, prominuli; antennæ in apicem rostri insertæ, graciles, thoracis medium haud attingentes, funiculo 7-articulato, articulo primo secundo validiori, nonnihil longiori, clava acute pyriformi; prothorax fere planus, apice truncatus, basi leviter arcuatus apiceque dimidio latior, lateribus linearis, in medio canaliculatus; scutellum brevissimum, triangulum; elytra prothorace nonnihil latiora angulis antrorsum productis, supra plana, lateraliter alte carinata lateribus abrupte declivis; abdominis segmentum secundum duobus sequentibus simul sumptis longitudine æquale; pedes sub-elongati femoribus incrassatis, posticis abdominis segmenti ultimi basim attingentibus, tibiis omnibus tantulum introrsum flexis, anticis intus serrulatis; tarsi omnes subtus spongiosi, articulo primo secundo dimidio longiore.

I propose this genus for a very singular species which must come in the neighbourhood of *Cimbus* and *Polycleis*.

CALÆCUS CARINATIPENNIS, n. sp.

Plate V., figs. 17, 18.

Niger squamis contiguis albidis vel argenteo opalinis tectus, pedibus rufescentibus; caput rostrumque longitudinaliter plicatula; prothorax depressus, in medio canaliculatus, crebre præsertim ad latera rugulosus, lateribus anguste, in medio late longitudinaliter denudatus; scutellum minutissimum; elytra prothorace nonnihil latiora angulis rectis, antrorsum productis ejusdem angulos posticos, amplexentia, sub-lineararia, ad partem posticam leviter ampliata, deinde apice acuminata ibi singulatim mucronata, supra-plana, carina laterali valde elevata sub-sinuata prædita, modice profunde striato punctata interstitiis planis crebre rugose aciculatis, vitta suturali sub-lata a basi apice denudata; corpus subtus dense squamosum; tibiæ breviter pubescentes.

Long. $8\frac{1}{2}$ – $10\frac{1}{2}$ mm.; lat. 3 – $3\frac{1}{2}$ mm.

Hab. Transvaal (Pietersburg). A. T. J. Janse.

SUB-FAMILY SOMATODINÆ.

GEN. SOMATODES, Schönh.

SOMATODES TRANSVAALENSIS, n. sp.

Plate V., fig. 15.

Niger, squamis minutis umbrinis vestitus; caput subpunctulatum fronte profunde impressa, carinulæ rostri conspicuæ; prothorax longitudine nonnihil latior, post medium laterum distincte angulatim productus, ubi profunde incisus, postice obtuse at alte tuberculatus, in partem anticam disci late impressus, impressionibus sub levibus a carina elevata divisus, parte postica lateribusque verrucis agglomeratis obstitis, basi contracta, apice latitudine æquante, scutellum nullum; elytra elongata, longitudinaliter arcuata, prothorace quam duplo longiora et ejusdem latitudine maxima haud latiora, in medio laterum haud ampliata, apice conjunctim rotundata, supra convexa, postice dehiscencia tuberculis liberis validis acutis trifariam seriatis utroque prædita, margine apicali etiam tuberculis humilioribus obsita, interstitiis plus minusve alveolatis; pedes tenuissime squamosi.

This species is easily distinguished from its congeners *S. variegatus*, Waterh., and *S. bidentatus*, Péring., by the shape of the prothorax the sides of which are incised past the middle, with the posterior part above the suture bluntly tubercular, as well as by the median ridge of the anterior part of the disk, and also by the more arcuate elytra, the seriate tubercles of which are much more developed than in *P. bidentatus* and do not end in a blunt tubercle at the apex.

Length 13 mm.; width 6 mm.

Hab. Transvaal (Lydenburg). Transvaal Museum.

SUB-FAMILY TANYRRHYNCHINÆ.

GEN. NESIOTES, Woll.

Journ. Entomol., vol. i., 1862, p. 211.

The two South African species I include in this genus differ somewhat from Wollaston's figure and descriptions of the St. Helena species in the antennal joints of the funicle being closely set, and in the elytra being costate. Both have the scape fringed inwardly

with a bunch of thick squamiform bristles like two of the St. Helena species (*N. barbatus* and *N. fimbriatus*), and also the closely allied form *Echinosoma porcellus* from the Madeiran archipelago, teste Wollaston. The eyes in the two South African species consist of a few coarse facets, and all the tibiæ are very strongly unciform.

This last character differentiates them from *Nesiotes*, in which the anterior tibiæ only are unciform, and from *Echinosoma*, in which the anterior and intermediate ones, but not the posterior, are shaped in that manner. If these differences were thought by other Coleopterists to be sufficiently important to justify the creation of a new genus, I would propose the name of *Nesiotophasis* for these two South African species.

NESIOTES CAPICOLA, n. sp.

Plate V., fig. 3.

Elongato-ovatus, ferrugineus, squamis elongatis in punctis sitis sparsim obsitus, pedibus dense squamulosis; rostro arcuato, basi apiceque quam in medio nonnihil latiore, profunde punctato, medio linea levi; antennis crassiusculis, ante medium sitis, scapo squamis elongatis crassis intus ad medium barbato, articulo 2° quam 3° latiore, haud sensim longiore, reliquis haud laxis, clava ovalis, haud acuminata, integra, apice spongiosa; capite sparsim punctato, oculis e granulis nonnullis formatis; prothorace antice lateraliter oblique constricto deinde fere parallelo sed ad basim leviter attenuato, profunde punctato carinulaque media levi instructo; scutello nullo; elytris connatis, elongato-ovatis, alte costatis, interstitiis profunde punctatis; subtus parce punctatus, segmentis abdominis duobus primis connatis at linea plus minusve in medio oblitterata divisus, in medio late profundeque depressis (an ♂), segmento ultimo profunde conferteque squamulato punctato; tibiis totis in uncum magnum arcuatum apice productis, tarsorum articulo tertio vix dilatato, unguiculis brevibus, liberis.

Length $2\frac{1}{2}$ – $2\frac{3}{4}$ mm.; width $1\frac{1}{2}$ – $1\frac{3}{5}$ mm.

Hab. Cape Town. In leaf mould.

NESIOTES PROMONTORII, n. sp.

Plate V., figs. 1–2.

Ovatus, piceus vel ferrugineus, sub-nitidus, squamis crassiusculis in punctis sitis sparsis, in femoribus tibiisque densissimis obsitus; rostro sparsim punctato foveolato, medio linea brevi haud elevata; antennis crassiusculis, ante medium sitis, articulo 2° quam 3° latiore, haud sensim longiore, scapo ad apicem intus dense squamoso, oculis

magis granulatis, distinctioribus; prothorace ut in specie præcedenti, medio distincte carinato sed postice gradatim angustiore, foveolato-punctato; elytris valde convexis, ventricosis, basi utrinque acute angulatis, acute costatis, costa prima a basi longe remota, interstitiis præsertim ad latera profunde foveolatis; segmentis abdominis basalibus duobus latis, connatis, sutura obsoleta divisis, segmentis tribus apicalibus magis elevatis; tibiis totis apice valide arcuatim uncinatis, tarsorum articulo tertio modice dilatato, unguibus liberis sensim elongatis.

Long. $1\frac{3}{4}$ - $2\frac{1}{5}$ mm.; lat. $1\frac{1}{4}$ mm.

Hab. Cape Town. A. Raffray.

Also found among dead leaves or leaf mould.

COSTATEROPHYSIS, n. gen.

Corpus elongato-ovatum; caput breve, in prothorace profunde insertum, oculi fere ad basim rostri siti, minuti at prominentes, valde granulati, rostro prothorace nonnihil longior, subarcuatus, supra 4- vel 5-carinatus, scrobis distinctis, antennæ ante apicem insertæ, longiusculæ, scapo oculos attingente, apice incrassato, funiculo 7-articulato articulis setulosis, articulo basali secundo tertioque simul sumtis longitudine æquali, clava ovata apice tantummodo indistincte bi-annulata, ibi sericea pubescente; prothorax antice constrictus, latitudine nonnihil longior, lateribus nonnihil rotundato ampliatus; scutellum obsoletum; elytra elongato-ovata, prothorace duplo vel fere triplo longiora, basi truncata, acute costulata; abdomen segmentis primo et secundo omnino connatis medium longitudinis attingentibus; pedes sub-graciles, tibiis anticis magis, ceteris minus intus mucronatis.

The insects belonging to this genus are found among fallen leaves or similar detritus.

Key to the Species.

Prothorax crebre granulato tuberculosus	.. .. .	<i>capicola.</i>
Prothorax profunde alveolatus	.. .. .	<i>raffrayi.</i>

COSTATEROPHYSIS CAPICOLA, n. sp.

Plate V., figs. 4-5.

Terreno brunnea, vix nitida, elytris dilutioribus; caput deflexum, crebre granulatum, rostro supra acute quinque carinato, scrobis etiam supra carinulatis; prothorax antice perspicue transversim contractus, medio obsolete canaliculatus crebre granuloso tuber-

culatus, interstitiis setam rigidam brevissimam instructus; elytra elongato ovalia, postice convexiuscula, in singulo acute quinque carinata, carinis alternatis duabus reliquis altioribus, subserrulatis, brevissime remote setigeris, interstitiis profunde seriato punctatis, sutura margineque laterali acuta; subtus rugosus, vix squamosulus; pedes subgraciles aliquantulum at brevissime setulosi.

Long. (rost. excl.) $2\frac{1}{4}$ –3 mm.; lat. $1\frac{1}{5}$ – $1\frac{3}{4}$ mm.

Hab. Cape Town. L. Péringuey; A. Raffray.

COTASTEROPHYSIS RAFFRAYI, n. sp.

Rufa, sub-nitida; caput breve, profunde punctatum, punctis brevissime setigeris, rostro supra quadricarinato, setulis rigidis albidis remotis adperso; antennarum funiculo longe albido hispido; prothorax latitudine nonnihil longior, antice perspicue contractus, lateribus nonnihil arcuato ampliatus, fossis alveolatis sub-contiguis, setam brevem albulam in medio sitam ferentibus indutus; elytra prothorace duplo longiora, sutura, margine laterali carinisque subserrulatis quinque, alternatis ceteris magis elevatis, seriatim remote albo setosis, interstitiis late foveolatis in singulo prædita; abdomen sparse, breviterque, sternum nonnihil longius setulosa; pedes profunde crebre foveolati, foveis setam rigidam ferentibus.

Long. $2\frac{1}{4}$ – $2\frac{1}{2}$ mm.; lat. $\frac{3}{4}$ –1 mm.

Hab. Neighbourhood of Cape Town.

COTASTERIDUS, n. gen.

Gen. *Cotasterophasi* simillimus, præcipue differt funiculo antennarum sex articulo, articulo primo basi tenui ad apicem intus valde clavato, duobus sequentibus simul sumtis nonnihil longiore, secundo conico, ceteris subtransverse moniliformibus; clava haud distincte annulata; oculis magis prominentibus; elytrorum costis æqualibus setisque crassioribus magisque glanduliformibus seriatis; tibiæ apice acute hamatæ.

COTASTERIDUS CAPENSIS, n. sp.

Rufo ferrugineus, subnitidus; caput crebre punctatum, rostro supra bicanaliculato atque supra scrobes distincte carinato, sparse setoso punctato, funiculi articulis primis vix setosis, clava pubescente setulosaque; prothorax latitudine longior, antice conspicue constrictus, dein retrorsum fere parallelus, supra vix convexus, foveis profundis setam crassam ferentibus intervallo

angusto elevato divisis conferte præditus; elytra prothorace tertio atiora angulis humerosis distinctis, elongato ovalia, a medio convexiuscula, manifeste costata, costis modice carinatis, æqualibus, setis crassis albidis subremote seriatas, interstitiis late at haud profunde alveolato punctatis; corpus subtus pedesque profunde alveolata, alveolis omnibus setam rigidam albam ferentibus.

Long. $1\frac{1}{2}$ –2 mm.; lat. $\frac{3}{4}$ – $\frac{1}{2}$ mm.

Hab. Cape Town. L. Péringuey.

I met this species but once, and that in great numbers, at the foot of the wall of a building surrounded by grass.

SUB-FAMILY ANTLIARRHYNIDÆ.

GEN. ANTLIARRHINUS, Schönh.

ANTLIARRHINUS PEGLERÆ, n. sp.

Oblongus, deplanatus, semper niger, nitidus rostro piceo, rostro maris prothorace haud longiori, supra profunde canaliculato, femine corpore haud sensim breviori, cylindrico, recto; caput angustum, breve, pone oculos constrictum; antennarum articulis in mare crassiusculis, in femina tenuioribus; prothorax latitudine nonnihil longior, ab apice ultra medium, lateraliter gradatim ampliatus, ubi basi quarto lator, confertim aciculatus, fere a medio disci basi longitudinaliter subcaniculatus; scutellum brevissimum, basi bi-impressum; elytra prothorace quasi tertio longiora latioraque, dorsum striis tribus præter apicem haud punctatis, interstitiis planis, ceteris late profundeque a basi apice transverse punctato crenulatis, interstitiis alte carinatis; corpore subtus pedibusque confertim aciculato punctatis, his femoribus in quoque sexu valde ampliatis tibiisque apice breviter fulvo tomentosus.

Length (rostr. excl.) 6–9 mm.; width $2\frac{1}{2}$ –3 mm.

This species is easily distinguished from *A. zamia* by its more robust facies, and the different shape of the prothorax; the elytra are much more highly carinate laterally and behind. The rostrum is more robust in the female and does not reach the great length of that of *A. zamia*.

Bred from some cones of the Cycad, *Encephelartos Altensteini* by Miss A. Pegler, after whom I propose to name it.

Hab. Cape Colony (Kentani).

TRIBE COSSONINI.

PENTARTHOPHISIS, n. gen.

Corpus elongatum, supra depressum, rostrum capite duplo longius, vix arcuatum, parallelum; oculis nullis; antennæ ante medium rostri insertæ, crassæ, funiculo 5-articulato, scapo clavato, articulis quatuor sequentibus longitudine fere æquali, articulo 2^o-3^o nonnihil longiore, vix latiore, 4^o-6^o transversis; clava lata, ovali, integra, apice spongiosa; prothorax antrorsum vix angustatus, fere parallelus, basi truncatus; scutellum minutissimum; elytra subparallela, connata, basi prothorace nonnihil latiora, pone humeros perparum ampliata, deplanata, postice modice attenuata convexiusculaque pygidium obtegentia; pedes robusti, femoribus muticis, clavatis, tibiis in unicum magnum inflexum productis, nonnihil arcuatis, posticis compressis, valde dilatatis, tarsis brevibus, crassis, articulo tertio modice lobato; abdomen e segmentis 5 compositum, segmentis primo secundoque arete connatis reliquis simul sumtis longioribus.

I am proposing this genus for a small, blind Tanyrhynchidous weevil found by my friend Mons. A. Raffray in the ground, at the root of a dead tree.

PENTARTHOPHISIS RAFFRAYI, n. sp.

Plate V., figs. 6, 7, 8.

Testaceus, nitidus, rostro profunde punctato pilisque crassis squamulosis obsito; capite glabro, conferte punctulato; antennarum articulis pilis rigidis brevibus griseis obtectis, scapo pilis squamiformibus longis crassisque ad apicem intus barbato; oculis nullis; prothorace latitudine duplo longiore, supra modice deplanato, parallelo sed ad apicem tenuissime angustato, basi truncato, profunde conferteque foveolatopunctato, glabro; elytris connatis, elongatis, ad apicem subacuminatis, in dorso modice depressis at postice convexiusculis, punctis profundis setam brevem albidam ferentibus seriatis obtectis; subtus profunde punctato, sparsim squamoso piloso, femorum posticorum marginibus duabus tibiisque posticis dense squamosis, his extus sparsim rigide setosis.

Long. 2 mm.; lat. $\frac{1}{2}$ mm.

Hab. Cape Town.

TRIBE COSSONINI.

GEN. PENTARTHURUM, Woll.

PENTARTHURUM CAPENSE, n. sp.

Plate V., figs. 11 and 12.

Elongatum, angustum, rufo ferrugineum elytris fusco nigris, nitidum glabrum; rostro cum capite fere prothoracis longitudine æquali, illo a medio apice nonnihil curvato, subconfertim punctulato, supra in medio leviter strigillato, hoc in medio fere leve, fronte haud impresso; antennæ, funiculo 5-articulato,* articulis crassis, clava ovali suturis tribus conspicuis; oculi sub-validi, conspicue granulati; prothorax elongato ovatus, antice aliquantulum constrictus, basi apice evidenter latior, lateribus rotundatis, convexus, acutissime aciculatus, punctisque distinctis sub-remote sparsis, in medio linea longitudinali leve præditus; elytra antice prothoracis latitudine maxima, postice ampliata, apice conjunctim rotundata, supra convexa, fere cylindrica, apice dehiscentia, haud profunde punctato striata punctis striisque lateralibus magis indistinctis; pedes impunctati, glabri, tibiis mucro incurvo valido, apice intus rigide setulosi.

Long. $3\frac{1}{2}$ – $4\frac{1}{2}$ mm.; lat. $\frac{4}{5}$ –1 mm.

Captured in dry fern-stems.

Hab. Cape Colony (Muizenberg). A. Raffray.

PENTARTHURUM INDICATOR, n. sp.

Plate V., fig. 13.

Rufo ferrugineum, nitidum; rostrum capite nonnihil longius, ante medium aliquantulum curvatum, crebre punctulatum, caput fronte haud impressum, omnino crebre punctulatum, oculi validi, reticulati, haud conspicue granulati, antennarum clava pubescente, scapo 5-articulato, articulis crassis; prothorax antice attenuatus, constrictus, a strictura subelongato rotundato ampliatus, basi apice tertio latior, convexus, profunde punctatus punctis subconfertis; elytra fere parallela, postice conjunctim rotundata, supra ad basim aliquantulum, ante medium magis convexa, postice dehiscentia, in dorso manifeste punctato striata; pedes vix punctati, tibiis præsertim antice longe mucronatis.

Long. 3 mm.; lat. 1 mm.

Hab. Cape Colony (Cape Town).

* The figure shows wrongly six joints.

MESITOMORPHUS, n. gen.

Corpus cylindricum; caput deflexum, rostro verticale, plano, capite dimidio longiore, antennæ ante medium insertæ, scrobis profundis oculorum apicem attingentibus, scapo longitudine tota nonnihil brevior oculorum apicem nonnihil remoto, ad apicem sub-flagellato, funiculo 7-articulato, primo valde incrassato, cupuliformi, reliquis transversis gradatim modice incrassatis, coarctatis, clava valde elongata, ovato acuminata funiculo dimidio longiore, haud distincte annulata; oculi permagni, convexi, ad latera capitis siti, confertim reticulati; prothorax latitudine duplo longior, fere cylindricus, antice postice nonnihil angustior ibidem haud sinuatus, in medio disci longitudinaliter carinatus; scutellum subobtusè triangulum; elytra prothoracis latitudine, cylindrica, apice abrupte declivia pygidii basim tantum modo tegentia, hoc verticali, late detecto; abdomen fere cylindricum, quinque articulatum, segmento primo secundoque in medio connatis sutura haud divisis at ad latera distincte annulatis, reliquis tribus simul sumtis nonnihil brevioribus; coxæ late remotæ, globosæ; pedes haud elongati, femoribus valde incrassatis, extrorsum convexis, subtus dente valido armatis, tibiis leviter incurvatis, apice modice dilatatis, intermediis extrorsum late dentatis, apice mucronatis.

This singular genus has more the appearance of a Scolytid than of a Curculionid, and its habits are more those of the former.

MESITOMORPHUS VESTITUS, n. sp.

Plate V., figs. 19-20.

Nigro fuscus, pube griseo flavescente densa indutus, antennæ pedesque sub-rufescentes; caput rostrumque creberrime punctulata, a vertice apice rostri pube flavescente obsita, fronte profunde impressa; prothorax crebre profundeque punctatus, in medio carinulatus, dense pubescens, maculis duabus denudatis utrinque notatus; elytra profunde striato punctata, prothorace contigua, hoc dimidio longiora, haud latiora, cylindrica, apice abrupte dehiscentia, fasciis tribus communibus e pilis longis appressis flavescens formatis, prima suturali, secunda fere media valde bisinuata tertiaque apicali ornata; pygidium latum, perpendiculare, in medio manifeste impressum, crebre punctatum, dense villosum; corpus subtus pedesque dense villosa.

Long. 4 mm.; lat. $1\frac{1}{2}$ mm.

Hab. Cape Colony (Seymour), under bark, or in wood.

FAMILY CERAMBYCIDÆ.

SUB-FAMILY CERAMBYCINÆ.

GEN. CLYTANTHUS, J. Thoms.

CLYTANTHUS DODSI, n. sp.

Niger, supra subtusque pube brevissima griseo murina dense tectus; caput subtiliter coriaceum, carinula brevissima frontali media præditum; antennæ elytrorum mediam partem attingentes, articulis basalibus quatuor pube grisea vestitis, ceteris opacis, quatuor ultimis apice extus subacuminatis; prothorax fere orbicularis, lateraliter longe at tenuissime albido villosus, macula rotunda nigra, nonnunquam subobliterata utrinque notatus; scutellum parvum, apice late at obtuse rotundatum; elytra linearia, subcylindrica in medio laterum nonnihil angustata, angulo postico spinula munito, in dorso convexa, fascia diagonali umbrina a scutello usque ad medium laterum ducta, linea albido flava medium fasciæ superante alteraque transversa simplice, integra, pone medium sita utrinque ornata; corpus subtus pedesque murino pubescentia; segmentum basale abdominis apice albo marginatum, meta-mesosternumque fascia laterali alba notata.

This species, the vestiture of which is not unlike that of *C. westringi*, Fahr., is distinguished from it by the more regularly orbicular prothorax which in the last-named species is plainly attenuated laterally in front; the four or five ultimate joints of the antennæ are plainly more angular outwardly at apex, and in the centre of the diagonal infuscate, or black band of the elytra, is a narrower tomentose light flavescens narrower one.

Length $9\frac{1}{2}$ –17 mm.; width $2\frac{1}{2}$ – $4\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

SUB-FAMILY LAMIINDÆ.

GEN. TLEPOLEMUS, J. Thoms.

TLEPOLEMUS NAMAQUA, n. sp.

Niger, pube appressa dense vestitus; caput antennæque pube cinereo opalina tecta, illo pilis longis nigrescentibus adsperso, mandibularum basi in spinam longam fere porrectam utrinque

producta (♂); antennæ corpore dimidio longioræ, articulis longe hirtis; prothorax basi apiceque latitudine fere æqualis, intra basin transversim impressus, supra modice convexus, lateribus in medio acute angulatis, vitta laterali alba lata utrinque ornatus; elytra prothorace duplo longiora antice basi prothoracis duplo latiora, retrorsum distincte attenuata, apice basi tertio angustiora, rotundata, ad medium baseos bituberculata, pone basin transversim subdepressa, a medio postice modice convexa, seriato punctata, punctis aliquantum remotis, setamque longissimam albam singulatim ferentibus, fascia lata alba sinuata ad suturam interrupta alteraque communi angustiora post medium sita ornata; corpus subtus opalino cinereo dense tomentosum; pedes albido setosi.

Long. 9 mm.; lat. 4 mm.

This species differs from its congener *T. puerilis*, Thoms., in the livery and also in size. In the latter the whole prothorax is clothed with a fulvous pubescence, and the design of the elytral bands is of another shape and colour.

Hab. Namaqualand (O'okiep). L. Péringuey.

GEN. BLEPISANIS, J. Thoms.

BLEPISANIS BICOLOR, n. sp.

Valida, nigra, elytrorum basi late rufo fasciata, femoribus rufescentibus, supra subtusque præsertim pube brevissima grisea dense obsita; caput suberebre foveolato punctatum, in medio frontis distincte canaliculatum; antennæ subvalidæ, elytrorum medium longitudine excedentes, nigræ brevissime, articulis basalibus duobus exceptis, pubescentes; prothorax antice leviter, postice profunde strangulatus, ad latera modice rotundato ampliatus, supra evidenter convexus, foveato reticulatus, linea media levi longitudinali antice posticeque oblitterata præditus, elytra prothorace basi quarto latiora fere quinto longiora, retrorsum gradatim angustata, basi apice fere dimidio latiora, apice singulatim obtuse sub-rotundata, in dorso deplanata, foveis seriatis, approximatis antice latioribus setam appressam brevissimam singulatim ferentibus obsita, costulaque dorsali prædita.

Length $22\frac{1}{2}$ mm.; width 6 mm.

This very distinct species seems to have no close ally among its South African congeners.

Hab. Cape Colony (Kokstad). A. L. du Toit.

FAMILY CHRYSOMELINÆ.

SUB-FAMILY MEGALOPINÆ.

GEN. PÆCILOMORPHA, Westw.

PÆCILOMORPHA GENTILIS, n. sp.

Plate VI., fig. 1.

Nigra abdomine læte flavo; caput ubique creberrime punctatum, in medio frontis sub-impressum dein vertice tenuiter canaliculatum, impressione frontali sparse albido pubescente; prothorax longitudine nonnihil latior, antice prope marginem manifeste contractus, ad medium laterum subrotundato ampliatus, crebre punctulatus maculis e pilis appressis albis sex formatis supra perspicue notatus, laterumque medio albido piloso; scutellum apice dense albo pilosum; elytra a basi postice gradatim attenuata, apice singulatim rotundata, ad humeros callosa supra subdeplanata, haud ostulata, creberrime punctata, maculis pilosis albis quinque prima supra humerali, secunda tertia quartaque prope suturam seriatis alteraque dorsali post medium sita extrorsum dueta, in singulo ornata; abdomen subsparse, pectus dense albo villosa; femora postica valde dilatata, macula albida extus notata; pedes nigri albido pubescentes unguibus flavo rufescentibus.

Long. 8 mm.; lat. $4\frac{1}{2}$ mm.

This species is easily recognised by its vestiture from along its South African congeners.

Hab. Cape Colony (Umtata). Rev. F. C. Kolbe.

PÆCILOMORPHA GRAVASTELLA, n. sp.

Nigra, omnino dense griseo villosa, prothorace rufo testaceo macula nigra quadrata media supra basim posita, elytris stramineis apice flavescente sutura margine postica lateralique anguste nigris; antennæ articulis basalibus tribus exceptis flavæ, his nigris; caput conferte punctulatum, in medio frontis impressum, pube appressa longa vertice rariore obtectum; prothorax longitudine tertio latior, lateribus regulariter rotundato ampliatus, basi coarctatus, supra convexus, punctis longe setiferis modice confertis obsitus; scutellum pilis albidioribus tectum; elytra antice prothoracis latitudine maxima, dein retrorsum oblique attenuata, apice basi fere dimidio angustiora, haud costulata, punctis setam longam erectam ferentibus

admodum induta; corpus subtus, pedes tarsique pube grisea appressa dense vestita, femoribus posticis modice ampliatis.

Long. 8 mm.; lat. 3 mm.

Hab. Southern Rhodesia (Bulawayo). Rev. F. C. Kolbe.

SUB-FAMILY CLYTHRINÆ.

GEN. LACHNÆA, Lacord.

LACHNÆA DAMARINA, n. sp.

Curtula, supra glabra, nigra, prothorace fascia antica strictura transversa terminata flavida notato; elytris rufo-flavidis fasciis duabus nigris latis, prima ante medium ad suturam interrupta, lateraliter humeros versus producta, altera pone medium sita, communi marginem lateralem attingente, vix sinuata, nigro-cæruleis ornatis; antennis nigris articulis basalibus tribus flavidis; caput latum, punctulatum, in fronte quadrifariam impressum; prothorax longitudine duplo latior, antice nonnihil lateraliter attenuatus, basi apice tertio latior, basi ipsa utrinque profunde sinuata, supra convexiusculus, parte antica a postica ante medium canale transverso profunde divisa, illa medio excepto vix punctulata, hac præsertim ad medium crebre profundeque irregulariter ad latera minus dense punctata; scutellum vix punctatum; elytra antice prothorace latiora dein retrorsum nonnihil gradatim attenuata, longe pone humeros sinuata, supra convexa, ab humeros fere ad quintam partem longitudinis lateraliter utrinque late depressa, in dorso haud postice autem utrinque manifeste quadrifariam costata sutura ubi elevata, apice ipso declivo haud punctato, superficie tota crebre profundeque punctata, punctis intervallo nonnihil angustiore divisis; corpore subtus pedibusque pube griseo sericea dense obtectis.

Long. $9\frac{1}{2}$ mm.; lat. $4\frac{1}{2}$ mm.

Hab. Northern Damaraland. W. A. Eriksson.

SUB-FAMILY HISPINÆ.

GEN. LEPTISPA, Bal

Key to the South African Species.

A². Elytra cyaneous or cyaneous-black.

B². Anterior angles of the prothorax rounded; frontal part of head grooved longitudinally.

C². Antennæ reaching the median part of the prothorax.

Prothorax very sparingly punctate, punctures shallow .. *natalensis*.

Antennæ not reaching the median part of the prothorax.

Prothorax closely punctate, the punctures especially rugose on the posterior part of the sides *sebaquena*.

A¹. Elytra black like the rest of the body.

B¹. Anterior angles of the prothorax not rounded, projecting, frontal part of head not grooved longitudinally.

C¹. Antennæ not reaching the median part of the prothorax body very linear.

Prothorax sinuate past the median lateral part, punctures deep, very closely set *gracilis*.

Prothorax not sinuate past the median lateral part, punctures both on the prothorax and on the elytra much finer *sobrina*.

LEPTISPA SOBRINA, n. sp.

Angustissima, tota nigra, modice nitida; antennæ breves, articulis ultimis tribus nonnihil pubescentibus; caput punctis profundis spatio angusto divisis crebre obtectum; prothorax antice perparum lateraliter attenuatus, at haud rotundatus lateribus rectis haud sinuatis, angulis anticis posticisque acuminatis, illis productis, in disco vix convexiusculus, ad latera utrinque modice deplanatus, punctis rotundatis profundis intervallo angusto separatis crebre obsitus; scutellum apice foveolatum; elytra elongata, prothorace basi leviter angustiora, quadruplo longiora, regulariter, modice profunde punctato striata, interstitiis angustis planis, levibus.

Long. $4\frac{3}{4}$ mm.; lat. 1 mm.

In general facies and slenderness this species resembles *L. gracilis*, Pér., but in the latter the prothorax is plainly sinuate laterally, and the punctures are very much deeper.

Hab. Cape Colony (Transkei, Kentani). Miss A. Peggler.

LEPTISPA SEBAQUENA, n. sp.

Præcedenti nonnihil latior verumtamen angusta; nigra, sub-nitida, elytris obscure cyaneo nigris; antennæ breves, articulis ultimis tribus brevissime pubescentibus; caput in medio frontis antice longitudinaliter canaliculatus, parte postica laxè punctulata; prothorax apice lateraliter rotundato attenuatus, angulis haud prominulis, pone medium laterum nonnihil sinuatus angulis posticis acuminatis, supra vix convexiusculus sed ad apicem utrinque

levissime deplanatus, punctis confertis ad latera, præcipue postice crassioribus rugulosisque obtectus; scutellum apice fovea insculptum; elytra prothorace levissime at distincte latiora, quadruplo longiora, callo humerali leve, punctis rotundatis regulariter striatis insculpta, interstitiis angustis, levibus, planis.

Long. $4\frac{1}{2}$ – $5\frac{1}{4}$ mm.; lat. 1 mm.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

GEN. CALLISPA, Bal.

Key to the South African Species of the Genus CALLISPA.

A². Prothorax red or yellowish red; elytra black or blue.

Head completely red; prothorax with only a few round punctures between the median part of the disk and the outer margin . . . *errans*.

Conical part of head only, reddish; prothorax covered all over with round punctures *sebakwe*.

A¹. Whole body black.

B². Supra-lateral part of prothorax not impressed longitudinally.

Prothorax almost evenly punctate all over, supra-lateral smooth longitudinal space very indistinct. *australis*.

Median part of prothorax sparingly punctate; supra-lateral smooth longitudinal space very plain. *untalina*.

B¹. Supra-lateral part of prothorax deeply impressed longitudinally.

Median part of prothorax smooth but with a few seriate punctures on each side of the median line, supra-lateral impressions and sides very deeply punctate *gestroi*.

CALLISPA ERRANS, n. sp.

Nigra, nitida, capite prothoraceque omnino nigris, elytrorum basi nonnunquam breviter rufescente; antennæ prothoracis basim vix excedentes, articulis coarctatis, 3–10 æqualibus, ultimo acuminato; caput impunctatum; prothorax longitudine media tertio latior, lateribus antice magis postice minus leviter arcuatis, basi ipsa apice evidenter latiore, sub-deplanatus, in medio nonnihil convexiusculus, utroque longe a marginibus lateralibus longitudinaliter impressus, lateribus fere deplanatis punctis nonnullis irregularibus profundis, remotis in impressiones atque in medium disci evidenti-
oribus sparsis; scutellum impunctatum; elytra fere parallelia, pone humeros nonnihil sinuata, convexiuscula, profunde punctato striata, stria juxta suturali, basi excepta haud punctata.

Long. 5-5½ mm. ; lat. 2½-3 mm.

Hab. Cape Colony (Port St. John), G. Shortridge. Natal (Malvern), C. N. Barker.

CALLISPA SEBAKUE, n. sp.

Rufa, capite nigro, elytris cæruleis ; caput utroque punctulatum, apice rufescens ; antennæ absunt ; prothorax apice rotundatus, nonnihil attenuatus, deinde ad basim sub-oblique ampliatus, in hoc loco apice fere tertio lator, vix convexiusculus, depressionibus discoidalibus nullis, supra scutellum in medio baseos impressum, punctis fere sub-foveolatis confertim obsitis, parte media disci anguste impunctata ; scutellum subrufescens, postice impressum ; elytra fere parallelia prothorace quarto longiora, profunde punctato striata ; corpus subtus modice punctatum ; pedes rufi genubus sub-infuscatis.

Long. 6 mm. ; lat. 2½ mm.

This species differs from the preceding one by the red underside, legs, and prothorax, the more closely and also more deeply and more numerous punctate prothorax, and the blue colour of the elytra, which are also slightly more deeply punctate.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

CALLISPA UMTALINA, n. sp.

Tota nigra, nitida ; caput crebre aciculatum ; antennæ ut in speciebus præcedentibus, at nonnihil longioræ, quia humeros attingentes ; prothorax basi apice nonnihil lator, lateribus leviter arcuatis, in medio vix convexiusculus, sed ad latera magis deplanatus, in hoc loco punctis foveolatis fere cohærentibus obsitus, disco ad medium baseos impresso, punctisque minoribus utrinque adperso ; scutellum impunctatum ; elytra elongata, fere parallelia, prothorace quarto longiora, vix striata, punctis sub-foveolatis seriatis obsita ; corpus subtus modice punctulatum.

Long. 6 mm. ; lat. 2¼ mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

CALLISPA GESTROI, n. sp.

Tota nigra, nitida ; caput confertim aciculatum ; antennæ crassiusculæ, thoracis basim attingentes ; prothorax antice utrinque rotundatim attenuatus, deinde rectus, utrinque ad medium disci profunde lateque longitudinaliter impressus, parte media disci lateribus nonnihil elevatiore, ad basim profunde impressa, punctis nonnullis bifariam seriatis utrinque notata, impressionibus longitudinalibus lateribusque

rude, subconfertim profunde punctatis; scutellum impunctatum; elytra prothorace quarto longiora, parte juxta suturali excepta haud striata, in dorso punctis profundis ad latera fossulatis serobiculatisque seriatis obsita; sternum profunde abdomen vix punctulatum.

Long. 5 mm.; lat. $2\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Umtali). A. Bodong.

GEN. DISTOLACA, Bal.

DISTOLACA AMOENA, n. sp.

Tota cyanea, nitida, glabra, antennis pedibusque obscurioribus; caput vix punctulatum; prothorax fere parallelus, basi autem apice nonnihil latior, latitudine duplo longior, supra deplanatus, rude serobiculato punctatus, ruga longitudinali media levi conspicua alteraque breviori, minus distincta utrinque sita in medium disci præditus; scutellum latum, impunctatum; elytra prothorace nonnihil latiora, quadruplice longiora, humeris callosis, late profundeque alveolatis, alveolis rotundatis, catenatis, in seriebus quatuor dispositis, costulis dorsalibus duabus antice sinuatis, postice magis distinctis, tertiaque laterali acuta divisis, alveolis dorsalibus marginalibus latioribus, sutura anguste elevata; abdomen leve; sternum sparse punctatum; pedes profunde punctati.

Long. 5-6 mm.; lat. $1\frac{1}{5}$ - $1\frac{1}{2}$ mm.

Hab. Natal (Malvern), C. N. Barker. Southern Rhodesia (Zambesi Falls), T. Ayres.

There is a slight difference in the shape of the smooth raised parts of the median part of the disk of the prothorax between Natal examples and those from the banks of the Zambesi, but not enough to separate the two.

GEN. DACTYLISPA, Weis.

DACTYLISPA VERECUNDA, n. sp.

Pallide flava, glabra, nitida; prothorace elytrisque nigro maculatis; antennæ nigræ articulis apicalibus duobus flavescensculæ, articulis a secundo gradatim incrassatis, modice coarctatis, 7° latitudine vix longiore, 8-10 latitudine longitudine æquantibus, ultimo præcedenti longiore apice acute acuminato; caput aciculatum; prothorax transversus, deplanatus profunde rugosus fere subserobiculatus, antice utrinque spinis duabus divaricatis stipite communi, singula denticulo brevi laterali antrorsum retrorsumque munita, armatus, ad latera lobatus, lobo 3-spinoso, spinis divaricatis, prima simplice, secunda ad medium retrorsum denticulata, tertia

antrorsum uni-, retrorsum quadri denticulata, denticulisque binis fere medianis, cæteris approximatis, basalibus magis conspicuis; scutellum aciculatum; elytra latiuscula latitudine duplo longiora profunde fossulato striata, spinis dorsalibus validis, modice elongatis, nigro fuscis, duobus seriei primæ geminatis late pedunculatis, basi haud separatis, spinis marginalibus longioribus atque nonnihil dilutioribus.

Long. $3\frac{1}{2}$ mm. ; lat. 2 mm.

This species is distinguished from the other South African kinds except *D. litigiosa*, Péring., by the spines of the prothorax, which bear one or more small, sharp, rami-like spines on the sides; in the dorsal part of the elytra the first row consists of two sets each of two vertical spines supported by a conspicuous laminate peduncle; the disposition of the spines of the prothorax approximates that of *D. incredula*, Gestr., from St. Thome on the West Coast of Africa.

Hab. Natal (Malvern). C. N. Barker.

DACTYLISPA PRETIOSULA, n. sp.

Pallide straminea, nitida, fere glabra, prothoracis medio areolis duabus exceptis nigro; elytra nigro variegata; spinis prothoracis pallidis, elytrorum dorsalibus nigris, marginorum pallidis; antennæ graciles, longissimæ, articulis gradatim modice incrassatis, 7-11 reliquis vix crassioribus, pallide refescentibus articulis basalibus binis infuscatis; caput punctulatum; prothorax transversus, antice attenuatus, deplanatus, rugose punctatus, at utrinque area ovali impunctata, medioque striga minuta notatus, antice utrinque spinis duabus basi connexis munitus, lateraliter trispinosus, spinis duabus anticis e pedunculo distincto communi productis, tertia libera præcedentibus haud multo breviora; scutellum impunctatum; elytra fere parallelia, latiuscula, profunde foveolato seriata, interstitiis vix distincte albido setulosis, spinis in dorso marginalibus vix brevioribus, nonnihil retrorsum apice flexis.

Long. $3\frac{1}{2}$ - $3\frac{3}{4}$ mm. ; lat. 2 mm.

Slightly broader than *D. tenuicornis*, Chap., and coloured differently. The antennæ are longer and slightly more slender than in the last-named species.

Hab. Natal (Malvern). C. N. Barker.

GEN. DICLADISPA, Gestr.

DICLADISPA FRATERNA, n. sp.

Rufo carneolo, subnitida; antennæ modice elongatæ, rufescentes, articulis basilibus 1-6 magis, 7-11 minus albo sericeis, his ampliatis,

septimo præcedentibus latiore, latitudine perparum longiore, 8–10 latitudine fere æqualibus, at articulo ultimo 10° haud angustiore sed apice acuminato; caput inter oculos longitudinaliter sulcatum; prothorax transversus, apice modice angustatus, supra deplanatus, in medio profunde canaliculatus, pube sericea flavescente dense indutus, lateribus sex spinosis, spinis in circulum dispositis, pedunculo fere lato communi orientibus, longis, at sexta antrorsum posita reliquis brevior profunde bifida omnibus a medio apice nigris; elytra fere parallelia, seriato punctata, punctis latis profundisque, pilis flavescente sericeis erectis, seriatis haud dense vestita, spinis fere æqualibus longis, a basi nigrescentibus, spinis apicalibus reliquis vix minoribus.

Long. $3\frac{1}{2}$ mm.; lat. 2 mm.

This species is closely allied to *D. vicinalis*, Pér., but it is slightly smaller, the spines are longer, and all the antennal joints are concolorous, whereas in *D. vicinalis* the four basal joints are deeply infuscate or black.

Hab. Natal (Malvern). C. N. Barke.

DICLADISPA EXASPERANS, n. sp.

Flavo-testacea, nitida, prothoracis medio, nigro bivittato; elytris obscurioribus, lateraliter subinfuscatis; corpore subtus cum pedibus pallidis; antennæ breviusculæ rufo testaceæ, articulis basalibus duobus vel tribus nigris, vix sericeo pubescentes, articulis 7–10° incrassatus 7° latitudine dimidio longiore, 8–10 latitudine latitudine fere æqualibus, ultimo præcedenti nonnihil brevior, apice acuminato; caput in medio vix punctatum; prothorax antice nonnihil attenuatus, supra depressus, profunde punctatus punctis fere confluentibus, in medio anguste levigatus, pube sericea haud densa sparsim indutus, lateribus quinque spinosis, spinis, e pedunculo communi orientibus, flavis, spina posticali breve, profunde bifida, reliquis longis; elytra seriatim foveato punctata, subdeplanata, setis erectis pallide flavis seriatis subsparsim obsita, spinis dorsalibus modice elongatis, obscure testaceis, marginalibus dorsalibus longioribus, pallide flavis.

Long. $3\frac{1}{4}$ mm.; lat. 2 mm.

Resembles both *D. malverna* and *D. vicinalis*, but is at once distinguished by having 5 spines only, instead of 6, on the sides of the prothorax.

Hab. Natal (Malvern). C. N. Barker.

DICLADISPA MALVERNIA, n. sp.

Flavido testacea, nitida, pedibus dilutioribus; antennæ rufo-testaceæ, elongatæ, crassiusculæ, sericeo pubescentes, articulis ultimis quinque reliquis leviter crassioribus, 7° latitudine duplo longiore; 8–10 latitudine nonnihil longioribus; caput dense sericeum; prothorax antice attenuatus, pube sericea flavescente dense obtectus, utrinque sex spinosus, spinis in circulum dispositis e pedunculo sat lato communi orientibus, longis at spina postica breve profundeque bifida, pallide testaceis apice nigrescentibus; scutellum impunctatum; elytra livido testacea, foveato striata, fovearum interstitiis angustis setam longam albidam sericeam emittentibus, spinis discoidalibus longis, obscurioribus, marginalibus discoidalibus longioribus pallidioribusque.

Long. 4–4½ mm.; lat. 2¼–2½ mm.

A near ally of *D. fraterna*; is distinguished especially by the shape of the antennæ, the six basal joints of which are less slender, and the fine apical ones are not thickening in the same proportion as in *D. fraterna*.

Hab. Natal (Malvern). C. N. Barker.

DICLADISPA SEBAKUENA, n. sp.

Rufa, modice nitida, spinis totis a medio apice nigrescentibus; antennæ breviusculæ, articulis coarctatis, gradatim incrassatis, basalibus sex breviter setulosis, reliquis brevissime sericeo pubescentibus; caput dense albidum pubescens; prothorax antice evidenter attenuatus, disco plano, postice præsertim ad latera punctatus, utrinque sex spinosus, spinis in circulum haud regulariter dispositis, e pedunculo crassiusculo communi orientibus, longis, spina posticali autem breve profundeque bifida, superficie tota pilis longis albidis flavescentibus dense obtecta; scutellum dense villosum; elytra fere parallelia, profunde foveato seriata, interstitiis fovearum pilum longum albidum gerentibus, spinis dorsalibus validis fere a basi apice nigris, marginalibus longis, a medium tantummodo nigrescentibus.

Long. 5 mm.; lat. 3 mm.

This species is easily recognised owing to thick antennæ, the joints of which are set close to each other, and gradually increase in width.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

DICLADISPA DORSALIS, n. sp.

Flava, modice nitida; antennæ haud sensim pubescentes, elongatæ, subcrassiusculæ, gradatim incrassatæ, articulo septimo octo fere

duplo longiore, rufo testaceæ articulis quatuor basalibus nigris; caput aciculatum; prothorax antice modice attenuatus, supra deplanatus, breviter pubescens, in medio vix ad latera profundius punctatus, vitta laterali infuscata utrinque ornatus, lateraliter quinque spinosus, spinis pallide flavis, longis, acutis, quinta autem reliquis brevior profundeque bifida, spinis totis e pedunculo lato communi productis, extrorsum orientibus; elytra parallela, pallide flava, vitta supra marginali rufo nigrescente ad partem posticam late extensa ornata, foveolato striata, pilis nonnullis albidis remotis oblecta, spinis dorsalibus brevibus basi rufescentibus, ad apicem nigrescentibus, spinis duabus anticis juxta suturalibus, reliquis multo brevioribus, forsan mutillatis, marginalibus longis, flavidis.

Long. $3\frac{1}{2}$ mm.; lat. 2 mm.

This species differs from the other South African species of the genus by the disposition of the five spines of the sides of the prothorax which are disposed, fan-shape, outwardly; the hinder spine is very deeply bifid, the upper branch being nearly as long as the one preceding it.

Hab. Southern Rhodesia (Sebakwe). Delancey Dods.

DICLADISPA APPROXIMANS, n. sp.

Rufo testacea conspicue albido pilosa, pilis haud appressis, pedibus, prothoracis spinis lateralibus elytrorumque marginalibus pallidis; antennæ sub-breves, crassiusculæ, articulis gradatim incrassatis, breviter pubescentibus; caput vix punctatum; prothorax antice attenuatus, deinde transversus, supra profunde punctatus areis levibus nullis, in medio sat distincte canaliculatus, lateraliter haud longe quinque spinosus, spinis anticis quatuor e pedunculo conspicuo communi productis, quinta libera, posticali, reliquis multo minore, breviter bifida, autem nonnunquam simplice; scutellum latum, impunctatum; elytra prothorace quadruplicè longiora, sub-parallela, pone humeros autem nonnihil sinuata, modice convexiuscula, late profundeque foveato seriata, interstitiis pilis albidis seriatis, spinis dorsalibus brevibus apice fuscis, marginalibus longiusculis.

Long. 5-6 mm.; lat. $3-3\frac{1}{4}$ mm.

Hab. ? Southern Rhodesia. G. A. K. Marshall.

A distinct species which I cannot compare to any other S. African one.

DICLADISPA INDUBIA, n. sp.

Nigra, nitida, supra obscure æneo micans, glabra; elongata, subangusta; antennæ crassiusculæ, modice elongatæ articulis gradatim

incrassatis at apicalibus quatuor autem reliquis crassioribus, nigrae at articulis quinque ultimis fulvescentibus; caput punctatum pilis nonnullis brevibus albis; prothorax antice attenuatus, deinde transversus, deplanatus, in medio late, utrinque minus perspicue longitudinaliter impressus, rude punctatus pube grisea sparse indutus, ad latera longe quinque spinosus, spinis quatuor anticis e pedunculo manifesto communi productis, longitudine fere æqualibus, spina posticali quinta libera, anterioribus graciliore brevioraque, extrorsum porrecta; scutellum vix perspicuum, basi punctulatum; elytra elongata, angustiuacula, prothorace nitidiora, profunde lateque seriato punctata, glabra, spinis nigro æneis, longis, marginalibus vix brevioribus.

Long. $5\frac{1}{2}$ mm.; lat. $1\frac{1}{5}$ mm.

Will be easily recognised from among its South African congeners by the metallic sheen of the elytra.

Hab. Transvaal (Potchefstroom).

GEN. DORCATISPA Weise.

DORCATISPA EXTREMA, Pér.,

Ann. S. Afric. Mus. i., 1898, p. 117.

Gestro (Ann. Mus. Civic. Hist. Nat. Genov. vol. xlii., 1906) places *Doscatispa* (*Hispella*) *extrema*, Péring., in synonymy with *D. bellicosa*, Guér.; and attributes to this species an almost entire African range. Gestro is, however, mistaken on that point. The typical *D. bellicosa*, a duly identified specimen of which he very kindly sent me, differs from *D. extrema* in the more shiny surface and the total absence on the discoidal part of the prothorax of the two ovate rounded, smooth, raised areas, which are so conspicuous a feature of *D. bellicosa*. *D. extrema* must on these accounts be considered a valid species.

GEN. PSEUDISPELLA, Kraatz.

PSEUDISPELLA CONSOBRINA, n. sp.

Nigra, elytris cyaneis, nitidis; capitis apice rugose punctato; antennæ elytrorum humeros attingentes, crassæ, articulis 2-6 utrinque angulatis, reliquiis coartatis, 7^o latitudine nonnihil longiore, 8-10 fere transversis, ultimo acuminato, spina basali articuli primi longa; prothorax antice nonnihil attenuatus, dein transversus, deplanatus, in medio haud canaliculatus, in disco utrinque nonnihil elevatus autem haud areolatus, conferte rugoseque punctatus, pube

brevi albido sericea densiuscula obtectus, antice utrinque spinis validis duabus basi connexis munitus, lateribus tri-spinosis, spinis anterioribus duabus ut in parte antica divaricatis basi que fere pedunculatis, altera libera extrorsum porrecta; scutellum haud impressum; elytra ante medium lateraliter distincte sinuata, profunde seriato foveolata punctata, spinis mediocribus, dorsalibus marginalibus haud longioribus, interstitiis breviter albido setulosis.

Long. 3 mm.; lat. 1 mm.

Very closely allied to *P. promontorii*, Péring.; differs by the cyaneous colour of the elytra which are also much more sinuate laterally, and especially by the much thicker antennæ.

Hab. Transvaal (Shilouvane), Rev. H. Junod; Southern Rhodesia (Sebawe), Delancey Dods.

INDEX.

A	PAGE	PAGE	PAGE
Acupalpus	283	Demostis	344
Agrilus	311	Dicladisa	337
alacer (Acupalpus)	283	Dioryche	282
alienus (Acupalpus)	283	discrepans (Systolocranius)	288
Amorphosoma	302	dissidens (Bascanus)	290
amatongas (Brachycerus)	316	Distolaca	336
amoena (Distolaca)	336	ditissima (Phlocteis)	306
Anadora	308	dives (Phlocteis)	308
Anaulax	289	dodsi (Clytanthus)	329
angusticollis (Acupalpus)	284	Dorcatispa	341
Anisodactylus	277	dorsalis (Dicladisa)	339
Antliarrhinus	325	Dromica	271
Aphanisticus	314		
approximans (Dicladisa)	340	E	
arrogans (Tachys)	292	effugiens (Chlænienus)	286
		egenus (Omostropus)	281
B		elegans (Phlocteis)	306
Bascanus	290	errans (Callispa)	334
bicolor (Blepisanis)	320	exasperans (Dicladisa)	338
Blepisanis	330	extrema (Dorcatispa)	341
Brachycerus	315		
		F	
C		fauveli (Staphylinus)	296
Callispa	334	finitimus (Chlænienus)	287
Caloecus	320	fraterna (Dicladisa)	337
capense (Pentarthrum)	327	fraudulentus (Agrilus)	313
capensis (Cotasteridus)	324	funestus (Strophosomus)	318
capicola (Coscinia)	276		
capicola (Cotasterophasis)	323	G	
capicola (Nesiotes)	322	gentilis (Pœcilomorpha)	331
carinatipennis (Anaulacus)	289	gestroi (Callispa)	334
carinatipennis (Caloecus)	320	gloriosulus (Agrilus)	311
Casonia	273	gratus (Cimbus)	319
Chlænienus	285	gravastella (Pœcilomorpha)	331
Cimbus	319		
Clytanthus	329	H	
consobrina (Pseudispella)	341	Hypolithus	297
convexicollis (Dromica)	271	hamaticollis (Strophosomus)	318
Coræbus	301		
Coscinia	276	I	
Cotasteridus	324	Ichthyurus	314
Cotasterophasis	323	imitativus (Hypolithus)	278
Cratognathus	280	incertus (Melanodes)	289
cruentulus (Hypolithus)	277	inchoatus (Anisodactylus)	277
curtula (Dyoriche)	282	indicator (Pentarthrum)	327
		indubia (Dicladisa)	340
D		involutus (Stenolophus)	282
Dactylispa	336		
damarina (Lachnæa)	322	J	
debilis (Tachys)	295	jactuosula (Demostis)	305
deceptor (Oodes)	287	jucundulus (Tachys)	294
decoratus (Agrilus)	312		

K	PAGE
kafuena (Polyhirma)	276
kafuenus (Tefflus).....	284
Kamosia	313
Kerremansia	309
khoikhoianus (Brachycerus)	315

L	PAGE
Lachnæa	331
læta (Casnonia)	273
Lebia	273
Leptispa	332
levicollis (Aphanisticus).....	314

M	PAGE
majusculus (Thorictus)	300
malvernia (Dycladispa)	339
mashunus (Agrilus).....	311
mashunus (Ichthyurus)	314
Mastigus	299
Melanodes	289
Melibæus	302
Mesitomorpus	328
Metaxys	290
minutissimus (Tachys)	295
mouffleti (Brachycerus)	317

N	PAGE
natalensis (Cratognathus)	280
natalensis (Mastigus)	299
namanus (Brachycerus)	316
namaqua (Tlepomus)	329
natalica (Anadora)	308
Nesiotes	321
nigrolimbatus (Tachys)	293
nuncius (Chlænienus)	285

O	PAGE
Œdichirius	297
Omotropus	281
oneili (Œdichirius)	297
Oodes	287
optivus (Hypolithus)	278
originarium (Amorphosoma)	302
orphanus (Chlænienus)	286

P	PAGE
pallidus (Polyaulacus).....	275
Paradora	304
parilis (Trechus)	291
pegleræ (Antliarrhinus)	325
Pentarthrophasis	326
Pentarthrum	327
Phlocteis	306
plicipennis (Demostis).....	305
Pœcilomorpha	331
Polyaulacus	275
Polyhirma	275
pretiosula (Dactylispa)	337

PAGE	PAGE
procerus (Mastigus).....	299
promontorii (Lebia).....	273
promontorii (Mastigus)	298
promontorii (Nesiotes)	322
Pseudispella	341
punctatus (Melibæus)	302

R	PAGE
raffrayi (Cotasterophasis)	324
raffrayi (Pentarthrophasis)	326
rhodesiana (Trichisia).....	285
rhodesianus (Metaxys)	290
rivalis (Hypolithus).....	279

S	PAGE
sambesina (Polyhirma)	275
scintillans (Coræbus)	301
sebakua (Lebia)	273
sebakue (Callispa)	335
sebakua (Dycladispa)	339
sebakua (Leptispa)	322
secutorius (Tachys)	292
semotum (Amorphosoma)	303
simplex (Omotropus)	281
sobrina (Leptispa)	333
solutilis (Trechus)	291
Somatodes	321
Staphylinus	296
Stenolophus	282
Strophosomus	318
Systolocranium	288

T	PAGE
tabulæ (Mastigus).....	297
Tachys	292
Tefflus	284
tenebricosum (Amorphosoma)	302
tenella (Lebia)	274
tetricus (Hypolithus)	280
Thorictus	300
Tlepomenus	329
transvaalensis (Somatodes).....	321
Trechus	291
Trichisia	285
tuberculifrons (Kamsia)	313
turbatus (Hypolithus)	279

U	PAGE
umtalina (Paradora)	304
umtalina (Callispa)	335

V	PAGE
verecunda (Dactylispa)	336
vescus (Tachys)	294
vestitus (Mesitomorpus)	328
vicarius (Tachys)	293

Z	PAGE
zuluana (Dromica)	271

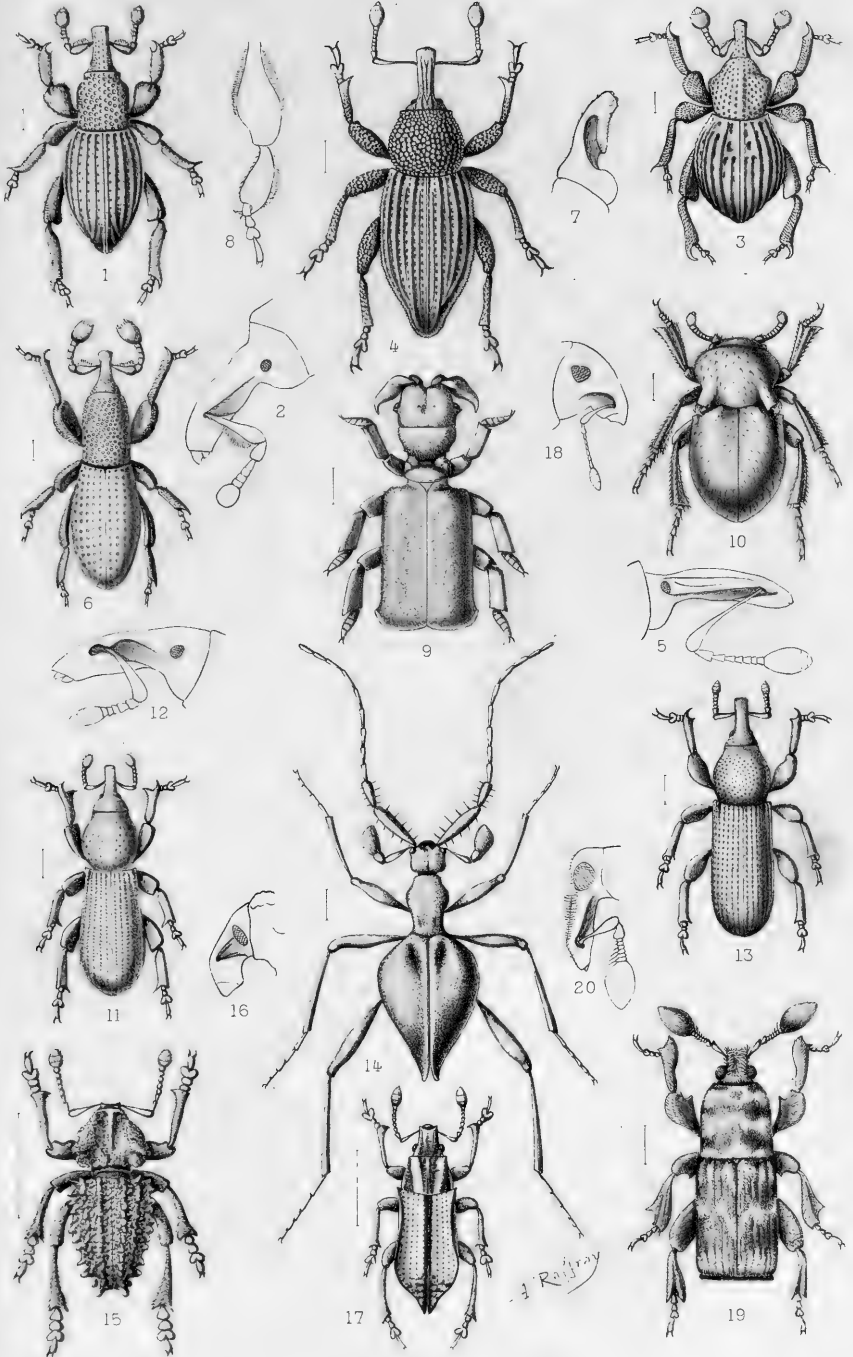
EXPLANATION OF PLATES.

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PLATE V.

FIGS.

- 1, 2. *Nesiotes promontorii*.
3. *Nesiotes capicola*.
- 4, 5. *Costaterophasis capicola*.
- 6, 7, 8. *Pentarthrophasis raffrayi*.
9. *Hylоторus seabakuanus*.
10. *Thorictus majusculus*.
- 11, 12. *Pentarthrum capense*.
13. *Pentarthrum indicator*.
14. *Mastigus natalensis*.
- 15, 16. *Somatodes transvaalensis*.
- 17, 18. *Caloecus carinatipennis*.
- 19, 20. *Mesitomorphus vestitus*.



A. Raffray, del.

Hérog, Dujardin, Paris

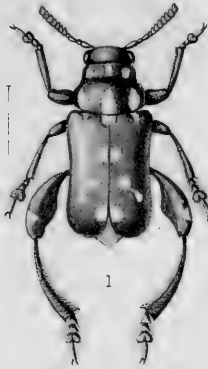
PLATE VI.

FIGS.

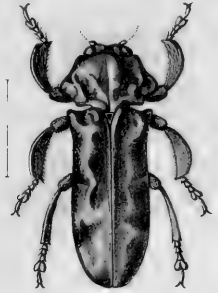
1. *Pœcilomorpha gentilis*.
2. *Phlocteis dives*.
3. *Kerremansia paradoxa*.
4. *Paradora umtalina*.
5. *Anadora natalica*.
6. *Phlocteis ditissima*.
7. *Melibœus oculatus*.
8. *Phlocteis elegans*.
9. *Demostis plicipennis*.
10. *Demostis jactuosula*.
11. *Cimbus gratus*.
12. *Staphylinus fauveli*.



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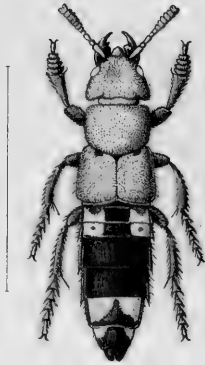
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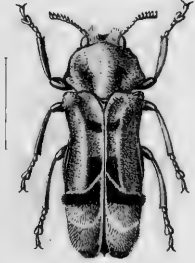
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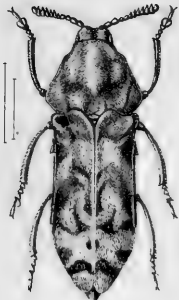


9

A. Raffray del.



11



10

8.—*New South African Micro-Lepidoptera*.—By E. MEYRICK,
B.A., F.R.S.

THE specimens which form the subject of the following notes were entrusted to me through the courtesy of Dr. L. Péringuey, and the types are in the collection of the South African Museum.

PTEROPHORIDÆ.

AGDISTIS CRIOCEPHALA, n. sp.

♂ ♀. 19–20 mm. Head dark grey irrorated with white, frontal prominence moderate, rounded. Palpi moderate, dark fuscous sprinkled with white, apex of second and terminal joints white. Antennæ over $\frac{1}{2}$, fuscous. Thorax and abdomen fuscous. Forewings very narrow at base, moderately dilated posteriorly, apex obtuse, termen slightly rounded, rather strongly oblique; rather dark fuscous irregularly and suffusedly irrorated with whitish, the triangular space rather lighter fuscous and not irrorated; three small round suffused dark fuscous spots at inverted apex of this space and on its lower margin at $\frac{1}{2}$ and $\frac{3}{4}$ of wing, and a fourth on its upper margin beyond third: cilia fuscous sprinkled with whitish. Hindwings fuscous, towards tornus and on termen with some dark fuscous scales; cilia fuscous, tips whitish.

CAPE COLONY, Troe Troe, in October; three specimens. Very similar to *adactyla* and *satanas*, from both of which it may be separated by the rounded frontal prominence (in them acute).

TORTRICIDÆ.

CACOEZIA HELIASPIS, n. sp.

♀. 27–31 mm. Head and thorax dark reddish-brown, thorax lighter posteriorly. Palpi short, ascending, reddish-ochreous-brown. Abdomen orange. Forewings oblong, costa very strongly arched towards base, concave posteriorly, apex prominent, round-pointed,

termen vertical, concave below apex, rounded-prominent beneath; ochreous-brown, marbled throughout with a pale ashy-purplish gloss; some very fine irregular dark fuscous striæ more or less indicated; basal patch outlined by a similar stria, obtusely angulated in middle, preceded on dorsum by a spot of dark reddish-fuscous suffusion, base of costa suffused with dark reddish-fuscous; central fascia outlined by two similar striæ, gradually dilated downwards, rather narrow on costa, moderately broad on dorsum, suffused with rather dark reddish-fuscous towards both extremities; costal patch semi-oval, dark reddish-fuscous, anteriorly edged by a similar stria running to termen above tornus: cilia ochreous-brown, suffused with reddish-fuscous on upper part of termen and dark fuscous at apex. Hindwings bright deep orange, at apex with one or two reddish-fuscous strigulæ; cilia yellowish, with reddish-fuscous basal line.

NATAL, Durban (Leigh); two specimens.

TORTRIX CAPENSANA Walk.

CAPE COLONY, King William's Town.

PROSELENA IONEPHELA, n. sp.

♂. 16-17 mm. Head and thorax whitish-ochreous, more or less tinged with brownish. Palpi whitish-ochreous, second joint externally suffused with fuscous. Antennæ grey. Abdomen pale whitish-ochreous. Forewings elongate-oblong, costa gently arched, apex obtuse, termen nearly straight, oblique; whitish-ochreous; costa suffused with yellow-brownish towards base; a streak of ferruginous suffusion along dorsum from near base to tornus, expanding into a moderately large suffused prætornal blotch: cilia whitish-ochreous. Hindwings and cilia ochreous-whitish.

CAPE COLONY, Capetown and Clanwilliam, in January (Lightfoot); three specimens. This is a very interesting occurrence, the genus *Proselena* being hitherto known only from Australia and New Zealand, especially the latter; to some of the New Zealand species the present one is very similar.

GELECHIADÆ.

SITOTROGA CEREALELLA Ol.

CAPE COLONY, Capetown (Lightfoot); nine specimens. An importation, not previously recorded but doubtless common in granaries; the larva feeds on stored grain, and is a destructive pest.

ANACAMPSIS OXYSPILA, n. sp.

♂. 9–10 mm. Head and thorax bronzy-fuscous, face whitish. Palpi white, terminal joint lined with black. Antennæ fuscous. Abdomen bronzy-grey. Forewings broad-lanceolate, apex somewhat produced, acute; 6 and 7 out of 8; dark fuscous, with a faint purplish tinge; opposite triangular whitish costal and dorsal spots at $\frac{2}{3}$, almost meeting; cilia fuscous (imperfect). Hindwings rather dark grey; cilia grey.

CAPE COLONY, Capetown (Lightfoot), one specimen; and I possess one from TRANSVAAL, Pretoria, taken in February (Janse).

GELECHIA CHERSOPHILA, n. sp.

♂ ♀. 12–13 mm. Head and thorax greyish-ochreous mixed with grey, face ochreous-grey-whitish. Palpi brownish sprinkled with whitish and black, terminal joint almost as long as second, with indistinct whitish band below middle. Antennæ whitish-grey ringed with blackish. Abdomen light bronzy-grey, segmental margins whitish. Forewings elongate-lanceolate; light greyish-ochreous or brownish-ochreous, finely irrorated with ferruginous, with scattered black scales; a blackish dot in middle of base, and one on costa near base; a small black spot on costa at $\frac{1}{5}$, tending to connect with a patch of black irroration in disc obliquely beyond it, terminated beneath by small blackish plical stigma; discal stigmata blackish, first small, obliquely beyond plical, second larger, elongate, its posterior extremity bent downwards; a small group of dark fuscous scales on costa at $\frac{2}{3}$; similar groups at tornus and apex, and a larger spot of dark fuscous suffusion near before apex; sometimes one or two dark fuscous costal dots towards apex: cilia pale brownish-ochreous, basal half sprinkled with dark fuscous. Hindwings pale grey; cilia pale ochreous.

CAPE COLONY, Kalk Bay, in January (Lightfoot); four specimens. Belongs to the group of *obsoletella* and *instabilella*.

GELECHIA TRISIGNIS Meyr.

♂ ♀. 16–17 mm. Seven specimens, all differing from the described type-example in possessing more or less dark fuscous suffusion along costal edge of forewings, variable in amount, in the darkest specimen forming a well-marked streak from near base to near apex, and also some dark fuscous scales on tornal edge and in cilia; they seem however to belong certainly to the same species.

CAPE COLONY, Capetown and Kalk Bay, in March (Lightfoot). Described from Transvaal.

PHTHORIMÆA OPERCULELLA Z.

CAPE COLONY, Kalk Bay and King William's Town. An imported pest, very destructive to the potato.

ENCOLPOTIS, n. g.

Head with appressed scales; ocelli present; tongue developed. Antennæ $\frac{3}{4}$, in ♂ simple, basal joint moderately elongate, without pecten. Labial palpi long, recurved, thickened with appressed scales, terminal joint as long as second, acute. Maxillary palpi very short, drooping, filiform. Posterior tibiæ clothed with long hairs above. Forewings with vein 1*b* furcate, 2 from towards angle, 7 to termen, 8 and 9 out of 7, 11 from middle. Hindwings 1, trapezoidal, apex produced, termen sinuate, cilia 1; 3 and 4 connate or short-stalked, 5 rather approximated, 6 and 7 stalked.

Allied to *Brachmia*, but differing in the neuration of forewings.

ENCOLPOTIS XANTHORIA, n. sp.

♂ ♀. 15–18 mm. Head and thorax light brownish, face suffused with white. Palpi brown, second joint suffused with white above and internally. Antennæ fuscous. Abdomen pale whitish-ochreous. Forewings elongate, rather narrow, costa moderately arched, apex pointed, termen sinuate-concave, rather strongly oblique; ferruginous-brown, with a prismatic-bluish gloss, darkest towards costa; stigmata represented by spots of dark fuscous suffusion, discal rather approximated, plical before first discal; a streak of dark fuscous suffusion along termen: cilia orange-yellow, beneath tornus light brownish. Hindwings and cilia pale whitish-ochreous.

CAPE COLONY, Capetown, in August; five specimens bred from larvæ feeding on *Icerya*, a genus of *Coccidæ* (scale-insects). Further particulars of this interesting habit should be obtained.

DIOCOSMA, n. g.

Head smooth; ocelli present; tongue developed. Antennæ $\frac{3}{4}$, in ♂ simple, basal joint very elongate, rather swollen, with a small basal hair-pencil beneath. Labial palpi long, recurved, second joint with rough projecting scales towards apex above, terminal joint as long as second, slender, acute. Maxillary palpi very short, filiform, appressed. Posterior tibiæ clothed with long hairs above. Forewings with vein 1*b* very long-furcate (for more than half its length), 2 from $\frac{5}{6}$, 7 and 8 stalked, 7 to costa, 11 from before middle, secondary

cell defined. Hindwings $\frac{4}{5}$, elongate-ovate, apex round-pointed, termen rounded, cilia 1; 3 and 4 connate, 5 slightly approximated, 6 and 7 rather nearly approximated, diverging towards apex; in ♂ with costal hairpencil from base.

Type *D. callichroa*. Of somewhat doubtful affinity, but probably an early form of the family, perhaps allied to *Symmoca*.

DIICOSMA CALLICHROA, n. sp.

♂ ♀. 16–19 mm. Head ochreous-whitish. Palpi ochreous-whitish, tinged with crimson (damaged). Antennæ ochreous-whitish, basal joint crimson above. Thorax ochreous-whitish, patagia and posterior margin deep yellow more or less suffused with crimson. Abdomen ochreous-whitish, with a rather dark fuscous spot on each side before apex. Forewings elongate, in ♂ rather narrow, in ♀ broader, costa moderately arched, apex round-pointed, more pointed in ♂, termen very obliquely rounded; ochreous-whitish; a crimson spot along basal third of dorsum, becoming purplish posteriorly; an oblique trapezoidal deep yellow patch resting on basal fourth of costa and extending to beyond fold, terminated by a crimson dot representing plical stigma; immediately beyond this a broad crimson streak from costa to middle of disc, thence curved up again to costa beyond $\frac{3}{5}$, where it is broadest, and continued along costa to apex, suffused with dark fuscous-purplish before and beyond middle; costal space enclosed by this streak deep yellow except along lower edge; a dark fuscous-purplish streak along termen: cilia ochreous-whitish, suffused with light crimson except towards tornus. Hindwings and cilia ochreous-whitish; in ♂ with whitish-yellowish hairpencil lying along costa from base above.

CAPE COLONY, Clanwilliam (Marchant), 1 ♂ in excellent condition except that it has lost palpi; Capetown, in January (Lightfoot), 2 ♀ specimens in very poor condition, but apparently with yellow colouring more generally diffused, and crimson streak obsolete on anterior portion, with some crimson marking towards tornus.

DIICOSMA CERAMOPIS, n. sp.

♂. 13 mm. Head and palpi ochreous-whitish. Antennæ whitish-ochreous, basal joint white marked with crimson above. Thorax whitish-yellowish, tips of patagia and posterior margin tinged with pink. Abdomen whitish, anal tuft ochreous-tinged. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen very obliquely rounded; pale yellowish; a crimson

streak from base to $\frac{1}{4}$ of dorsum, suffused with dark purplish-fuscous posteriorly, edged with white above and beneath; a broad ashy-purplish streak irrorated with deep ferruginous along costa from $\frac{1}{4}$ to apex, attenuated posteriorly, edged beneath with whitish suffusion, before and beyond middle confluent with two upwards-convex lunulate deep ferruginous marks whose adjacent extremities cross in disc and enclose with costal streak a clear white elongate spot; a ferruginous dot beneath fold beyond $\frac{1}{3}$: cilia whitish-yellowish, on costa ferruginous-fuscous. Hindwings and cilia whitish; costal hairpencil whitish.

CAPE COLONY, Kalk Bay, in February (Lightfoot); one specimen.

XYLORYCTIDÆ.

ODITES METAPHRACTA, n. sp.

♂. 27 mm. Head, palpi, antennæ, thorax, and abdomen whitish-ochreous; palpi brownish towards base; antennal ciliations 3. Forewings elongate, moderate, costa moderately arched, apex obtuse, termen rounded, little oblique; 2 from angle; whitish-ochreous, with a faint yellowish tinge; costal edge fulvous: cilia whitish-ochreous, on costa fulvous mixed with fuscous. Hindwings pale whitish-ochreous; cilia whitish-ochreous.

NATAL, Durban, in November (Leigh); one specimen, bred but without particulars.

ÆCOPHORIDÆ.

HARPELLA SCOLOPISTIS, n. sp.

♂. 15-17 mm. Head white, towards centre of crown more or less pale brownish. Palpi pale brownish mixed with white, second joint very long, clothed with rough projecting scales on apical half above and towards apex beneath, terminal joint much shorter than second. Antennæ grey, ciliations 3. Thorax light brownish sprinkled with white. Abdomen light grey, sides and apex suffused with white. Forewings elongate, costa gently arched, apex obtuse, termen almost straight, very oblique; rather light fuscous, irrorated with white except on costal third; a moderate white costal streak from near base to $\frac{3}{4}$, attenuated to extremities; stigmata very indistinct, hardly darker, plical beneath first discal: cilia pale brownish, somewhat

mixed with white. Hindwings fuscous, paler and whitish-tinged towards base; cilia fuscous-whitish, with fuscous subbasal shade.

CAPE COLONY, Capetown (Lightfoot); six specimens.

HYPERCALLIA HÆMATELLA Feld.

(*APILETRIA HÆMATELLA* Feld. Reis. Nov. pl. cxxxviii., 61.)

♂. 24 mm. Head white, tinged with light ochreous. Palpi ochreous-white. Antennæ whitish. Thorax ochreous-white, patagia tinged with crimson. Abdomen white. Forewings elongate, costa moderately arched, apex obtuse, termen hardly sinuate, rather strongly oblique; shining white; costal edge black towards base; dorsal half tinged with ochreous and posteriorly suffused with light crimson-pink: cilia white, towards tornus ochreous-tinged. Hindwings white; cilia white, towards base ochreous-tinged.

CAPE COLONY, Capetown, in December (Lightfoot); one specimen. I do not hesitate to identify this with Felder's figure, the species being so distinct in character, though he represents the dorsal half of forewings as wholly deep crimson; probably his figure is over-coloured, but there may be variation as well. I have described this example, as no description has been published. Felder's specimen was stated to be from Mauritius.

PHILOBOTA CHALINITIS, n. sp.

♂. 14 mm. Head white. Palpi white, lower $\frac{2}{3}$ of second joint suffused with ochreous-brown. Antennæ grey, ciliations 2. Thorax white, with shoulders and a stripe on each side of back ferruginous-yellow. (Abdomen broken.) Forewings elongate, costa moderately arched, apex obtuse, termen nearly straight, oblique; white; two short diverging yellow streaks from middle of base, uppermost longer; a yellow mark on dorsum near base; a straight narrow fascia from beyond middle of costa to before middle of dorsum, anterior half yellow, posterior deep brown; an irregular fascia of brown suffusion from $\frac{3}{4}$ of costa to tornus, marked with a rather large yellow spot in middle; a yellow spot towards middle of termen, surrounded with brown suffusion extended upwards to apex: (cilia defective). Hindwings and cilia grey.

CAPE COLONY, Kalk Bay, in February (Lightfoot); one specimen.

DEPRESSARIA APPLANA F.

I refer to this species a rather small dull-coloured ♀ specimen, in which the first discal stigma and obliquely preceding dot are united

into a curved streak—a character which certainly occurs in the species, though only exceptionally; the markings of palpi, which are usually a good specific test in this genus, fully agree. The species may have been introduced accidentally, since it takes shelter in sheds, packing material, &c., so freely as to be almost domestic.

CAPE COLONY, Kalk Bay, in January (Lightfoot).

STENOMIDÆ.

PAREXAULA, n. g.

Head with appressed hairs, sidetufts loosely spreading; ocelli present; tongue developed. Antennæ $\frac{3}{4}$, in ♂ filiform, minutely ciliated ($\frac{1}{3}$), basal joint moderately elongate, with well-developed pecten. Labial palpi very long, recurved, second joint thickened with appressed scales, terminal joint shorter than second, slender, acute. Maxillary palpi very short, filiform, drooping. Posterior tibiæ clothed with long hairs above and beneath. Forewings with vein *1b* furcate, 2 from $\frac{5}{6}$, 3 from angle, curved so as to be nearest 2 in middle, 7 to costa, 7-9 parallel and rather near together, 10 more remote, 11 from middle. Hindwings 1, elongate-ovate, cilia almost 1; 3 and 4 connate, 5-7 nearly parallel, 5 and 6 slightly approximated at base, transverse vein very oblique between 6 and 7.

A remarkable and very interesting genus, which might be assumed as the ancestral form from which the *Oecophoridae* may have been derived.

PAREXAULA ISOMIMA, n. sp.

♂ ♀. 15-17 mm. Head white, crown suffused with fuscous. Palpi fuscous sprinkled with white. Antennæ fuscous. Thorax fuscous or dark fuscous, apex of patagia whitish. Abdomen pale whitish-ochreous, segments banded with deep yellow-ochreous. Forewings elongate, moderate, costa moderately arched, apex pointed, termen very obliquely rounded; white; a moderate fuscous or dark fuscous median streak from base to apex, sending an oblique branch from before its middle to costa beyond middle, a projection on its upper edge at $\frac{2}{3}$ representing second discal stigma; costal edge more or less suffused with dark fuscous from about $\frac{1}{4}$ to $\frac{3}{4}$; an inwardly oblique dark fuscous spot on costa at $\frac{3}{4}$, and a dot beyond this; a broad fuscous or dark fuscous streak along dorsum from base to tornus, near base sometimes extending almost to fold, but leaving base of dorsum white, its upper edge touching an elongate-

oval dark fuscous spot on fold representing plical stigma; sometimes a branch from median streak beyond middle to tornus; two or three small dark fuscous spots on lower part of termen: cilia white, suffused with whitish-fuscous towards tornus. Hindwings whitish-fuscous, more whitish towards base; cilia white.

CAPE COLONY, Capetown and Kalk Bay, in March (Lightfoot); three specimens. Even in superficial characters this species is remarkably like some of the Australian *Ecophoridae*, such as *Philobota interlineatella*.

ELACHISTIDÆ.

COSMOPTERYX ANTICHORDA, n. sp.

♂. 8-9 mm. Head dark fuscous, with a white line above eyes. (Palpi defective.) Antennæ fuscous sprinkled with blackish, two apical joints dark fuscous, next two whitish, next five dark fuscous, next one whitish, next dark fuscous, next whitish, next dark fuscous, basal joint white lined with black. Thorax dark fuscous, with three fine white longitudinal lines. Abdomen shining grey, three basal segments brownish ochreous dorsally except on margins, anal tuft whitish-ochreous. Forewings lanceolate, apex very long and finely caudate; blackish; three fine white longitudinal lines in an oblique series towards base, uppermost extended to costa near base but not nearly reaching fascia, other two short, not nearly reaching base or fascia; costal edge finely white for some distance before fascia; dorsal edge finely white towards base; a broad orange postmedian transverse band, edged anteriorly with a narrow vertical pale golden-metallic fascia bearing a black dot on its posterior edge above middle, and posteriorly by a pale golden-metallic dorsal spot bearing a minute black spot on its upper edge and a silvery-white costal spot slightly beyond it, between which the orange colour forms a triangular projection; from the dorsal spot proceeds a silvery-white subsinuate longitudinal line to apex: cilia dark fuscous. Hindwings and cilia dark fuscous.

CAPE COLONY, Clanwilliam; two specimens.

STAGMATOPHORA DIVITELLA Const.

CAPE COLONY, Capetown (Lightfoot); one example, which does not seem to be specifically distinguishable from a specimen from S. France; the only difference is that the under surface of forewings is uniformly suffused with bronzy-grey, whereas in my French

specimen the markings of the upper surface are represented beneath by a distinct though suffused variegation.

STAGMATOPHORA BASANISTIS, n. sp.

♀. 12 mm. Head whitish, crown tinged with yellow-ochreous. Palpi white, terminal joint with small fuscous subbasal and subapical spots internally. Antennæ dark fuscous spotted with white. Thorax dark purplish-fuscous. Abdomen dark fuscous, segmental margins white. Forewings broad-lanceolate, apex produced, acute; dark purplish-fuscous; ochreous-white transverse spots on costa at $\frac{1}{4}$, middle, and $\frac{3}{4}$, first slightly oblique, reaching fold, touching a small round golden-metallic spot beneath fold, second hardly oblique, reaching half across wing, nearly reaching an almost equally large bronzy-golden spot on dorsum opposite, third small, semicircular, nearly meeting a smaller bronzy-golden spot on dorsum somewhat before it: cilia dark fuscous (defective). Hindwings and cilia grey.

CAPE COLONY, Vryburg (Jones); one specimen.

SCYTHRIS CHLOREMA Meyr.

CAPE COLONY, Capetown (Lightfoot); four specimens. These show the species to be somewhat variable, and the original description may be amended in the following particulars:—

♂ ♀. 14–18 mm. Head and thorax whitish-ochreous, partially suffused with white. Palpi white, second joint externally light brownish sprinkled with black except at apex. Abdomen white beneath. Forewings light greyish-ochreous or pale fuscous, more or less suffused with white, sometimes almost wholly, with a few scattered black scales; sometimes blackish dots beneath fold before $\frac{1}{3}$, and in disc at $\frac{3}{4}$; cilia light greyish-ochreous or pale fuscous, mixed with whitish towards base. Hindwings ochreous-grey, paler towards base; cilia whitish-ochreous.

PLUTELLIDÆ.

YPONOMEUTA SISTROPHORA, n. sp.

♂ ♀. 20–21 mm. Head white, crown with four black spots. Palpi whitish, base of terminal joint blackish. Antennæ whitish. Thorax white, with a small black spot on patagia, two on each side of back, and one at posterior extremity. Abdomen grey. Forewings elongate, narrow, costa moderately arched, apex obtuse, termen slightly

rounded, oblique; pale shining grey; 25-29 small black spots or dots, viz., a series of four or five just beneath anterior half of costa, a series of about seven below this from $\frac{1}{4}$ to near apex, an evenly distributed median series of seven, a subdorsal series of five or six, and about five small ones arranged on veins 7 and 8 towards apex: cilia pale grey. Hindwings dark grey; basal hyaline patch short, narrow, acute, lying above vein 1c; cilia light grey.

NATAL, Lower Umkomaas, in January; two specimens.

COPTOPROCTIS Z.

Head smooth; ocelli absent; tongue developed. Antennæ $\frac{3}{4}$, basal joint moderate, without pecten. Labial palpi rather short, ascending, loosely scaled, terminal joint shorter than second, pointed. Maxillary palpi rudimentary. Posterior tibiæ smooth-scaled. Forewings with 1b furcate, 2 from angle, 3 and 4 stalked, 7 and 8 separate, 7 to termen, secondary cell defined, 11 from before middle. Hindwings 1, elongate-ovate, cilia $\frac{1}{4}$; 2 remote, 3 and 4 stalked, 5 remote, curved, 6 and 7 rather near together and nearly parallel, transverse vein acutely angulated inwards on 6.

Allied to *Anticrates*, from which it differs by the stalking of veins 3 and 4 of forewings. I give the characters of this genus, as they are insufficiently given by Zeller, who treated it only as a group of *Ethmia* (*Psecadia*), to which it is not in fact at all related.

COPTOPROCTIS LANGUIDA Z.

CAPE COLONY, Kalk Bay, in March.

BATRACHEDRA ŒMIAS, n. sp.

♂. 11 mm. Head grey, face white. Palpi white, second and terminal joints each with two dark fuscous bands. Antennæ dark grey, towards apex with three slender white rings. Thorax grey, patagia suffused with ochreous. Abdomen grey. Forewings very narrow, elongate-lanceolate; clear light ochreous-brown; a moderate fuscous streak irrorated with dark fuscous along dorsum from base to near apex, with the rather large dark fuscous plical stigma resting on its upper edge; a similar streak along posterior half of costa, continued as a fine line along costal edge to base; second discal stigma minute, black; a small black apical dot: cilia rather dark fuscous, at apex with a basal brownish-ochreous spot. Hindwings rather dark fuscous; cilia fuscous.

CAPE COLONY, Capetown, in September; one specimen.

COLEOPHORA MEGALOPTILA, n. sp.

♀. 18 mm. Head and thorax white. Palpi white, scales of second joint forming a short angular apical tuft. Antennæ white, basal joint with very large projecting externally yellow-ochreous tuft of scales in front. Abdomen whitish. Forewings very narrow, elongate-lanceolate; deep ochreous-yellow; a broad white dorsal band from base to tornus, near base occupying half wing, gradually narrowed to tornus, suffused with yellowish posteriorly; a moderate snow-white costal streak from base to near apex, edged beneath by a streak of dark brown suffusion which begins very narrowly near base and becomes much broader posteriorly, covering whole apex of wing: cilia pale whitish-ochreous, on costa snow-white. Hindwings pale grey; cilia whitish-ochreous.

CAPE COLONY, Clanwilliam; one specimen. Allied to *vibicigerella*.

TINEIDÆ.

PHYLLOCNISTIS CITRELLA Stt.

CAPE COLONY, Capetown (Lightfoot); two bred specimens. Doubtless introduced with its foodplant; not previously recorded from Africa.

LYONETIA COTIFRAGA, n. sp.

♀. 8 mm. Head white, with a few fuscous hairs in centre of crown. Palpi whitish. Antennæ pale grey, base white. Thorax white. Abdomen light grey. Forewings elongate, very narrow, moderately pointed, apex strongly produced, caudate; fuscous, mixed with dark fuscous; four oblique white dorsal blotches or spots, reaching half across wing, first largest, basal, containing a spot of ground colour, second trapezoidal, third and fourth wedgeshaped, fourth tornal, small; three oblique white wedgeshaped marks from costa beyond middle; a round black apical dot: cilia white, towards tornus pale fuscous, round apex with three vertical costal bars, two vertical dorsal, and one direct apical bar dark fuscous, first dorsal bar preceded by a fuscous spot. Hindwings and cilia light grey.

CAPE COLONY, Capetown (Lightfoot); one specimen.

OINOPHILA V-FLAVA Haw.

CAPE COLONY, Capetown (Lightfoot); five specimens. These vary much in development of marking, the extreme forms being (*a*) both fasciæ well developed and connected by a broad bar in disc, and

(b) all markings nearly obsolete. Not previously recorded from Africa.

HIEROXESTIS OMOSCOPA Meyr.

CAPE COLONY, Capetown, in January (Lightfoot); two specimens. Hitherto only recorded from Australia, where however it is almost certainly not native, so that Africa may be its real home.

TINEOLA LEUCASTIS Meyr.

. TRANSVAAL, Klerksdorp, in September (Alston).

MONOPIS CROCICAPITELLA Clem.

CAPE COLONY, Capetown (Lightfoot); five specimens. An introduced species, now cosmopolitan.

MONOPIS ETHELELLA Newm.

CAPE COLONY, Capetown, in December (Lightfoot); six specimens. These have the discal spot usually smaller and more dot-like, and the pale speckling towards costa posteriorly very scanty or absent, but cannot be regarded as specifically distinct from the typical form with which I am familiar in Australia and New Zealand.

TINEA GRANELLA L.

CAPE COLONY, Capetown, in December (Lightfoot); two specimens. Introduced with grain, on which it feeds.

TINEA FUSCIPUNCTELLA Haw.

CAPE COLONY, Capetown (Lightfoot); three specimens. An introduced refuse-feeder.

TINEA PELLIONELLA L.

CAPE COLONY, Capetown (Lightfoot); ten specimens. Also introduced; feeds on clothes, carpets, &c.

TINEA SESQUITERTIA, n. sp.

♂ ♀. 10–11 mm. Head light brownish-ochreous. Palpi pale ochreous sprinkled with dark fuscous. Antennæ somewhat over 1, pale greyish-ochreous faintly spotted with fuscous. Thorax whitish-ochreous tinged with yellowish. Abdomen pale grey. Forewings elongate, narrow, costa moderately arched, apex pointed, termen extremely obliquely rounded; whitish-ochreous tinged with yellowish, strewn with coarse fuscous strigulae; small dark fuscous spots on costa slightly before middle and at $\frac{2}{3}$, and on dorsum

opposite first costal, surrounded by clear spaces on margins: cilia whitish-ochreous, at base with a few fuscous scales. Hindwings grey; cilia pale grey.

CAPE COLONY, Capetown (Lightfoot); three specimens.

TINEA ANTIPHRACTA, n. sp.

♀. 12-13 mm. Head pale yellowish. Palpi ochreous-whitish. Antennæ light grey. Thorax pale whitish-ochreous, patagia dark purplish-fuscous except on outer edge. Abdomen whitish-grey. Forewings elongate, narrow, costa gently arched, apex obtuse, termen extremely obliquely rounded; 7 and 8 stalked; whitish-ochreous, with a few scattered fuscous scales; a thick dark purplish-fuscous streak along basal third of costa, posterior extremity suffused; a strong dark purplish-fuscous streak along fold from base to $\frac{2}{3}$ of wing, terminating abruptly; discal stigmata dark purplish-fuscous, approximated, first elongate, dash-like, second rounded; sometimes some undefined grey spots or scattered scales round apex and along termen: cilia whitish-ochreous. Hindwings pale whitish-ochreous tinged with grey; cilia pale whitish-ochreous.

CAPE COLONY, Capetown and Clanwilliam, in January; four specimens. Near *T. zebra* Wals.

SETOMORPHA RUTELLA Z.

CAPE COLONY, Capetown, in January and August (Lightfoot); seven specimens.

AMYDRIA Clem.

I think *Scyrotis* Meyr. must be merged in this; I find that maxillary palpi are present, though very short and sometimes concealed in the dense scales of face; a short tongue is sometimes but not always present. The bristles of labial palpi are usually much more developed in the African species, but the character varies specifically.

AMYDRIA POLIODES, n. sp.

♂. 24 mm. Head ochreous-whitish. Palpi whitish, second joint with numerous spreading bristles beneath and externally, suffused with fuscous except at apex, terminal joint mixed with fuscous. Antennæ light grey. Thorax purplish-fuscous sprinkled with darker. Abdomen pale greyish-ochreous. Forewings elongate, narrow, costa gently arched, apex round-pointed, termen very obliquely rounded; pale greyish-ochreous suffused with light

purplish-fuscous, strewn throughout with undefined strigulae of dark fuscous irroration; costal edge more or less ochreous-whitish except towards base; second discal stigma represented by a small spot of dark fuscous suffusion: cilia pale greyish-ochreous mixed with pale purplish-fuscous (imperfect). Hindwings pale greyish-ochreous irrorated with fuscous; cilia ochreous-grey-whitish, base sprinkled with fuscous.

CAPE COLONY, Kalk Bay, in March (Lightfoot); two specimens. Nearly allied to *A. percastis* Meyr., but forewings rather broader, with termen less oblique, and easily distinguished by the whitish head.

AMYDRIA RAPIDA, n. sp.

♂. 18–20 mm. Head and thorax whitish-yellowish, forehead suffused with pale fulvous; tongue short. Palpi whitish-ochreous, second joint with dense rough projecting scales beneath and long bristles externally, suffused with fulvous above and towards apex, terminal joint rather short. Antennae ochreous-whitish finely ringed with grey. Abdomen pale whitish-ochreous. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen extremely obliquely rounded; pale brownish-ochreous; markings yellow-whitish or white, indistinct, viz., a broad costal streak from base to $\frac{3}{4}$, a large patch extending over dorsal half from base to tornus, and a broad median streak from $\frac{3}{4}$ of disc to apex: cilia whitish-ochreous, round apex sometimes sprinkled with grey. Hindwings grey; cilia whitish-grey, with grey basal shade.

CAPE COLONY, Capetown (Lightfoot); five specimens.

AMYDRIA ARCTOCEPHALA, n. sp.

♂. 16–17 mm. Head dark fuscous mixed with whitish; tongue developed. Palpi whitish-yellowish sprinkled with fuscous, second joint fuscous except apex, with external row of bristles. Maxillary palpi short, stout. Antennae grey. Thorax pale brownish-ochreous, darker anteriorly. Abdomen grey. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen very obliquely rounded; pale brownish-ochreous, more brownish towards base of costa, with a very few scattered black specks; costal edge dark fuscous towards base; a small black discal dot at $\frac{2}{3}$: cilia pale brownish-ochreous (imperfect). Hindwings grey; cilia whitish-grey, with grey subbasal shade.

CAPE COLONY, Kalk Bay, in February (Lightfoot); two specimens

AMYDRIA TROPHIAS Meyr.

CAPE COLONY, Capetown (Lightfoot); four specimens.

TIQUADRA GOOCHII Wals.

NATAL, Durban (Leigh); one specimen. This is a ♂, expanding 25 mm., with the hindwings pale ochreous-yellowish, cilia yellow-whitish.

MESOPHERNA INCULTELLA Walk.

CAPE COLONY, Clanwilliam (Marchant); two specimens. This species, referred by Walker to *Tinea* and not since corrected, appears truly referable to the genus *Mesopherna*, hitherto only known by three Australian species; it is therefore an interesting identification. Antennæ of ♂ with spreading ciliations (2); forewings with 7 and 8 stalked, 7 to apex.

MELASINA CIRCOPHORA, n. sp.

♂ ♀. 26–30 mm. Head, palpi, and antennæ dark fuscous, slightly whitish-sprinkled; palpi moderate, rather slender, curved, ascending; antennal pectinations in ♂ hardly 3. Thorax dark fuscous. Abdomen fuscous. Forewings very elongate, narrow, costa gently arched, apex obtuse, termen slightly rounded, rather strongly oblique; all veins separate; dark fuscous; sometimes some slight whitish suffusion towards fold in middle, and a few scattered whitish scales; two large transversely placed and confluent black rings in disc before middle, two others longitudinally placed and separate in disc posteriorly, and a fifth beneath these more or less defined on lower margin, all these more or less incomplete; between or traversing these are sometimes several more or less marked black longitudinal dashes on veins, especially in ♀; small blackish marks on or near dorsum at $\frac{1}{3}$ and tornus: cilia fuscous, tips paler. Hindwings light fuscous, in ♀ darker-sprinkled; cilia light fuscous, towards tips whitish.

CAPE COLONY, Capetown (Lightfoot, Robertson); three specimens. The black markings are evidently variable, but the species is easily recognised by the very long forewings and uniform dark ground-colour.

MELASINA ÆDIFICA Meyr.

CAPE COLONY, Vryburg; one specimen.

MELASINA BRACHYCTENIS, n. sp.

♂. 24 mm. Head pale yellowish-ochreous, on sides of crown fuscous-tinged. Palpi moderate, densely scaled, tolerably pointed,

whitish-ochreous somewhat mixed with fuscous. Antennæ ochreous-whitish, pectinations hardly 3, lined with dark fuscous. Thorax ochreous-whitish, shoulders suffused with dark fuscous irroration. Abdomen ochreous-whitish more or less suffused with fuscous. Forewings elongate, rather narrow, costa moderately arched, apex obtuse, termen somewhat rounded, oblique; all veins separate; ochreous-whitish, irregularly strewn with suffused fuscous strigulæ irrorated with blackish-fuscous, appearing to form a small basal patch, a broad streak along anterior $\frac{2}{3}$ of costa, a broad bent median fascia, and a patch in disc posteriorly, but these are all very indefinite; the ground-colour appears to form a clear white patch towards dorsum before middle, and another towards costa beyond middle; about five small dark fuscous spots on posterior half of costa: cilia whitish-ochreous, indistinctly barred with grey and dark fuscous irroration. Hindwings grey, sprinkled with darker; cilia whitish, with a fuscous shade.

CAPE COLONY, Vryburg; two specimens. An obscure insect, but distinguished from other species of similar appearance by the shorter antennal pectinations, which in them are about 5.

SUPPLEMENT.

Since writing the above, I have received a further consignment of material from Dr. Péringuey, as well as some bred from the larvæ by Mr. Chas. Lounsbury, the Cape Government Entomologist; and I have therefore added these in the form of a supplementary list.

PTEROPHORIDÆ.

PLATYPTILIA AMPHILOGA, n. sp.

♀. 14 mm. Head, palpi, and thorax whitish mixed with dark reddish-fuscous, face with strong rounded horny prominence, palpi moderately long, porrected. Antennæ fuscous mixed with whitish. Abdomen white sprinkled with dark fuscous. Forewings cleft from $\frac{3}{4}$, segments moderately broad, termen of first somewhat sinuate, of second nearly straight, oblique; whitish, closely and suffusedly strigulated with reddish-fuscous and dark fuscous irroration, more distinctly on costa; small spots of dark fuscous suffusion on fold at $\frac{1}{3}$ and in disc before middle; a triangular dark fuscous blotch on costa before base of cleft, its apex reaching to below cleft, followed

on costa by a suffused white spot; a dark fuscous fascia crossing middle of both segments, anterior edge suffused, posterior straight, edged by a white line: cilia whitish, round termen of both segments with a dark fuscous subbasal line, within cleft mixed with fuscous except a patch on lower margin of first segment posteriorly, followed by some blackish scales, on dorsum with a triangular projection of blackish scales at $\frac{3}{5}$, a small projection at $\frac{4}{5}$, and a larger one at tornus. Hindwings dark grey; cilia fuscous, on dorsum of third segment with a large elongate-triangular projection of fuscous and blackish scales at $\frac{2}{3}$, and irregularly scattered black scales between this and base.

CAPE COLONY, Montague, in November (Purcell); one specimen. Similar to *molopias* and *pusillidactylus*, and intermediate between them in size, and also in the position of the dorsal scale-projection of hindwings; specially characterised by the frontal prominence.

PSELNOPHORUS ASTRAGALOTES, n. sp.

♂. 15 mm. (Head defaced.) Antennæ greyish mixed with white. Thorax light fuscous, shoulders white. Abdomen pale ochreous with white subdorsal and lateral lines, latter partly edged above with dark fuscous. Legs white lined with dark fuscous. Forewings cleft from $\frac{2}{3}$, segments acute, first narrow, second very narrow; light fuscous sprinkled with darker; a narrow white streak along anterior half of costa, scales of extreme costal edge dark fuscous; a small subquadrate dark fuscous spot in disc at $\frac{2}{5}$, followed by a spot of white suffusion; a dark fuscous elongate mark on costa above base of cleft, preceded and followed by suffused white marks; a dark fuscous crescentic spot on base of cleft; a white patch occupying anterior half of second segment except dorsal edge; both segments mixed with white and dark fuscous towards apex: cilia pale greyish-ochreous, mixed with dark fuscous especially posteriorly, on costa with several white patches, on upper margin of second segment white towards apex, on lower margin of both segments with a white patch beyond middle. Hindwings dark grey; cilia fuscous, at apex of second segment whitish.

CAPE COLONY, Clanwilliam (Lightfoot); one specimen. Allied to *baptodactylus*.

PTEROPHORUS SERPENS, n. sp.

♂. 18 mm. Crown whitish-ochreous, between antennæ white, face brownish-ochreous. Palpi moderate, slender, fuscous, white beneath. Antennæ ochreous-whitish. Thorax whitish. Abdomen whitish-ochreous, with subdorsal and lateral white stripes. Legs

whitish, anterior and middle pairs lined with dark fuscous. Forewings cleft from $\frac{3}{5}$, segments rather narrow, acute; whitish, with a few scattered fuscous scales; some fuscous irroration towards middle of dorsum and before cleft; a dark fuscous triangular spot on costa above base of cleft, its discal portion nearly reaching this, but paler and more suffused; a black dot on costa midway between this and apex, and beyond this a dark fuscous dot on lower margin of first segment; apex of second segment suffused with dark fuscous, with a black dot on its lower margin near apex: cilia ochreous-whitish, on lower margin of both segments with a brownish or fuscous patch before apex, towards base of cleft brownish, on lower margin of second segment with a pale brownish patch towards base. Hindwings grey; cilia light brownish.

CAPE COLONY, Kalk Bay, in January (Lightfoot); one specimen.

AGDISTIS CRETIFERA, n. sp.

♂ ♀. 28-30 mm. Head white, forehead rather rounded-prominent. Palpi rather short, rough-scaled, white, with two or three fuscous scales. Antennæ whitish spotted with fuscous. Thorax white, tinged or sprinkled with pale ochreous. Abdomen whitish-ochreous, with a few black specks. Forewings with apex obtuse, termen almost straight, rather strongly oblique; greyish-ochreous, irrorated with white and fuscous; a streak of ochreous-white suffusion along dorsum; triangular area ochreous-white, in ♂ irrorated with greyish-ochreous and fuscous towards termen, with a small suffused dark fuscous spot at inverted apex, and others beneath its lower margin beyond middle and midway between this and first; cilia ochreous-whitish (imperfect). Hindwings ochreous-whitish; some suffused dark fuscous irroration along posterior part of subdorsal fold and lower part of termen; cilia ochreous-whitish.

CAPE COLONY, Worcester, 1 ♂; Saldanah Bay (Lightfoot), 1 ♀.

EUCOSMIDÆ.

POLYCHROSIS SPISSANA Zell.

1 ♂, bred from larva feeding on large red *Ceroplastes* (*Coccidæ* or scale-insects) (Lounsbury). The surface of hindwings towards middle of costa is in this sex clothed with long hairs.

EUCOSMA (?) INSOLENS, n. sp.

♀. 11-12 mm. Head fuscous. Palpi moderate, porrected, dark fuscous sprinkled with whitish, base whitish. Antennæ dark fuscous

ringed with whitish. Thorax dark fuscous sprinkled with whitish. Abdomen fuscous. Forewings elongate, somewhat dilated posteriorly, costa gently arched, apex obtuse, termen faintly sinuate, rather oblique; dark fuscous, irrorated with white throughout; the confluence of white irroration forms about eight indistinct transverse marks from costa, more defined posteriorly; anterior half of wing with indications of undefined transverse whitish striæ; two more distinct transverse whitish marks from dorsum beyond middle; two undefined thick somewhat curved leaden-grey striæ sprinkled with white from costa about $\frac{2}{3}$ to about tornus, forming margins of ocellus, within which are three indistinct black dots or marks; last costal white mark extended indistinctly to termen beneath apex: cilia fuscous sprinkled and indistinctly barred with white, with a dark fuscous subbasal shade. Hindwings with 3 and 4 connate; whitish-fuscous, apical area and termen broadly suffused with fuscous; cilia fuscous-whitish, with fuscous subbasal line.

CAPE COLONY, Hex River; two specimens bred in August from larvæ feeding on a species of *Ceroplastes* (*Coccidæ*) (Lounsbury). The generic name *Eucosma* Hb. is (as Prof. Fernald has shown to be necessary) applied here to the genus hitherto termed by me *Epiblema* Hb.; the generic reference of the present species is, however, in the absence of the ♂, still uncertain.

TORTRICIDÆ.

CACOECIA HELIASPIS Meyr.

♂. 17 mm. Forewings with costal fold reaching from base to $\frac{1}{4}$, narrow, slight, costa posteriorly sinuate, apex almost rectangular, termen straight, vertical, rounded beneath; a large undefined blotch of dark ashy-fuscous and blackish-fuscous suffusion occupying most of dorsum and reaching half across wing; other characters as in ♀.

I think, however, now that this may be a geographical form of *C. occidentalis* Wals.

PHALONIADÆ.

PHARMACIS TRIMENI Feld.

(CONCHYLIS TRIMENI Feld. Reis. Nov. pl. cxxxvii., 48, 51.)

CAPE COLONY, Kalk Bay, Clanwilliam, in February (Lightfoot); three specimens. The name *Pharmacis* Hb. supersedes *Euxanthis* Hb. Felder's two figures represent the sexes.

PHARMACIS STIGMATICA, n. sp.

♂. 12–13 mm. Head ochreous-white. Palpi pale brownish. Thorax whitish-ochreous. Abdomen ochreous-whitish. Forewings elongate, narrow, slightly dilated posteriorly, costa almost straight, apex obtuse, termen obliquely rounded; ochreous-whitish, irregularly and suffusedly mixed with light yellow-ochreous; anterior half of costal edge dark fuscous, beneath which is some fuscous suffusion; a moderate ochreous-brown median fascia nearly parallel to termen, but obtusely angulated above middle, and indented above this, sinuate near dorsum, lower portion sharply defined and more or less marked with dark fuscous, towards anterior edge near dorsum suffused with dark leaden-grey; a distinct black discal dot at $\frac{3}{4}$: cilia whitish, outer half suffused with fuscous and sprinkled with dark fuscous. Hindwings grey-whitish, becoming greyer posteriorly; cilia whitish, with a faint grey line.

CAPE COLONY, George (Wilman), Capetown (Lightfoot); two specimens.

GELECHIADÆ.

MEGACRASPEDUS SERICA, n. sp.

♀. 10 mm. Head, thorax, and abdomen whitish. Palpi whitish, tuft of second joint long, terminal joint dark fuscous anteriorly. Antennæ grey, towards base whitish. Forewings broad-lanceolate, apex rather produced; acute; 6 separate; grey, suffusedly irrorated with shining white, becoming wholly white towards costa on anterior half, greyest towards apex; a few scattered black specks, especially on posterior half: cilia whitish, with a few black specks near base. Hindwings and cilia whitish.

CAPE COLONY, Kalk Bay, in January (Lightfoot); one specimen.

ARISTOTELIA PTILASTIS, n. sp.

♂. 11 mm. Head white, finely sprinkled with fuscous and on crown with dark fuscous. Palpi rather thickened with scales, white, sprinkled with dark fuscous, second and terminal joints each with two bands of black irroration. Antennæ fuscous indistinctly ringed with whitish. Thorax fuscous irrorated with white. Abdomen grey, tinged with whitish-ochreous towards base. Forewings elongate-lanceolate; 6 and 7 out of 8; rather dark fuscous irrorated with white; a dark fuscous dot towards costa near base; four costal spots of brown suffusion irrorated with black, becoming larger

posteriorly, first very small, fourth antepical, large; obliquely beyond the first three of these are three subdorsal tufts of scales, mixed with black anteriorly, white posteriorly, third preceded by a yellow-ochreous spot; second and third costal spots edged beneath by yellow-ochreous spots; a small yellow-ochreous spot with two or three raised black scales in middle of disc: cilia pale fuscous sprinkled with dark fuscous round apex, with rows of whitish points. Hindwings light grey; cilia light greyish-ochreous.

CAPE COLONY, Kalk Bay, in March (Lightfoot); one specimen.

GELECHIA EPICENTRA, n. sp.

♂ ♀. 16 mm. Head and thorax pale ochreous. Palpi pale ochreous, second joint with dark fuscous specks tending to form longitudinal series, terminal joint almost as long as second, whitish, with lateral dark fuscous line towards base. Antennæ fuscous. Abdomen whitish-ochreous. Forewings elongate, narrow, slightly dilated, costa gently arched, apex round-pointed, termen very obliquely rounded; light yellow-ochreous irregularly sprinkled with fuscous; a small fuscous spot in disc at $\frac{1}{6}$; stigmata black, plical obliquely before first discal, beyond which is an additional black dot in middle of disc, these three connected by a patch of fuscous suffusion, second discal less defined, preceded by an additional undefined dark fuscous dot obliquely above it; a transverse patch of fuscous suffusion from costa at $\frac{2}{3}$, reaching half across wing; a series of blackish-fuscous dots round posterior third of costa and termen: cilia whitish-ochreous, with a few fuscous specks towards base. Hindwings over 1, pale grey; cilia whitish-ochreous.

CAPE COLONY, Kalk Bay, in February (Lightfoot); two specimens.

GELECHIA PANAULA, n. sp.

♀. 18 mm. Head and thorax whitish-ochreous, sides more brownish-ochreous. Palpi ochreous-whitish, second joint brownish-tinged, terminal joint almost as long as second. Antennæ ochreous-whitish, basal joint brownish-tinged. Abdomen ochreous-whitish. Forewings elongate, narrow, costa gently arched, apex acute, termen extremely obliquely rounded; whitish-ochreous tinged with yellowish and mixed with pale ochreous-brownish; costa, dorsum, and all veins marked by fine white lines; some whitish subdorsal suffusion; discal stigmata small, blackish, plical represented by a very fine black linear mark obliquely before first discal: cilia ochreous-whitish (defective). Hindwings whitish; cilia ochreous-whitish.

CAPE COLONY, Capetown (Lightfoot); one specimen.

GELECHIA PHELOTRIS, n. sp.

♀. 21 mm. Head whitish-ochreous, crown irrorated with fuscous. Palpi ochreous-whitish, second joint irrorated with dark fuscous except towards apex, terminal joint with two broad bands of dark fuscous irroration, as long as second. Antennæ whitish-ochreous ringed with dark fuscous. Thorax whitish-ochreous suffused with fuscous and irrorated with dark fuscous. Abdomen grey-whitish. Forewings elongate, narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; whitish-ochreous, irregularly and suffusedly mixed throughout with brownish and rather dark fuscous; stigmata ferruginous with one or two dark fuscous scales, cloudy, indistinct, plical obliquely before first discal; indications of very indistinct dark fuscous dots round posterior part of costa and termen: cilia pale greyish-ochreous mixed with fuscous and sprinkled with dark fuscous. Hindwings with 6 and 7 nearly parallel towards base, suddenly approximated near base; grey-whitish; cilia pale whitish-ochreous.

CAPE COLONY, Kimberley, in August (Captain Barrett-Hamilton); one specimen.

YPSOLOPHUS SCENITES, n. sp.

♀. 18 mm. Head and thorax light greyish-ochreous. Palpi fuscous, second joint rather short, white at apex, with short apical tuft beneath, terminal joint twice as long as second, ochreous-whitish. Antennæ and abdomen fuscous. Forewings elongate, rather narrow, somewhat dilated posteriorly, costa slightly arched, apex obtuse, termen nearly straight, somewhat oblique; pale fuscous, with scattered dark fuscous scales; a short dark fuscous costal strigula before middle; second discal stigma rather dark fuscous, indistinct: cilia pale ochreous. Hindwings light grey, somewhat darker towards apex; cilia pale greyish.

CAPE COLONY, King William's Town (Lightfoot); one specimen.

CHELARIA ALBOGRISEA Wals

This species differs from the type of *Chelaria* in having two posterior scale-projections on apical joint of palpi instead of one, and also 6 of forewings separate, whilst in the type 7 and 8 rise out of 6. In the latter character it agrees with the closely allied Australian genus *Allocota* Meyr., to which it should perhaps be referred; but I have a number of allied species from India, of which the structural variation is rather puzzling, and their generic definition must be reserved for further study.

NATAL, Durban, in November (Leigh).

BLASTOBASIDÆ.

BLASTOBASIS TARICHEUTA, n. sp.

♀. 21 mm. Head brownish-ochreous. Palpi whitish-ochreous mixed with dark fuscous except at apex of second joint. Antennæ and thorax fuscous. Abdomen whitish-ochreous mixed with fuscous. Forewings elongate, narrow, costa gently arched, apex round-pointed, termen extremely obliquely rounded; fuscous, with a few whitish scales; a lighter spot on base of costa; round spots representing discal stigmata, an undefined streak along fold, and a subtriangular spot on tornus very indistinctly formed by darker suffusion; indistinct ochreous-whitish dots along posterior third of costa and round apex: cilia whitish-ochreous tinged with brownish. Hindwings and cilia whitish-ochreous.

CAPE COLONY, Capetown (Lightfoot); one specimen.

ÆCOPHORIDÆ.

ISOCRITA, n. g.

Head with appressed scales; ocelli present; tongue developed. Antennæ $\frac{3}{4}$, in ♂ serrulate, pubescent, basal joint moderate, without pecten. Labial palpi long, recurved, second joint with appressed scales, loosely spreading towards apex, terminal joint shorter than second, slender, acute. Maxillary palpi short, loosely scaled, appressed to tongue. Posterior tibiæ clothed with long hairs above. Forewings with 1*b* very long-furcate, 2 from $\frac{2}{3}$, 3 from angle, 7 and 8 stalked, 7 to costa, 11 from rather before middle. Hindwings $\frac{2}{3}$, ovate-lanceolate, cilia $1\frac{1}{2}$; 2-7 nearly equidistant and parallel.

This genus appears to be certainly allied to *Diocosma*, described in the earlier part of this paper, and though both are curious and rather abnormal, I think that, considered together, they must be referred to the *Æcophorida*, falling in the group *Depressariades*, and probably having most affinity to the Indian genus *Eonympha*.

ISOCRITA STOLARCHA, n. sp.

♂ ♀. 12-13 mm. Head and thorax pale yellow thinly reticulated with red, face shining yellow-whitish. Palpi rosy-whitish. Antennæ whitish-fuscous, more whitish towards base, basal joint crimson. Abdomen pale whitish-ochreous, in ♂ with a round black lateral spot before apex. Forewings elongate, costa mode-

rately arched, apex round-pointed, termen very obliquely rounded; pale yellow, coarsely and irregularly reticulated with crimson-red, in ♂ more or less suffused and subconfluent throughout so as to appear nearly all red, in ♀ suffused and confluent towards margins on posterior half only; a streak from middle of base to middle of dorsum and thence to costa beyond middle, a spot beneath costa at $\frac{1}{3}$, and a series of cloudy dots along posterior part of dorsum and termen to apex in ♀ indicated by dark purplish-fuscous suffusion, in ♂ hardly traceable, purple-crimson: cilia pale yellowish, towards base suffused in ♂ with crimson, in ♀ with dark purplish-fuscous. Hindwings and cilia ochreous-whitish.

CAPE COLONY, Capetown and Kalk Bay, in March (Lightfoot); two specimens.

RHŒOPTERA, n. g.

Head loosely haired, hairs projecting on forehead in a conical rough tuft; ocelli small; tongue developed. Antennæ $\frac{3}{4}$, in ♂ moderately ciliated ($1\frac{1}{2}$), basal joint moderate, without pecten. Labial palpi very long, curved, ascending, second joint beneath with triangular apical tuft of long projecting scales, terminal joint as long as second, slender, acute. Maxillary palpi very short, loosely scaled, appressed to tongue. Posterior tibiæ clothed with hairs above. Forewings with 1*b* furcate, 2 from towards angle, 7 and 8 stalked, 7 to termen, 11 from middle. Hindwings somewhat over 1, elongate-ovate, cilia $\frac{1}{2}$; 3 and 4 closely approximated at base, 5-7 parallel.

Type *R. gigas* Wals. Apparently most allied to the Australian genus *Saropla* Meyr.; the greater relative breadth of the hindwings is unusual in the *Ecophoridae*, but is due to the exceptional and irregular contraction of the forewings. The species is referred by Lord Walsingham to *Ypsolophus*, with which there is some superficial resemblance, but the neuration is entirely different.

PHILOBOTA TECTIFERA, n. sp.

♀. 13 mm. Head and thorax yellow-ochreous, face and shoulders suffused with pale grey. Palpi grey mixed with pale yellowish. Antennæ and abdomen grey. Forewings elongate, costa gently arched, apex round-pointed; termen nearly straight, oblique; fulvous-yellowish, suffused with pale fuscous towards costa except near base; fold from near base to prætorial blotch broadly suffused with ferruginous-brown; first discal stigma dark fuscous; a triangular rather dark purplish-fuscous blotch on dorsum before

tornus, reaching rather more than half across wing, anteriorly edged with white; immediately beyond this a moderate incurved fascia of ferruginous-brown suffusion from $\frac{3}{4}$ of costa to tornus, where it coalesces with a narrow irregular-edged terminal fascia, yellow space between these edged with white beneath: cilia pale fuscous mixed with ferruginous-brownish (defective). Hindwings rather dark grey; cilia whitish-grey.

CAPE COLONY, Kalk Bay, in March (Lightfoot); one specimen.

GRACILARIADÆ.

GRACILARIA PROSTICTA, n. sp.

♂. 9 mm. Head brassy-ochreous-whitish, crown bronzy-tinged. Palpi whitish, lower $\frac{2}{3}$ of second joint grey externally. Antennæ pale grey, towards base whitish. Thorax pale ochreous tinged with purplish-grey anteriorly. Abdomen grey. Anterior and middle legs dark fuscous, tarsi white except towards tip, posterior legs whitish. Forewings elongate, very narrow, costa anteriorly straight, posteriorly gently arched, apex pointed, termen continuous with dorsum; violet-bronzy-ochreous; about twelve minute black dots arranged along costa from base to $\frac{2}{3}$, and some others beneath costa towards base; a rather broad light brassy-yellow streak extending along costa from before $\frac{1}{3}$ to near apex; a small elongate blackish spot in middle of disc; a dark fuscous dot on costa near apex: cilia whitish-yellowish tinged with purplish-bronzy, at apex with a dark bronzy spot, round apex with tips black. Hindwings grey; cilia yellow-grey-whitish.

CAPE COLONY, Kalk Bay, in February (Lightfoot); one specimen.

PLUTELLIDÆ.

GYMNOGRAMMA RHODONEURA, n. sp.

♂. 16-17 mm. Head pale ochreous, face dull crimson. Palpi whitish-ochreous tinged with crimson. Antennæ whitish-ochreous, basal joint suffused with crimson. Thorax pale ochreous, shoulders and a central stripe light crimson. Abdomen whitish-ochreous. Forewings elongate, costa moderately arched, apex obtuse, termen little rounded, oblique; 7 and 8 approximated at base; pale yellow-ochreous; veins more or less suffused with light crimson, especially on upper margin of cell and beyond its angles; base of costa crimson: cilia whitish-ochreous tinged with crimson (defective). Hindwings

with 3 and 4 connate, 5 parallel, 6 and 7 short-stalked, cell between 5 and 6 limited by fork of parting-vein; whitish-ochreous suffused with pale crimson-rosy; cilia ochreous-whitish tinged with rosy.

CAPE COLONY, George (Wilman); two specimens.

GLYPHIPTERYX STELUCHA, n. sp.

♀: 11 mm. Head, antennæ, and thorax dark bronzy-fuscous. Palpi white with four black rings, second joint with rough projecting scales beneath, apex black in front. Abdomen dark fuscous, beneath banded with yellowish-white. Forewings elongate, posteriorly dilated, costa gently arched, apex obtuse, termen sinuate, rather oblique; 7 and 8 separate; dark bronzy-fuscous, on posterior half shining bronzy-orange-ochreous; a rather narrow direct transverse ochreous-whitish fascia at $\frac{1}{3}$, attenuated on costa; six parallel rather oblique violet-golden-metallic streaks running from white dots on costa, edged anteriorly with dark fuscous, first at $\frac{1}{3}$, second longest, reaching half across wing, fourth very small; violet-golden-metallic dots beneath extremities of fifth and sixth, latter terminal; erect violet-golden-metallic streaks from $\frac{2}{5}$ of dorsum and tornus, former limiting the dark fuscous area, space between and beyond these longitudinally streaked with black; a violet-golden-metallic mark along lower part of termen: cilia orange-ochreous mixed with dark fuscous, tips whitish, with a subapical whitish indentation (defective). Hindwings dark fuscous, costal area whitish from base to $\frac{2}{3}$; cilia dark fuscous, with blackish basal shade.

CAPE COLONY, King William's Town (Lightfoot); one specimen.

GYPSOSARIS, n. g.

Head rough-haired; ocelli present; tongue long. Antennæ $\frac{3}{5}$, in ♂ shortly ciliated, basal joint moderate, with pecten of thin scales. Labial palpi moderately long, obliquely ascending, clothed with loose rough projecting scales throughout to apex. Maxillary palpi very short, filiform, porrected. Posterior tibiæ loosely haired. Forewings with 1b furcate, 2 from angle, 7 to termen, 8-10 approximated, 11 from middle, secondary cell well-defined. Hindwings almost 1, elongate-ovate, cilia $\frac{4}{5}$; 2-7 separate, lower branch of internal vein continuous with 4, 5 and 6 approximated on each side of upper branch.

GYPSOSARIS CONIATA, n. sp.

♂. 13-14 mm. Head, antennæ, and thorax white. Palpi grey, internally white. Abdomen grey, anal tuft whitish. Forewings

elongate, costa gently arched, apex round-pointed, termen straight, very oblique; white; some small scattered light ochreous-yellowish spots, apparently irregular and variable in position: cilia white. Hindwings light grey; cilia whitish-grey.

CAPE COLONY, Capetown, Kalk Bay, in February (Lightfoot); two specimens.

PLUTELLA BALANOPIS, n. sp.

♂. 15 mm. Head whitish, sides of face pale ochreous. Palpi brownish-ochreous sprinkled with dark fuscous, tuft of second joint short. Antennæ greyish-ochreous with several whitish bands. Thorax pale ochreous, suffused with dark fuscous irroration except on a broad dorsal stripe. Abdomen whitish-ochreous mixed with fuscous. Forewings elongate, narrow, costa gently arched, apex round-pointed, termen faintly sinuate, oblique; whitish-ochreous, suffusedly mixed with light brownish; a rather dark fuscous suffusion extends over whole wing, except a small elongate patch in centre of disc, and undefined costal and dorsal streaks which disappear towards base; costal half of wing irregularly dotted with dark fuscous; a narrow elongate ochreous-white spot in disc at $\frac{1}{5}$, partially edged with dark fuscous; a cloudy blackish-fuscous spot at apex: cilia whitish-ochreous, with two dark fuscous shades. Hindwings with 3 and 4 closely approximated at base, 5 and 6 approximated towards base; pale grey; cilia whitish-grey.

CAPE COLONY, Clanwilliam, in November (Lightfoot); one specimen.

TINEIDÆ.

OPOGONA SCAPHOPIS, n. sp.

♂ ♀. 14-15 mm. Head pale ochreous-yellow, crown purplish-fuscous. Palpi fuscous, internally whitish-ochreous. Antennæ pale yellowish. Thorax ochreous-yellow. Abdomen light greyish-ochreous. Forewings lanceolate, apex rather prolonged, acute; clear pale ochreous-yellow; a slender dark fuscous streak along basal fifth of costa; a narrow purplish-bronzy-fuscous streak edged anteriorly with black from $\frac{2}{3}$ of dorsum along termen to apex, thickest on tornus and thence very finely attenuated to apex: cilia gray, slightly purplish-tinged, on costa pale yellowish. Hindwings pale shining prismatic violet-brassy-grey; cilia light greyish-ochreous.

CAPE COLONY, Port Elizabeth, bred in April from larvæ boring stems of Aloe (Lounsbury); two specimens.

TINEOLA PURPUREA Stt.

(TINEA PURPUREA Stt. Trans. Ent. Soc. Lond. (n.s.) V, 221.)

♂. 21 mm. Head orange. Labial palpi bronzy-fuscous, towards tip ochreous-whitish. Maxillary palpi very short, loosely scaled, dark fuscous. Antennæ whitish. Thorax purplish-bronzy-fuscous. Abdomen light bronzy-fuscous. Forewings elongate, narrow, costa slightly arched, apex round-pointed, termen extremely obliquely rounded; all veins separate; bronzy tinged with purple towards costa: cilia light bronzy. Hindwings with 3 and 4 approximated at base; bronzy, strongly suffused with purple, especially posteriorly; cilia pale whitish-grey.

The specimen which I have described is apparently Stainton's original type; it bore a label with the name *Tinea purpurea*, n. sp. in Stainton's own writing, and the correct locality-label, Knysna, and Stainton only mentions one specimen. Stainton's description, whilst fully agreeing, is in some respects incomplete, and I therefore took the opportunity of redescribing it. It is very like *Tinea ænopis* Meyr., but is larger, narrower-winged, and more brightly coloured; *ænopis* is a true *Tinea*, with folded maxillary palpi.

SCYROTIS, n. g.

Head loosely haired; ocelli present; tongue absent. Antennæ $\frac{2}{3}$, in ♂ moderately ciliated, basal joint rather large, with strong pecten of long scales. Labial palpi short, porrected, second joint loosely scaled, terminal joint tolerably pointed. Maxillary palpi very short, porrected, loosely scaled. Posterior tibiæ clothed with long hairs above. Forewings with 1b simple, 2 from $\frac{5}{6}$, 3 and 4 approximated, 5 absent, 7 to termen, 8-10 rather approximated, 11 from before middle. Hindwings under 1, elongate-ovate, cilia nearly 1; veins all separate, 5 and 6 rather approximated.

SCYROTIS ATHLETA, n. sp.

♂ ♀. 13-15 mm. Head and thorax ochreous-whitish irrorated with fuscous. Palpi ochreous-whitish mixed with dark fuscous. Antennæ fuscous obscurely ringed with ochreous-whitish. Abdomen pale fuscous, segmental margins ochreous-whitish. Forewings elongate, costa moderately arched, apex obtuse, termen very obliquely rounded; pale greyish-ochreous or ochreous-whitish, partially tinged with fuscous, distinctly irrorated with dark fuscous;

indications of an undefined darker discal spot at $\frac{2}{3}$; very undefined dots of dark fuscous irroration round posterior part of costa and termen: cilia ochreous-grey-whitish with two fuscous shades, towards base sprinkled with dark fuscous. Hindwings light fuscous; cilia pale greyish-ochreous tinged with fuscous.

CAPE COLONY, Table Mountain (Lounsbury); four specimens. Mr. Lounsbury sends the following particulars of the very interesting and quite exceptional larval habits of this insect: "The larvæ produce what are known in these parts as 'Jumping Beans'; they are formed in the leaves and young stems of *Rhus glauca*; when the larva is full-grown the 'Bean' separates from the plant-tissue that confines it, and this tissue ruptures irregularly; then by the persistent struggles of the larva the 'Bean' becomes dislodged and falls to the ground, where it jumps about in a striking manner; sometimes in the case of caged specimens this jumping continues for six weeks or more. The 'Beans' are found during November, but pupation does not seem to take place till February, the moths emerging towards the end of March. The insect pupates inside the 'Bean,' and the moth escapes through a neatly cut circular aperture at one end. The larva is subject to the attack of two or more parasites. I am, I believe, the first to rear this moth, though the 'Jumping Bean' is well known."

Mr. Lounsbury sent also examples of the "beans" themselves; as explained above, these are not really beans or fruits, and must not be compared with the so-called "jumping beans" from Mexico; they are regular oval cases, receptacles, or cocoons, of a pinkish-ochreous colour, measuring about 6 mm. \times 4 mm., with a finely vermiculated surface, and show no silk in their construction, being apparently composed of a substance deposited in a semifluid condition, and subsequently hardened by drying into a thin shell or wall. When the moth is to emerge, one end of this is sliced off quite neatly and evenly, perhaps by some special apparatus in the pupa. The whole phenomenon is very singular, and needs further investigation and explanation.

MELASINA STIBARODES, n. sp.

δ ♀ . 21-25 mm. Head, palpi, thorax, and abdomen densely hairy with mixed fuscous and whitish hairs; head small, palpi short, thorax and abdomen broad and robust. Antennæ fuscous, in δ lined with white, pectinations in δ 4. Forewings elongate, moderate, slightly dilated, costa gently arched, apex rounded, termen obliquely rounded; 7 and 8 sometimes stalked; pale

fuscous suffusedly mixed with dark fuscous; markings in ♂ pale fuscous, slightly whitish-mixed or not paler than ground colour, indistinct, in ♀ white, distinct; two sometimes confluent spots at base, a sometimes interrupted fascia at $\frac{1}{3}$, a transverse spot from middle of costa, and a curved series of four spots from $\frac{2}{3}$ of costa to dorsum before tornus; a series of small spots round posterior portion of costa and termen; two or three variable and irregularly placed dots in disc besides these: cilia fuscous, in ♂ sprinkled with whitish, in ♀ barred with white. Hindwings with 5 and 6 sometimes stalked; in ♂ rather dark fuscous, in ♀ whitish-fuscous finely irrorated with dark fuscous; cilia whitish-fuscous

CAPE COLONY, Capetown, in March; three specimens, bred from larvæ. Specially distinguished by the unusually robust thorax and abdomen, small head, and dense hairy clothing, which give it a bombycoid appearance; the neuration is remarkably variable, veins 7 and 8 of forewings and 5 and 6 of hindwings being separate, short-stalked, or long-stalked in different specimens or even in different wings of the same specimen. The larval case is remarkably Psychid in character, very large, 32 mm. in length; cylindrical, of tough silk closely covered with small pieces of stick (apparently twigs and thorns) arranged transversely, with the ends shortly projecting.

MELASINA CIRCOPHORA Meyr.

The larval case of this species is 18 mm. long, cylindrical, of silk covered with slender pieces of stick arranged longitudinally, each piece being as long as the case.



9.—*On the Milk Dentition of Orycteropus.*—By R. BROOM, M.D.,
D.Sc., C.M.Z.S.

THERE is probably at present no living mammal whose affinities are more in doubt than *Orycteropus*, the Aard Vark of the South African farmers. Though placed among the Edentates, it has long been recognised that it has very little affinity with the typical American forms ; and while it seems to resemble more closely the Old World *Manis*, it is doubtful if the slight resemblance indicates a relationship.

In 1890 Oldfield Thomas made an important advance in our knowledge of *Orycteropus* by his discovery of milk teeth in two young specimens in the British Museum. "Each of these specimens has a complete, although rudimentary, set of milk teeth, extending the whole length of the maxillary bones above, and along a rather shorter portion of the mandible below. None, however, are observable in the premaxillæ, or in the corresponding anterior part of the mandibles. The teeth are all quite minute, and it is very doubtful whether they would ever have cut the gum."

"In the upper jaw there appear to be normally no less than seven milk teeth. Of these the most posterior is by far the largest, has a rudimentary crown, and two distinct roots, anterior and posterior. The second, proceeding forwards, is far smaller, and is simple and styliform. The next, the third from the back, is also simple, but is far larger in section, and its base is not closed up in either of the specimens ; on this account there seems to be just a possibility that this particular tooth is not a milk tooth at all, but only the tip of one of the smaller anterior permanent teeth, which it resembles closely in size ; on the other hand, however, its complete calcification is in marked contrast to the soft condition of the other permanent teeth, and therefore it seems safer for the present to call it a backward milk tooth rather than a precocious permanent one."

"In front of the three posterior teeth there are normally four very minute styliform ones, similar to, and equidistant from each

other, the most anterior placed close to the premaxillo-maxillary suture. . . . On one side of one of the specimens, however, there is an additional minute tooth near the suture, so that there are eight, instead of seven milk teeth present in the jaw."

"Below, . . . the germs of the permanent teeth are distinguishable as well as the milk teeth. The latter are here apparently only four in number; the posterior one, as in the upper jaw, is large and two-rooted. . . . The three teeth in front of this large one are minute, pointed, about equidistant from one another. . . . Between the two most anterior of these teeth there is a larger one, equally elevated in the jaw with them, but as yet quite uncalcified, and therefore no doubt merely the tip of one of the small anterior permanent teeth."

The two specimens examined by Oldfield Thomas were respectively 14 and 18 inches long. Through the kindness of Dr. Périn-guey, of the South African Museum, I have had an opportunity of examining the head of a newly-born *Orycteropus afer*. The whole length of the animal was about 34 inches, and the skull measured $5\frac{1}{2}$ inches. My specimen is thus about twice the size of those examined by Thomas. Being anxious to compare the condition of the teeth with that in the specimens studied by Thomas, I clarified the jaws in Xylol, and have been fortunate in discovering the dentition in a most interesting condition.

In the upper jaw there are in front three small teeth which I believe to be milk incisors. Two of them are certainly incisors, and the third most probably. All three are distinctly calcified. The most anterior, which lies near the middle of the alveolar portion of the premaxillary bone, is so small that it can only be seen with difficulty by the naked eye. The second and third are large enough to be easily seen without a lens. They are rather nearer to each other than is the second to the first. The third is practically in the suture between the premaxillary and the maxillary bones, but is apparently a premaxillary tooth and thus an incisor. All three incisors are small, irregular, triangular calcifications. They are evidently extremely degenerate, and probably have been considerably absorbed.

Behind the third incisor and close to it, but distinctly belonging to the maxillary bone, is another small degenerate tooth, which I take to be the milk canine.

About 3 mm. behind this a very small degenerate tooth, which is apparently the first milk premolar. About 4 mm. further back is a second milk premolar, larger and broader than the first and with a

distinct but obtuse point. The third milk premolar is situated 9 mm. behind the second. It is also broad and obtusely pointed, but less than 1 mm. in antero-posterior length. The fourth milk premolar, which lies about 6 mm. behind the third, is relatively of large size, measuring about $1\frac{1}{2}$ mm. in antero-posterior length. It appears to have some indications of two roots. About 3 mm. behind it is a very small fifth milk premolar, and 7 mm. behind the fifth is a fairly large sixth milk premolar which has an antero-posterior measurement of 2 mm.

Underneath the third milk premolar there is apparently a minute permanent tooth developing, but it is not yet calcified. Under the fourth milk premolar is a calcified permanent tooth of about equal size. Partly under but mainly behind the small fifth milk premolar is a large developing permanent tooth, which has an antero-posterior measurement of between 4 and 5 mm. Under the sixth milk premolar is a permanent tooth rather smaller than that in front of it. There is evidence of at least four other teeth of the permanent set behind the sixth milk premolar.

In the lower jaw there are also three milk incisors, all of which are very small, but all calcified. The first lies near the front of the jaw and about 2 mm. from the symphysis. The third is 6 mm. behind the first, and the second between the others but nearer to the third. About 4.7 mm. behind the di^3 is a very minute canine. When the jaw is in position this canine lies a little in front of the upper milk canine.

About 5 mm. behind the canine is a rather larger tooth, doubtless dp^1 . 5.5 mm. behind this is the second milk premolar. This dp^2 is a pointed flattened tooth directed somewhat forwards. It has an antero-posterior measurement of nearly 1 mm. About 8 mm. further back is situated dp^3 , a tooth nearly similar in size and shape. The fourth milk premolar is about 3 mm. behind dp^3 . It is appreciably longer than the anterior teeth, but not much wider. It has a distinct pulp cavity. About $2\frac{1}{2}$ mm. behind it is a smaller obtusely pointed dp^5 . And 6 mm. behind dp^5 is a large dp^6 . This last tooth is the only milk tooth in the lower jaw of fairly large size. It measures a little over $1\frac{1}{2}$ mm. in antero-posterior length.

Immediately behind dp^2 a developing permanent tooth can be seen, and between dp^3 and dp^4 a second permanent tooth. Between dp^4 and dp^5 there seems to be a third, but it is not very distinctly seen. Immediately behind dp^5 is a large pointed permanent tooth, and below dp^6 is a developing fifth permanent tooth. Behind this there are evidences of apparently three other permanent teeth.

The teeth described and figured by Thomas in the upper jaw are apparently dc , dp^1 , dp^2 , dp^3 , dp^4 , dp^5 , and dp^6 . In his specimen, as in mine, it is dp^4 and dp^6 which are best developed. The little tooth which he observed on one side of one of the specimens near the premaxillo-maxillary suture is evidently di^3 . The four milk teeth he found in the lower jaw clearly correspond to the teeth I call dp^3 , dp^4 , dp^5 , and dp^6 .

The full dentition of *Orycteropus* may be represented diagrammatically as follows:—

Incisors.			Canines.	Premolars.					Molars.			
				?	3	4	5	6	1	2	3	
1	2	3	1	1	2	3	4	5	6			
<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>			
				2	3	4	5	6	1	2	3	

While the discovery of this full set of milk teeth, including distinct incisors, confirms the opinion that has been growing of late years that *Orycteropus* is not a true Edentate, it does not by any means definitely decide for us where else it ought to be placed.

Thomas, after showing reason for removing it from the Edentata, adds: "But if *Orycteropus* is not genetically a near relation of the Edentata, we are wholly in the dark as to what other Mammals it is allied to." Kitchen Parker, from the examination of the developing skull, was specially impressed by its apparent affinities with Marsupials and the lower Insectivores. Elliot Smith, in his recent memoir on "The Brain of the Edentata," says: "The features of the brain conclusively show that *Orycteropus* is no more nearly related to the American forms [Edentates] than the Sheep is to the Dog." He points out a number of resemblances of the brain to that of the Pig and Musk deer, and thinks "in all probability *Orycteropus* became specialised from the generalised type at about the same time as the Ungulata," and that it may be a branch from the Subungulate stem.

While fully aware of the fact that many mammals have the number of molars largely in excess of that found in their ancestors, I feel inclined to think that there is some phylogenetic reason for *Orycteropus* having a definite number, and that its ancestor had a dental formula of $i \frac{3}{3} c \frac{1}{1} m \frac{3}{3}$. The evidence of six premolars would seem to remove it from any close relationship with other living forms, and to suggest the possibility of its being related to some of the Mesozoic mammals, a number of which have probably an identical dental formula.

10.—*New or little known South African Mutillidæ (Hymenoptera).*
—By L. PÉRINGUEY, D.Sc., F.E.S.

GEN. PSAMMOTHERMA, Latr.,

PSAMMOTHERMA TRANSVAALICA, n. sp.

♂. Black, with the antennæ and the tegulæ only red, in the former however the first and the second joints are black; abdomen nearly sessile, the first segment with a narrow apical fringe of sub-flavescent hairs with a white tinge, second segment with an equally narrow apical border, third segment completely covered by a band of the same colour.

It is not necessary to repeat here the description of *P. flabellata*, Fab., with which the present species is intimately connected. It differs however from it, provided the South African examples with black antennæ and pro- and mesonotum are the same species, by the brick-red antennæ, the two basal joints of which only are black; the entirely black thorax with the exception of the tegulæ which are also brick-red; the apical pubescent bands of the first, second, and third abdominal segments is also more yellowish than in what I take to be the Cape Colony form of *P. flabellata*. I may point out that in the examples from the latter locality the apical white border of the second segment disappears towards the middle.

Length 14 mm.; width (wings expanded) 25 mm.

Hab. Transvaal (Waterberg, Zoutpansberg), Transvaal Museum.

GEN. MUTILLA, Fabr.,

MUTILLA (TRICHOABIODES) PERINGUEYI, Andr.,

Zeitsch. f. Hym. und Dipterol., 1902, p. 23.

♀. Black, with the thorax red; abdomen sub-sessile, elongate ovate, basal segment with a broad, apical white band, second and third segments with a broad, white, apical band widely interrupted in the centre. Upper side of head and prothorax not clothed with an appressed pubescence, but moderately bristling with black, and, occasionally, white setæ, abdomen somewhat densely setaceous.

Head nearly quadrate, eyes set nearer to the insertion of the mandibles than to the posterior margin, the space behind the eyes being long, straight, and the angle quite distinct, the basal margin itself is straight, tubercles large, transverse, third antennal joint three times as long as the second and thickening at tip; thorax very long, convex on the mesonotum, greatly sloping behind, broadly, deeply, and regularly foveate reticulate, broadest across past the suture of the pronotum, strongly bi-sinuate laterally, and thus bulging in the middle; between the pro- and the metanotum the latter is strongly sloping, and the lateral margin only slightly serrate; abdomen sub-sessile, first segment very short at the base, bi-dentate there, then dilated but not as broad as the anterior part of the second segment, strongly carinate underneath, the carina truncate behind in the manner of the ♂; all the segments are deeply punctate, the punctures on the second one deeper and more scattered than on the others, the ultimate segment is closely punctate, set with dense greyish hairs, and has no pygidial area.

Length 9 mm.; width $3\frac{3}{4}$ mm.

Hab. Natal (Durban), C. N. Barker.

MUTILLA (RHOPALOMUTILLA) TONGAANA, n. sp.

♂. Black, with the dorsal part of the thorax and the tegulae ferruginous red, abdomen petiolate, segments with the exception of the first and last having a narrow apical band of a dense sub-flavescent white pubescence. Head and thorax clothed with a moderately dense pubescence, greyish white on the anterior part of the head, black on the posterior and the anterior part of the thorax but white on the scutellum and along the metanotum, and almost purely white on the abdomen and legs; wings entirely light fuscous.

Head broader than long, and with the vertex produced towards the base in a conical gibbosity set behind the ocelli; broader than the thorax and prolonged behind the eyes which are deeply incised inwardly, posterior margin with the angles obtuse but distinct, and slanting on each side towards the centre; only one ocellus distinct in the two examples which I have examined; front and vertex irregularly foveate reticulate; second antennal joint less than one-third the length of the third; upper part of thorax from the anterior border of the pronotum to the apex of the scutellum hexagonal and very roughly pitted, suture of pronotum well defined, mesosternum with few median grooves, scutellum greatly developed, in the shape of a broadly truncate cone, briefly carinate transversely at apex,

vertical there, and overhanging the base of the metanotum which is slanting, rounded and carinate laterally, bears four distinct longitudinal keels in the centre, and is irregularly and not deeply punctate; tegulæ closely punctate; first abdominal segment strongly petiolate, covered with deep foveolate punctures and having underneath a weak keel, second segment ampliate ovate, covered with very closely set, round, simple punctures, these punctures are coarser on the other segments, and become very elongated on the last joint which is entirely covered with them; wings with the radial cell large and not truncate at apex, two cubital closed cells and a third weakly indicated, first recurrent nervure reaching the middle of the second cell, if the third were better defined, the second recurrent, also ill-defined, would reach its external edge; tibial spurs white.

Resembles in some characters *R. anguliceps*, Andr., but is a distinct species.

Length 10–11 mm.; width (wings expanded) 17–19 mm.

Hab. Mozambique (Amatongas), P. A. Sheppard.

MUTILLA (DASYLABRIS) KANDLA, n. sp.

♂. Black, with the wings very deeply infuscate from base to apex, clothed with a dense appressed pubescence silky white on the front and vertex, under side, and legs, black on the rest of the body and interspersed with very numerous, somewhat dense, long setæ of the same colour; abdomen sub-petiolate, first and second segments with a narrow silky white pubescent band, set on the apical border, third segment with a broad similar band interrupted in the centre but not along the edge, fourth segment with a small, lateral white patch, and a conspicuous sub-quadrangle one in the centre of the two segments following, apical one without any white pubescence or white hairs. Head deeply and somewhat coarsely foveolate punctate, little broader than the apex of the thorax, with the base very slightly arcuate and the corners moderately rounded, space behind the eyes moderately long, eyes not emarginate inwardly; second antennal joint about half the length of the third; thorax closely punctate on the upper anterior part, pronotum with the anterior border very slightly arcuate backwards and a little amplified diagonally towards the tegulæ, the suture with the mesosternum conspicuous, carinate; mesosternum without longitudinal keels; scutellum divided from the mesosternum by a deep transverse groove, short, very sloping, and having on each side of the basal part a sharp conical horizontal tubercle; the strongly sloping meta-

sternum is rounded laterally, covered with deeper and broader foveæ than even the scutellum, and is without longitudinal keels; first abdominal segment somewhat short, the petiole angular laterally, plainly carinate on each side underneath, and having in the centre a very sharp well-developed keel, it is truncate at apex and covered above and below with deep and closely set punctures; on the second segment these punctures are broader and more scattered on both the upper and lower sides, those of the other segments are small and very closely set; apical segment with a smooth longitudinal median line not reaching the apex; wings very dark fuscous, radial cell truncate at apex, stigma very small, three closed cubital cells and two recurrent nervures, the first uniting before the middle and the second at the apex of the second and third cubital cells; tibial spurs black.

Length 16 mm.; width (wings expanded) 28 mm.

Hab. Mozambique (Beira), P. A. Sheppard.

MUTILLA (DASYLABRIS) KARROOA, n. sp.

♂. Black, clothed with a very dense and very long setose black pubescence turning to greyish on the under side of the abdomen, and less distinctly so on the anterior part of the pronotum; abdomen sub-sessile, ovate, second segment with a narrow apical border of white pubescence; wings sub-hyaline at base and infuscated for the greater part of the length.

Head broader than long, deeply and very closely pitted, eyes not emarginate inwardly, about equi-distant from the insertion of mandibles and from the hind margin which is straight with the angles slightly rounded; ocelli very distinct; second antennal joint one-third shorter than the third; thorax as broad in front as the head, pronotum with the anterior border straight and the angles distinct, slightly amplified diagonally towards the tegulæ which are large, convex, and less broadly pitted than the rest of the thorax, the suture with the mesonotum is indistinct, the mesonotum itself has no keel or carinule; the scutellum is broadly arcuate, very sloping, but somewhat convex and densely hairy black; the metasternum, which is short, follows the angle of the slope of the scutellum, and is broadly pitted, rounded laterally, and simple; abdomen ampliate ovate, first segment as broad as long on the upper side and with the peduncle very slanting, carinate on each side underneath and having a very sharp median keel all along the length; it is less deeply and broadly pitted than the ampliate second

segment the slightly elongated punctures of which are nearly contiguous, the punctuation of the other segments is finer, but the last segment is closely punctate, not striate; spurs of tibiæ black; wings infusate but more hyaline towards the base, radial cell truncate at apex, stigma very small, three closed cubital cells and two recurrent nervures, the first of which abuts slightly before and the second after the middle of the second and third cells respectively.

Length $9\frac{1}{2}$ mm.; width (wings expanded) $16\frac{1}{2}$ mm.

Hab. Cape Colony (Matjesfontein), R. M. Lightfoot.

MUTILLA (MYRMILLA) BIDENTATA, ♀, Andr.

♂. Black, with the whole upper side of the thorax ferruginous red but with the frontal edge of the pronotum, the sides and the posterior part of the metanotum slightly infusate; abdomen nearly sessile, first segment with an apical median silky white sub-triangularly ovate patch, second segment with an ovate median whitish yellow patch situated at a short distance from the apex but not reaching it, third segment completely covered with white pubescence, fifth and sixth pubescent white in the centre; no wings.

Head one-third broader than long on the vertex, slightly narrowed behind the eyes with the basal margin nearly straight but with the angles slightly obtuse; eyes large, bulging, not incised inwardly, the space behind the eyes equal in length to that of the eyes; whole surface covered with sub-reticulate punctures with sub-longitudinal slightly raised walls in the central posterior part of the vertex; antennæ somewhat slender, the first joint cylindrical, strongly curving outwardly, second joint very small, third longer than the fourth, and a little more than three times as long as the second; the head has no appressed pubescence except at the base of the mandibles, and is moderately bristling with black setæ above and white ones on the sides; pronotum short, somewhat arcuate in front with the angles sharp and the sides parallel, but it is slightly narrower laterally at the suture than at the apex, posterior angles sharp; mesonotum nearly parallel but narrower than the pronotum at apex; scutellum broadly arcuate, transverse; metanotum gradually ampliate, rounded from the base, broader across the middle than the anterior part of the pronotum, very convex on the upper side, provided at the top of the declivity which is vertical with two long horizontal cylindrical spines set respectively at an equal distance from the strongly rounded lateral angle of the declivity and of the centre; the pronotum and the scutellum are foveolate punctate;

the punctures on the mesonotum are divided by longitudinal sharp walls, the metanotum is broadly foveate, and the whole thorax bristles with long, stiff black hairs intermixed with a few greyish ones turning to white along the apex of the metanotum; abdomen broadly ovate, first segment nearly as broad at apex as the base of the second, almost truncate at the base and with the peduncle very short, the keel underneath is short and not truncate at tip; second abdominal segment impressed on each side of the base, the two impressions divided by a longitudinal short carinule; the segments are irregularly punctured, the punctures being round, simple, but on the second segment these punctures are greatly elongated and form a moderately distinct striolation; tibiae with two or three spines outwardly; spurs white.

Length 8 mm.; width 3 mm.

Hab. Mozambique (Amatongas), P. A. Sheppard.

MUTILLA (MYRMILLA) RHODESIA, n. sp.

♂. Antennæ fuscous rufescent; head ferruginous red but deeply infuscated between the eyes; thorax strongly contracted laterally, wholly red; abdomen black with the peduncle of the first segment reddish, on the hind border of this segment is a transverse, moderately broad silky white band which does not reach quite the sides, and is almost connected with a somewhat ovate central patch reaching from the edge to about the central part of the second segment which bears also at the apex a somewhat narrow band of silky white pubescence not reaching quite the sides and somewhat broadly interrupted in the centre; the third segment has a broad basal band of the same colour covering two-thirds of the width, and narrowly interrupted in the centre; legs fuscous black, but rufescent at the base, tarsi somewhat rufescent, spurs very long, white.

Head quadrate, as broad as long, the sides behind the eyes nearly straight, and the angles very slightly rounded, distinctly wider than the widest part of the prothorax, deeply and coarsely punctate and covered with a short yellowish white pubescence with which are intermixed black erect hairs, along the base is a fringe of white ones; eyes large, about equi-distant from apex or base; prothorax twice as long as its widest part, deeply punctate rugose, covered with an appressed, slightly yellow pubescence, and bristling with long erect white hairs; anterior border of pronotum arcuate with the outer angles strongly rounded, separated from the mesonotum which is strongly contracted laterally; no wings, only a small tubercle on

each side, scutellum transverse, metanotum somewhat convex, broader than the pronotum, separated from the scutellary region by a deep transverse groove, almost vertically truncate and with a row of small tubercles on the edge of the declivity; abdomen ovoid, basal segment pedunculate and then broadly dilated, but with the posterior border not as broad as the fore border of the second, and without keel underneath; all the segments bristle above and under with silky white erect hairs, the first three are aciculate striolate, the others are somewhat closely punctate; legs long, very hairy, hind tibiæ with five spines outwardly.

Length $6\frac{1}{2}$ mm.; width $1\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Plumtree), Rev. J. A. O'Neil.

MUTILLA (ODONTOMUTILLA) BECHUANA, n. sp.

♂. Black, with a slight steel-blue tinge on the upper side, pronotum, mesonotum, scutellum and tegulæ ferruginous red; abdomen sessile, third joint with a broad silky white band broadly interrupted in the centre; body bristling with black hairs, which on the metanotum and the first basal abdominal segment are white.

Head closely foveate, transverse, being nearly twice as broad as long, the base straight and the angles quite sharp, equal in width to the anterior border of the pronotum; the eyes are large, deeply, arcuately incised in the inner part, the space behind them long; antennæ robust, the tubercles small, second joint very short, third also short; thorax almost parallel with the anterior border of the pronotum straight, moderately angular and slightly narrower than the apex of the metanotum, the suture carinate; the somewhat convex mesonotum bears no longitudinal groove; the scutellum is transverse, parallel, but with the apical angles horizontally dentate; the strongly declivous metanotum is sub-parallel laterally, being slightly wider at the apex than at the base, and the hind angles are distinctly aculeate; it is broadly reticulate while the remainder of the thorax is roughly foveate punctate, the tegulæ are punctulate and very hairy; abdomen sessile, the first segment fitting against the base of the second, the keel underneath is short and sharp, it is closely and roughly punctured like the posterior part of the second segment the anterior part of which is conspicuously foveate reticulate; the other segments are roughly aciculate, the last one, however, is nearly strigillate punctate without any pygidial area; spurs of the tibiæ deeply fuscous; wings fuscous, slightly steel-blue in the fore part, stigma very small, sub-quadrate, radial cell long, truncate at tip, two closed cubitals, the third one only partly closed at the

tip, one recurrent nervure received before the middle of the second cell, no traces of a second recurrent nervure.

Near *M. cleopatra*, Pér.

Length 11 mm. ; width (wings expanded) $21\frac{1}{2}$ mm.

Hab. Bechuanaland (Vryburg), E. Jones.

MUTILLA DALILA, n. sp.

♀. Black, with the whole thorax ferruginous red ; head, thorax and abdomen, under side and legs bristling with long dense hairs black on the upper side, greyish white underneath ; abdomen nearly sessile, elongate ovate, first segment with an apical yellow silky band interrupted sub-triangularly in the centre, second and third segments with a similar but slightly broader band also interrupted in the centre, that of the third segment a little more broadly so than that of the second, but both are continued underneath and are almost as dense as on the upper side.

Head very little broader than the anterior part of the pronotum, sub-quadrate, deeply reticulate foveate, space behind the eyes equal to the length of the eye ; second joint of antennæ short, about one-third of the length of the fourth ; mandibles very long ; thorax hexagonal, very little longer from the apex to the declivity of the metanotum than broad, strongly crenulate and bi-sinuate laterally and triangularly dilated towards the middle ; the pronotum is arcuate with the angles acute and the space between the lateral triangular part and the sharp angle of the declivity of the metanotal part which is roundly sloping with the sides sub-crenulate is plainly emarginate ; the surface of the whole thorax is regularly foveate punctate ; basal abdominal segment short, fitting against the base of the second but not quite as broad, covered like the second with elongate foveate punctures, on the second segment these punctures are very elongated, their walls forming a longitudinal striation ; on the other segments, except the last, the punctures are simpler, the last segment is longitudinally strigillate all over and is quite hairless ; the very bristly tibiæ have each seven double series of strong spines ; the keel under the final segment is slightly bi-sinuate and truncate in front.

The shape of the head and prothorax recall that of *M. (Stenomutilla) capicola* and *beroë*, Pér., but the prothorax is more serrate laterally. It does not, however, belong to the sub-genus *Stenomutilla*, owing to the abdomen being non-petiolate.

Length $13\frac{1}{2}$ mm. ; width 4 mm.

Hab. Transvaal (Lydenburg), Krantz.

MUTILLA GAZA, n. sp.

♀. Totally black, with the base of the femora and knees, the antennal tubercles and the second to fourth antennal joints fuscous rufescent; abdomen sub-sessile, second segment with an elongated, median, not dense patch of flavescent greyish hairs reaching from the anterior border to about the middle, and a moderately broad, denser band of the same colour along the apical border, the last segment has a bunch of greyish sub-flavescent, long hairs on each side of the upper part. The head and prothorax are covered with a very short and not easily distinguished black pubescence and bristling with long, black setæ; the abdomen is equally setose, but the setæ are greyish white, interspersed with them are a few black ones.

Head longer than broad, eyes large, horizontal, very bulging, reaching behind almost to the broadly rounded border; antennal tubercles elongated, rounded, second antennal joint very short, being half the length of the third which is also short; whole surface closely and regularly pitted; prothorax very slightly sloping on each side on the anterior border of the pronotum without however being arcuate, and with the outer angles distinct, straight laterally but gradually narrowing towards the vertical declivity of the metanotum where it is about one-fifth narrower than at the apex; it is moderately convex, with the metanotum abruptly declivous and simple, and more widely and somewhat more irregularly pitted than on the head; basal segment with an uninterrupted keel underneath; all the segments are very closely punctate, the punctures on the second segment being wider than on the others, and there are no traces of striation; hind tibiæ with a double row of three spines, spurs whitish.

Length $6\frac{1}{2}$ mm.; width $1\frac{1}{4}$ mm.

Hab. Mozambique (Amatongas), A. P. Sheppard.

André has attributed to his *Rhopalomutilla clavicornis* (Zeitsch. f. Hym., 1901, p. 323) a ♂ which I suspect to be that of *M. gaza*. Both *gaza* ♀ and *clavicornis* ♂ were captured in the same locality and the same day by Mr. Sheppard. It does not follow, however, that because "captured together" the sexes were actually *in copulâ*.

MUTILLA AMALITA, n. sp.

♀. Body short and somewhat massive; black, the dorsal part of the thorax with the exception of the infuscate anterior and posterior

angles red; antennæ and legs brick-red; it is covered with a short sub-flavescent pubescence and with somewhat sparse greyish and black bristles; the abdomen is sessile, the second has a median basal flavescent ovate patch and a somewhat narrow apical fringe of whitish flavescent pubescence slightly dilated as a triangle in the centre, the other segments have a similar but very narrow fringe, apical segment without any distinct pygidial area.

Antennæ thick, antennal tubercles elongated, rounded, second joint less than half the length of the third; head transverse, covered with contiguous round foveolate punctures, eyes large, long, set near the hind part the angles of which are much rounded; thorax twice as long as broad, nearly straight except for a slight inward curve in front, and with the anterior angles distinct, somewhat convex in the anterior and median part, parallel for about two-thirds of the length, and with two distinct lateral constrictions there, metanotum amplified, bluntly rounded laterally, vertically declivous and having on the edge of the declivity a median, sharp tubercle, the dorsal part and also the pleuræ are covered with round foveolate punctures; abdomen amplified ovate, quite sessile, the basal segment being invisible from above, and simple underneath; the second segment which is as broad as long is covered with contiguous round punctures, the other segments are also closely punctate; hind tibiæ with a double series each of three spines.

Length $3\frac{1}{2}$ mm.; width $1\frac{1}{2}$ mm.

Hab. Mozambique (Beira), P. A. Sheppard.

In the only example of this species seen by me the apical border of the second segment on which the narrow wide band extends is rufescent.

MUTILLA MATOLA, n. sp.

♀. Black, with the thorax red and the legs fuscous rufescent; abdomen sub-sessile or very briefly pedunculate, the first segment bears a broad apical band of silky white pubescence, and the second an apical slightly flavescent band narrowly interrupted in the centre, reaching the sides but narrowing gradually towards that part; the third segment has a similar band but more broadly opened in the centre, this band is indistinct on the other segments, and there is no visible pygidial area.

Head about as long as broad, eyes large, equi-distant from the insertion of the mandibles and from the hind part which is quite rounded; it is deeply and closely pitted, somewhat densely white pubescent and with numerous black bristles; antennal tubercles not prominent; thorax very elongated, being nearly three times as long

as broad, and plainly gibbose, the anterior border of the pronotum is straight and the sides widely slanting, all the angles being distinct; at the base it is one-third wider across than at the anterior border, from there it is nearly straight laterally but it tapers slightly towards the metanotum which is only gradually sloping and simple, the pleuræ are strongly dentate behind; it is covered with broad foveæ separated by a sharp but narrow wall; basal segment dentate on each side, dilated and fitting against the ovate very convex second segment, and with two minute teeth underneath, second segment covered with elongated punctures somewhat striolate in the anterior part; hind tibiæ without rows of spines; spurs white.

Length $3\frac{1}{2}$ mm.; width $1\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Umtali), A. Bodong.

MUTILLA SEGKOMA, n. sp.

♀. Red, with the basal part of the first and the whole of the second and third abdominal segments black; head, prothorax and legs clothed with a dense, appressed, silky yellow pubescence with which are interspersed long flavescent setæ; abdomen sessile, first segment with a border of golden-yellow pubescence becoming broader and patch-like in the middle where it impinges on the anterior edge of the second segment, which, like the third, has also at apex a broad border broadly triangularly dilated in the centre; the sides are also clothed but less densely with a yellowish pubescence, and the two apical segments are equally yellow pubescent on the upper side.

Head broader than the anterior part of the prothorax, and about equal to the posterior, closely pitted, rounded, eyes very large, no space behind them; antennal tubercles moderately rounded, second antennal joint one-third smaller than the third; thorax nearly straight in front with the angles sharp, parallel for about a third of the length, slightly narrowed laterally from the suture of the pronotum to that of the metanotum, the latter is slightly broader than the former; the sides are serrulate, and those of the vertically declivous metanotum have three distinct spines on each side; first abdominal segment with a long tooth on each side, and a conspicuous keel underneath; it is about half the length of the second, very little narrower at apex, and they are both strongly punctate, the punctures on the other segments and on the under side are smaller; last abdominal segment somewhat convex, no distinct pygidial area; posterior tibiæ each with a double row of four spines; spurs white.

Length 4 mm.; width 1 mm.

Hab. Transvaal (Zoutpansberg).

MUTILLA INKONA, n. sp.

♀. Black, with the prothorax red; abdomen sub-sessile, second abdominal segment with two equi-distant white ovate spots each situated between the centre and the sides, third and fourth covered with a white band broadly interrupted in the centre, and not reaching completely the sides, basal part of apical segment densely pubescent white, pygidial area denuded, closely punctate; it is clothed on the head and prothorax with a moderately dense greyish pubescence intermixed with numerous long stiff whitish bristles especially numerous on the abdomen; legs very hairy.

Head slightly broader than the prothorax, deeply, closely and broadly punctate, eyes fairly large, equi-distant from the base of the mandibles and the posterior part which is moderately broadly rounded; antennæ thick, second and third joints short, equal in length; thorax sub-parallel, about one-third longer than broad, quite parallel from the anterior border of the pronotum which is nearly straight with the angles very sharp to about one-fourth of the whole length, it then becomes slightly narrow, but is still parallel as far as the metanotum which bulges a little but is not much wider than the pronotum and is abruptly declivous, the whole declivity, sides included, being tuberculate dentate, the back is deeply and roughly reticulate longitudinally, and the lateral margin irregularly serrate; abdomen elongate ovate, peduncle of first segment short, the carina ending in a distinct spine underneath, and plainly dentate on each side, the apical part of the segment is almost as broad as the second which is plainly striolate longitudinally on the upper side, and deeply punctate but simple underneath, other segments deeply but more finely punctate, pygidium very closely aciculate; posterior tibiæ each with a double series of four spines; spurs white.

Length 6-8 mm.; width 2-3 mm.

Hab. Mozambique (Beira), P. A. Sheppard.

MUTILLA AMATONGA, n. sp.

♀. Head and abdomen black, antennæ, thorax, and legs ferruginous red; clothed on the head, prothorax, and legs with a flavescent, more or less appressed silky pubescence intermingled with long whitish erect setæ; abdomen sub-sessile, bristling with white setæ, on the second segment are three white silky patches, the first one situated in the centre extends from near the anterior border, which it does not always reach, however, to about the middle and is parallel; on each side of this band but slightly nearer to the sides

than to the centre is an ovate one, the apex of which reaches slightly further down than the central, and at the apical border is a very small, triangular central patch coalescing with a white band covering completely the three following segments, the apical one is bare, closely strigillate longitudinally and plainly carinate laterally.

Head deeply and somewhat roughly pitted, eyes very large and bulging, the space behind short and not broadly rounded; antennæ thick with the central joints broadening, second one much shorter than the third, thorax nearly twice as long as broad, sloping forward from the apex of the metanotum to the anterior part of the pronotum which is slanting on each side of the neck with the outer angles somewhat blunt; it is nearly parallel, the sides are not crenulate; the metanotum is abruptly truncate, the sides of the declivity are serrulate, the declivity itself tuberculate, and slightly in front of the declivous part is a transverse, median, little raised ridge; the whole surface is equally foveolate reticulate; abdomen closely and moderately deeply punctate above and under; legs very hairy, tibiæ of hind legs each with a double series of four rufescent spines.

Allied to *M. partita*, Klug.

Length 6–8 mm.; width $1\frac{3}{4}$ –2 mm.

Hab. Mozambique (Amatongas, Beira), P. A. Sheppard.

MUTILLA UMTALINA, n. sp.

♀. Black, with the prothorax ferruginous red; abdomen elongate ovate, sub-sessile, basal joint with a bunch of flavescent silky hairs forming a small central patch at the junction with the second segment which has on each side and at about the median part an ovate yellowish silky patch about equi-distant from the centre and the sides, second segment with a broad band of the same colour and substance, narrowly interrupted in the centre; last segment clothed with whitish fulvescent pubescence, pygidial area finely striate.

Head somewhat short, sub-quadrate with the hind angles blunt, a little broader than the thorax, prolonged behind the eyes, the latter large, about equi-distant from apex or base; antennal tubercles sharp; antennæ wanting; whole surface closely reticulate and briefly flavidous pubescent; prothorax nearly twice as long as broad, parallel laterally from the apex to the suture with the metanotum which broadens slightly but is also parallel with the angles somewhat blunt but distinct, vertically declivous and having on the upper edge two median conspicuous spines and two smaller ones on each side of these, all equi-distant; anterior edge of pronotum nearly

straight, the angles fairly distinct; it is bristling with long black setæ turning to white behind, and is longitudinally furrowed, the furrows are uneven and filled with irregular, somewhat large foveæ; dorsal part of basal abdominal segment conspicuously granular, the other segments closely punctate but not striolate, second segment with a short compressed tubercle underneath; legs densely hairy, the hairs flavescent white, hind tibiæ with a double row of five spines; spurs white.

Length 11 mm.; width 3 mm.

Hab. Southern Rhodesia (Umtali), A. Bodong.

MUTILLA BATAWANA, n. sp.

♀. Light red, with only one-half of the upper part of the abdominal segment black; abdomen sub-sessile, second segment with three large, ovate, white flavescent patches, a median and two lateral ones narrowly separated, and a posterior band sub-triangular in the centre; the other segments covered with a similar band except the last one, which is partly denuded.

Head, prothorax, and legs clothed with a somewhat dense, appressed whitish flavescent pubescence and long setæ; head broader than long and wider than the anterior part of the thorax, eyes large, space behind the eyes moderately long with the angles rounded but distinct, the base somewhat emarginate in the centre; antennal tubercles smooth, rounded, second antennal joint one-third the length of the third, front and vertex roughly punctate; thorax sub-parallel, one-third longer than broad, only slightly broader across the metanotum than across the pronotum, the anterior border of which is nearly straight but slightly sinuate laterally on each side with the anterior angles acute, the hind angle is also sharp and distinct laterally, the metanotum is vertically truncate with the angles somewhat obtuse but distinct; it is somewhat reticulate punctate, but the declivity is more distinctly foveolate; the elongate ovate abdomen is very hairy above and under, the basal joint is short, moderately broadening, and bears no distinct keel underneath, the second segment which is deeply and closely punctate is black, but in the centre only, the two lateral patches being on a rufescent background, and is closely punctate; the last segment is very finely punctate, not strigillate; posterior tibiæ each with a double row of four teeth; spurs white.

Length 4 mm.; width 1 mm.

Hab. Transvaal (Zoutpansberg).

MUTILLA UMGANZE, n. sp.

♀. Red, with the abdomen black and the last antennal joints slightly fuscous; abdomen elongate ovate, sessile, basal joint with an apical border of yellow pubescence denser in the centre, second, third, fourth, and fifth segments with a similar but better defined border broadening sub-triangularly in the centre, but which is somewhat indistinct on the sides of the three penultimate segments, last segment with long hairs on each side of a smooth median longitudinal area.

Head plainly transverse, a little narrowed behind, broader across than the anterior part of the thorax but about equal in width to that of the posterior; coarsely reticulate punctate, eyes large, space behind the eyes long, base slightly arcuate; antennal tubercles carinate, second antennal joint one-third the length of the third; thorax one-third longer than broad, neck robust and long, in the shape of a truncate cone, anterior border of pronotum quite straight and with the angles acute, almost spinose, and its sides straight and plainly bi-dentate; the mesonotum is also parallel, a little narrower than the pronotum, and dentate laterally in the middle, the metanotum, which is very sloping from the convex scutellary region towards the declivity, has on each side one blunt tooth and three sharp spines, the second of which is situated at the upper angle of the declivity and is very long, the third spine is quite apical and shorter than the second; abdomen elongate ovate, basal segment with a tooth on each side, it is broad, as wide at apex as the second segment and nearly two-thirds of its length, the keel underneath is tri-toothed; all the segments are finely punctate; posterior tibiæ with a double series each of several spines; spurs white.

Length 7 mm.; width 2 mm.

Hab. Transvaal (Zoutpansberg).

The general facies and vestiture of this species is not unlike that of *M. segkoma*, but the spines with which the prothorax is provided distinguish it easily from the former.

MUTILLA PROMONTORII, n. sp.

♂. Black, with the upper and lateral parts of the thorax red; mandibles and tarsi sub-rufescent, legs fuscous; no wings or developed tegulæ; abdomen briefly pedunculate, second segment with a white more or less ovate patch on each side of the centre.

Head deeply and closely foveolate punctate, and covered with long black bristles; plainly transverse and only very slightly wider

than the anterior border of the pronotum ; eyes large, the space behind the eyes somewhat short and with the angles briefly rounded ; antennal tubercles rounded, second antennal joint shorter than the third ; thorax one-third longer than broad at its greatest width which is at the straight anterior border of the pronotum, contracted laterally near the scutellary region where the mesonotum, which is very short, being less than a third of the whole length, is slightly convex, and falls vertically, the sutures dividing the pronotum, the mesonotum and especially that of the scutellary region are very deep, there are no wings, only a smooth, tubercle-like tegula on each side, and the whole surface is covered with foveate punctures, broader however on the metanotum which is somewhat narrower at apex than the straight anterior border of the pronotum ; abdomen bristling with long black hairs, ovate, briefly pedunculate, the short slender peduncle is dentate on each side, and broadens at apex where it is two-thirds the width of the anterior border of the second, and bears a long, longitudinally emarginate keel, the ampliate ovate second segment is conspicuously striate longitudinally, the striæ acute, and the apical part of the other segments are only aciculate, on the pectus and the under side of the abdomen the pubescence is greyish ; pygidial area not striate ; legs with black and greyish hairs mixed, fuscous with the tarsi slightly rufescent, tibial spurs white, hind tibiæ each with only two superposed slender teeth.

Length $7\frac{1}{2}$ mm. ; width 2 mm.

Hab. Cape Colony (Constantia), Dr. F. C. Purcell.

MUTILLA BAMBATA, n. sp.

♂. Black, with the thorax red and the tibiæ and tarsi reddish, clothed on the head and prothorax with an appressed greyish flavescenscent pubescence, and bristling with long, erect black setæ ; on the abdomen the somewhat dense setæ are black and greyish white, and the long pubescence on the legs is white ; on each side of the second abdominal segment is a triangular silky white patch, and the third and fourth are covered by a similar white band reaching from side to side ; tibial spurs rufescent.

Head narrow, vertical in front, very slightly broader than the anterior part of the thorax ; eyes large, somewhat elliptic, not emarginate, space behind the eyes moderately long, angles slightly rounded, whole surface deeply but closely pitted ; antennal tubercles and joints with the exception of the deeply infuscate and much-

curved basal one sub-rufescent, second joint one-third shorter than the third; thorax covered with contiguous alveolæ, one-third longer than broad, parallel for half the length, then constricted laterally at the junction with the metanotum, the latter also parallel but slightly narrower, convex, without any posterior angles and falling vertically, the anterior border of the pronotum is straight with the angles blunt but not quite rounded, the suture with the mesosternum is not very distinct, but that with the metasternum is deeply grooved, the scutellary region is very transverse, but otherwise indistinct; abdomen ovate, briefly pedunculate, the very short peduncle is dentate on each side and almost sub-sessile, but broadening so as to be at apex some four-fifths of the basal width of the second which is plainly ovate, and bears from the base to past the median part numerous wavy longitudinal costules somewhat broadly separated from each other; the other segments are rugulose, there is no pygidial area, the peduncle is carinate underneath, and the second segment bears a very distinct basal elongated and carinate tubercle; hind tibiæ not denticulate outwardly.

Length 8 mm.; width $2\frac{1}{4}$ mm.

Hab. Transvaal (Shilouvane), Rev. H. Junod.

MUTILLA ANDREANA, n. sp.

♂. Black, clothed with an extremely dense and long white pubescence, especially long on the scutellum; abdomen sub-sessile, the first abdominal segment has a narrow apical silky white band, the four segments following are clothed with an appressed white pubescence, the two apical ones are not pubescent; wings light fuscous.

Head plainly transverse, slightly broader than the anterior border of the pronotum, covered with contiguous, deep, slightly irregular punctures, clothed with a white erect pubescence especially dense in the frontal part; eyes very large, deeply incised inwardly, set nearer to the insertion of the mandibles than to the basal margin which is nearly straight with the angles obtuse but yet distinct; antennal tubercles prominent, second joint very small, not half the length of the third which is also short, fifth, sixth, and seventh massive, the latter slightly contorted and depressed underneath; anterior part of thorax covered with deep, irregular sub-foveate punctures broader and deeper than those on the head; metanotum more broadly foveate; pronotum nearly straight in front, but with the angles rounded and the suture deep; mesonotum convex, very distinctly

angular on each side behind, and having two median longitudinal grooves; scutellum simple, convex, sloping; metanotum very short, convex, very declivous, and rounded laterally, and very densely hairy white; abdomen very closely punctate above except on the apical segment where the punctures are very rough and very closely set and leave no visible pygidial area; underneath the punctures are more scattered and slightly broader; the short basal segment is not as broad at apex as the base of the ampliate ovate second one, the keel underneath is not strongly defined; legs clothed with a thick white pubescence; spurs of tibiae white; anterior wings with a well-developed stigma, radial cell not truncate at apex but not very sharp, three closed cubital and two recurrent nervures received respectively in the centre of the second cubital and past the middle of the third.

Length 11 mm.; width (wings expanded) 18 mm.

Hab. Mozambique (Beira), P. A. Sheppard.

Allied to *M. atrata*, Sm., and closely resembling *M. adelpha*, André, which I have also received from Beira, but captured in November, while *andreaana* was captured in February.

MUTILLA UMTATA, n. sp.

♂. Black, with the pronotum, mesonotum, and scutellum dark ferruginous red, wings infusate, anterior part sub-violaceous; abdomen sub-sessile, the first four basal segments having on the apical border a moderately broad sub-rufescent whitish band; head clothed with a very dense partly appressed partly erect flavescent whitish pubescence; thorax more sparsely, abdomen and legs densely villose, the hairs greyish white.

Head transverse, eyes large, hardly emarginate in the inner part, nearly equi-distant from the basal margin which is almost straight and very rounded at the angles than from the point of insertion of the mandibles which are broadly concave, forcipate and three-dentate at apex and dentate outwardly at about the middle, the tooth of the left jaw is bifid; first antennal joint densely setose, the tubercles well developed and somewhat acute, and the second joint one-third the length of the third; ocelli set close together and moderately distinct, front and vertex closely pitted; thorax sub-parallel but somewhat deeply sinuate laterally past the scutellary region, prosternum narrow, somewhat arcuate, with the angles obtusely rounded, suture very distinct, pronotum convex and with two median longitudinal grooves; scutellum knobby but simple and

sloping, the surface of these three parts is roughly reticulate foveolate, metanotum convex, short, rounded laterally and covered with regular foveæ; tegulæ punctulate and densely hairy; abdomen subsessile, peduncle short and with a short but sharp keel slightly sinuate in the centre and truncate at each end, punctures of the first two basal segments simple and closely set, those of the following segments also closely set, but finer, those of the last segment very elongated and somewhat strigillate laterally; tibial spurs white; wings with the stigma hardly distinct, radial cell moderately elongated, sub-truncate at tip; three closed cubital cells and two recurrent nervures, the first abutting to the middle of the second and the other past the middle of the third cell.

Length 13–15 mm.; width (wings expanded) 24–26 mm.

Hab. Transvaal (Waterberg), Pretoria Museum.

Allied to *M. purpurata*, Sm., and *M. psamathe*, Pér.

MUTILLA SABINA, n. sp.

♂. Black, with the two basal segments of the abdomen red, clothed all over and under, legs included, with very dense white villose hairs; mesonotum bearing also a yellowish white appressed pubescence, all the abdominal segments with a thick fringe of white hairs, third segment covered by a band of silky white pubescence triangularly interrupted in the centre; scutellum with a bunch of white hairs at apex; abdomen sub-sessile; wings infusate.

Head slightly broader than the pronotum, narrow on the vertex, being there nearly twice as long as broad, truncate behind with the angles distinct; closely foveolate punctate and clothed on the centre of the vertex and in front with long, dense white hairs; eyes large, deeply incised in the inner part, space behind them long; labrum with a quadrate carinate smooth, shiny impression; antennal tubercles small, first joint with a very plain, sharp spine in the inner part of the apex, third joint very small, less than one-third the length of the fourth; pronotum slightly sloping in front, not much amplified laterally towards the tegulæ which are black, suture carinate, mesonotum convex, with two plain median longitudinal grooves and two carinæ; scutellum convex, simple, metanotum convex, then vertical, rounded laterally and also at apex, broadly reticulate, the remainder of the thorax being deeply foveate punctate; first abdominal segment not quite as broad at apex as the base of the second, the carina underneath short, sharp at each end; all the segments closely punctate, the punctures on the last which

has no pygidial area, are somewhat rough; spurs of tibiæ white; wings fuscous but having on the forewing an irregularly diagonal hyaline narrow streak extending diagonally from the first radial to the third discoidal cell; stigma not distinct, three cubital closed cells, two recurrent nervures received respectively the first in the middle, the second slightly after the middle of the third cubital.

Length $10\frac{1}{2}$ mm.; width (wings expanded) $18\frac{1}{2}$ mm.

Hab. Transvaal (Lydenburg).

Allied to *M. specularis*, Sm., and especially to *M. zoë*, Pér., but easily distinguished by the sculpture of the labrum and the spine of the first antennal joint. In a second example one of these spines is broken off and the other is partly mutilated.

MUTILLA MANOA, n. sp.

♂. Black, clothed with abundant erect greyish hairs intermixed with black ones, the greyish ones are very noticeable on the frontal part, the pronotum, and the scutellum; abdomen sub-sessile, edge of the second and third segments with a somewhat narrow border of long, silky white, densely set hairs; wings sub-fuscous; antennæ robust, second joint about one-fourth the length of the third; head as broad as the thorax, base arcuate, the space behind the eyes short, strongly rounded, eyes distinctly incised in the inner part, large, ocelli set far back within two sub-parallel grooves, surface covered with very closely set, somewhat irregular deep punctures; pronotum straight in front with the angles distinct, slantingly amplified laterally, about as broad across the base of the metanotum as on the anterior border of the pronotum, mesosternum plainly convex and bearing two well-defined longitudinal median grooves, scutellum convex, sloping, simple, metanotum short, convex, rounded laterally; the surface of the thorax and tegulæ closely punctate, that of the metanotum regularly foveate; abdomen elongate ovate, first segment dentate on each side with the peduncle very short, broadly amplified towards the apex which is, however, narrower than the base of the second, keel sinuate in the centre and very sharply dentate at apex, deeply and closely punctate above and under, like the other segments, the punctures somewhat uneven but smooth except on the last segment which shows no pygidial area and where the punctures are very rough; spurs of tibiæ white; wings infuscate, but only slightly so near the base; radial cell sub-obtuse but not distinctly truncate at apex, three closed cubital and two recurrent nervures received the first slightly in front, the

second slightly past the centre of the second and third cell respectively.

Length $9\frac{1}{2}$ mm ; width (wings expanded) 14 mm.

Hab. Cape Colony (Cape Town), Master L. Péringuey.

The shape and livery are those of *M. deiopeia*, Pér., but the abdomen is sub-sessile instead of being petiolate, the punctuation is much less rough, and the anterior wings have three closed cubital cells and two recurrent nervures instead of two cells and one nervure as in *M. deiopeia*.

MUTILLA BIZANA, n. sp.

♂. Not unlike in general facies, neuration, and colouring of wings the preceding species, but the space behind the eyes is longer than in *M. umtata*, the eyes are more distinctly, although only slightly, emarginate in the inner side, the mandibles are not so much developed, and being less concave do not project beyond the labrum, and the tubercles are blunter; the mesonotum, tegulæ, and scutellum only are ferruginous red, and the former has no longitudinal groove; the metanotum is shorter and quite vertical instead of being convex, and the sculpture of the upper side of the thorax is rougher; the abdomen is more sessile, the first joint being shorter and broader than in *M. umtata*, and the keel underneath is shorter, the second segment has underneath a small depression on each side separated in the centre by a very small tubercle; the flavescent whitish bands at the apex of the first, second, and third segments are identical with those of *M. umtata*, but on the fourth this band is reduced to a central patch; all the segments are more closely punctate, the intervals between the punctures on the second segment are slightly raised instead of being smooth, the last segment is scrobiculate as in *M. umtata* and without any pygidial area, and the tibial spurs are black instead of being white.

Length 11 mm. ; width (wings expanded) 19 mm.

Hab. Mozambique (Beira), P. A. Sheppard.

MUTILLA ARAPHE, n. sp.

♂. Black, shiny; head and prothorax clothed with a somewhat sparse silky white villosity particularly noticeable at the apex of the scutellum and on the sides of the metanotum; abdomen sub-sessile, third segment with a lateral patch of white pubescence of the same width as the denuded median part; wings infusate. My example is, however, probably rubbed.

Head broader than the anterior part of the thorax, twice as broad as long, closely punctate, the punctures even; eyes large, incised inwardly, space behind the eyes very short, base nearly straight with the angles quite distinct; antennæ piceous, the tubercles greatly developed, somewhat conical, second joint very small, third nearly one-third longer than the fourth; pronotum sub-arcuate in the anterior part and gradually ampliate laterally towards the tegulæ, but with both the anterior and posterior angles rounded, suture very plain, mesonotum convex, and with two distinct longitudinal grooves, truncate behind with the hind angles not projecting, tegulæ very large, weakly punctate, quite hyaline along the outer edge, scutellum moderately convex, sloping, simple; metanotum sloping, then declivous, rounded laterally and broadly foveate, while the other parts of the thorax are deeply foveolate punctate; first abdominal segment not as broad at the apex as the base of the second, and deeply and irregularly punctate, the keel underneath runs the whole of the length and is slightly dentate at apex; the second segment is densely punctate along the base and more sparsely so from the middle to the apex, these punctures are round, and those of the under side are broader and more evenly distributed than the upper ones, the other segments are finely aciculate above, not so underneath, but the aciculation on the last segment, which has no pygidial area, is deep and rough; spurs of the tibiæ white; wings light fuscous, stigma very small, radial cell elongated, not truncate at apex, two closed cubital, one distinct recurrent nervure received slightly past the middle of the second cell, and a feeble indication of a second recurrent.

The wings of my example are damaged, and it is not possible to ascertain if the third cubital, which is only feebly indicated, is closed or not, but I believe that it is not.

Length 10 mm. ; width (wings expanded) $14\frac{1}{2}$ mm.

Hab. Mozambique (Beira), P. A. Sheppard.

MUTILLA PETRUSIANA, n. sp.

♂. Black, with the whole of the thorax and also the tegulæ red, very briefly pubescent white on the frontal part, but bristling with hairs that are black on the anterior part of the thorax, and white on the metanotum, sides, under side, and the legs; abdomen sub-sessile, basal joint with a distinct fringe of appressed long whitish hairs, second segment with a similar but slightly narrower border, third completely covered with a white pubescence, apical segment densely

hairy white; wings hyaline at base and narrowly so at apex, black in the centre.

Head deeply foveate, nearly as long as broad, much rounded behind the eyes, the basal margin being on that account plainly arcuate; eyes large, incised inwardly, front with a median longitudinal carina below the antennal tubercles, second antennal joint very small; anterior part of pronotum slightly narrower than the head, gradually amplified laterally towards the tegulæ, both the anterior and posterior angles are quite rounded and the suture is hardly distinct; mesonotum convex and without visible longitudinal grooves; scutellum highly tuberculate, sub-cuneiform, metanotum strongly sloping, rounded laterally and broadly reticulate, while the pro- and mesonotum are longitudinally and irregularly foveolate striate; first basal segment short, not quite as broad at the apex as the base of the second, and deeply and roughly punctate, the keel underneath short, dentiform, second segment covered for two-thirds of the length with broad reticulate foveæ becoming much smaller towards the apex; the punctures underneath are rough and uneven; the other segments are aciculate, and the last one, which has no pygidial area, is more deeply aciculate than the others; tibiæ with white spurs; fore wings hyaline at the base for a fourth of the length; and at the rounding of the apical part, the rest black or very deep fuscous, no distinct stigma; radial cell long, acuminate at tip, two closed cubitals and one recurrent nervure received in the middle of the second cubital.

Length $9\frac{1}{2}$ mm.; width (wings expanded) $14\frac{1}{2}$ mm.

Hab. Transvaal (Pietersburg), A. T. I. Janse.

MUTILLA FRIANA, n. sp.

♂. Black, with the thorax ferruginous red; second abdominal segment with a narrow, apical, seemingly not interrupted silvery white pubescent band, third segment with a very broad band of the same texture and colour covering nearly the whole surface, but somewhat broadly interrupted longitudinally in the centre; wings deep fuscous or black but with the basal part hyaline for about one-fourth of the length and a small space at the apex also hyaline, in the first radial cell is a median, small, somewhat rounded transparent patch; body covered with a greyish white pubescence and erect hairs intermingled with black ones which on the upper side are more numerous than the white.

Head closely and irregularly scrobiculate, smaller than the thorax,

but equal in width to the anterior part of the pronotum, transverse, sinuate in the middle of the basal margin but with the angles straight; eyes oblong, moderately large, very little incised inwardly, space behind the eyes long; mandibles not very large, acuminate, simple laterally at the base; antennæ not very robust; second joint very small; thorax gradually amplified laterally from the outer angles of the pronotum to the tegulæ which are very long and comparatively narrow, suture of the pronotum very highly carinate; mesonotum moderately convex and having in the centre a very distinct longitudinal raised line; scutellum very highly convex, globose, all these three parts of the thorax are broadly, deeply, and irregularly pitted. Metanotum short, rounded laterally, gradually sloping, broadly reticulate with the walls very highly raised and sharp, it has in the centre a longitudinal broad smooth groove, the walls of which are very sharp; abdomen sessile, the segments finely aciculate with the exception of the last and of the second, the latter is broadly foveate above and below, where there is a conspicuous smooth longitudinal median keel reaching from the base to past the median part, the keel of the first segment is short, emarginate, and vertically truncate; the last segment is clothed with greyish hairs and is deeply pitted and has no pygidial area; spurs white, hind legs not spinose; radial cell elongated, not truncate at apex, three cubital and two recurrent nervures.

Length $17\frac{1}{2}$ mm.; width (wings expanded) 28 mm.

Not unlike in general appearance but not in markings *M. guineensis* (*sycorax*, Sm.), especially in the colouration of the wings.

Hab. Northern Transvaal, H. Fry.

GEN. METHOCA, Latr.

METHOCA CONCINNA, n. sp.

♀. Black, shiny, with the whole thorax ferruginous red, tibiæ and tarsi rufescent, the mandibles and the three first antennal segments are also rufescent. Covered with a greyish pubescence, which does not however hide the teguments, the latter are very shiny.

Head plainly transverse, being on the vertex nearly twice as broad as long; it is, however, deeply sinuate at the neck, and the hind angles are somewhat rounded; the space behind the eyes is long; the surface is covered with closely set round punctures, there are no traces of a median longitudinal carina in the frontal part; the ocelli

are distinct and not closely grouped ; second antennal joint a little less than half the length of the third ; thorax sparingly punctate, and arcuately striate only on the sides of the mesonotum ; abdominal segments smooth, shiny, only very slightly and sparingly aciculate, the greyish pubescence is not appressed, and is more distinct on the four posterior segments ; the abdomen is plainly stalked ; hind tibiæ spinulose, spurs whitish.

This species, which is larger than *M. minima*, André, differs from it in several respects.

Length 7 mm. ; width $1\frac{1}{4}$ mm.

Hab. Cape Colony (exact locality unknown).

INDEX

PAGE	PAGE		
amalita (Mutilla).....	393	manoa (Mutilla)	404
amatonga (Mutilla).....	396	matola (Mutilla)	394
andreaana (Mutilla)	401	<i>Methoca</i>	408
araphe (Mutilla)	405	<i>Mutilla</i>	385
bambata (Mutilla)	400	peringueyi (Tricholabiodes)	385
batawana (Mutilla)	398	petrusiana (Mutilla)	406
bechuana (Odontomutilla).....	391	promontorii (Mutilla)	399
bidentata (Myrmilla)	390	<i>Psammotherina</i>	385
bizana (Mutilla)	405	rhodesia (Myrmilla)	390
concinna (Mutilla)	408	sabina (Mutilla)	403
dalila (Mutilla)	392	segkoma (Mutilla)	395
friana (Mutilla)	407	tongaana (Rhopalomutilla)	386
gaza (Mutilla)	393	transvaalica (Psammotherma)	385
inkona (Mutilla)	396	umganze (Mutilla)	399
kandla (Dasylabris).....	387	umtalina (Mutilla)	397
karrooa (Dasylabris)	388	umtata (Mutilla)	402

11.—*New South African Micro-Lepidoptera*.—By E. MEYRICK,
B.A., F.R.S.

II.

I AM indebted to Dr. L. Péringuey for the opportunity of studying the additional material described here; the types are deposited in the collection of the South African Museum.

PTEROPHORIDÆ.

PLATYPTILIA PERIACATA, n. sp.

♂. 18 mm. Head white, collar tinged with ochreous, frontal tuft moderate. Palpi $1\frac{2}{3}$, ochreous-whitish. Thorax ochreous-white. Forewings cleft from beyond $\frac{2}{3}$, segments moderately broad, termen of first sinuate, oblique; pale brownish much mixed with whitish, with some scattered dark brown scales; costal edge dark fuscous with a few whitish points, and a whitish space beyond costal blotch; indistinct spots of dark fuscous irroration towards dorsum at $\frac{1}{3}$, and beneath costa before middle; a sharply marked triangular dark fuscous costal blotch before cleft, reaching $\frac{2}{3}$ across wing, whitish-edged posteriorly; some fuscous suffusion along termen: cilia whitish, tips infuscated, on costa dark fuscous, on termen with an even blackish subbasal line, on dorsum with some scattered blackish scales and two blackish scale-projections before and beyond costal blotch. Hindwings cleft firstly from $\frac{1}{2}$, secondly from $\frac{1}{4}$; grey; cilia pale greyish, on termen with a dark grey ante-median shade, on dorsum mixed with whitish, towards base with scattered blackish scales, in middle with a scale-projection of whitish scales becoming blackish towards tips.

CAPE COLONY, Capetown (Dawson); one specimen. Allied to *molopias*.

STENOPTILIA ZOPHODACTYLA, Dup.

CAPE COLONY, Capetown (Dawson); two specimens.

TORTRICIDÆ.

TORTRIX SYMPLECTA, n. sp.

♂. 16 mm. Head and thorax whitish-ochreous, partially tinged with ferruginous. Palpi rather long, whitish-ochreous, partially brownish-tinged. Antennæ flatly dentate, ciliations $1\frac{1}{2}$. Abdomen pale whitish-ochreous. Forewings moderate, somewhat dilated posteriorly, costa anteriorly moderately, posteriorly slightly arched, without fold, apex obtuse, termen straight, hardly oblique; light ochreous-yellowish, reticulated throughout with yellowish-brown; basal patch partially marked with grey and black irroration, especially on outer edge, which is sharply angulated above middle; central fascia suffused with grey and blackish irroration on upper half and margins of lower half, oblique, upper half narrow, lower half broadly dilated with both margins convex; costal patch semi-oval, grey irrorated with blackish, containing two small cloudy ochreous costal spots: cilia whitish-ochreous with yellow-brown median line, towards tips grey sprinkled with blackish on tornus (imperfect elsewhere). Hindwings and cilia whitish.

TRANSVAAL, White River, in November (Cooke); one specimen.

TORTRIX AFRICANA, Wals.

TRANSVAAL, White River, in October and November (Cooke).

EUCOSMIDÆ.

LASPEYRESIA OCNORHAMMA, n. sp.

♂. 17 mm. Head brownish-ochreous. Palpi whitish-ochreous, externally suffused with fuscous. Thorax and abdomen fuscous. Forewings elongate, somewhat dilated, costa slightly arched, apex obtuse, termen sinuate, somewhat oblique; fuscous, suffused with shining violet-lead-grey and marked with numerous longitudinal black lines, mostly on veins but with some additional ones; towards costa the lead-grey colouring forms oblique strigæ separated by darker interspaces; ocellus margined posteriorly with silvery-lead, three black streaks within it more pronounced. Hindwings with 3 and 4 short-stalked; grey; cilia light-grey.

TRANSVAAL, White River, in November (Cooke); one specimen.

GELECHIADÆ.

PALTODORA MELANATRACTA, n. sp.

♂ ♀. 19–21 mm. Head white. Palpi white, second joint with scales expanded above towards apex and long dense tuft beneath, dark fuscous except at apex of joint, terminal joint longer than second, anterior edge dark fuscous. Forewings elongate, narrow, especially in ♂, costa slightly arched, in ♂ slightly sinuate towards middle, apex acute, produced, termen sinuate, extremely oblique; fuscous-whitish, sometimes partially suffused with pale fuscous, with scattered blackish scales, especially towards apex; costa sometimes suffused with blackish towards base; a black streak on submedian fold from base to $\frac{3}{4}$, apex acute; sometimes a black dot beneath costa near base; stigmata rather large, black, plical very obliquely before first discal, first discal somewhat beyond middle, in one specimen nearly obsolete: cilia ochreous-whitish, with more or less developed interrupted blackish median line. Hindwings light grey; cilia pale whitish-ochreous.

TRANSVAAL, White River, from September to December (Cooke); six specimens.

SYMBATICA, n. g.

Head with appressed scales; ocelli imperceptible; tongue developed. Antennæ $\frac{4}{5}$, basal joint moderately elongate, without pecten. Labial palpi long, curved, ascending, second joint with appressed scales, terminal shorter, slender, acute. Maxillary palpi very short, appressed to tongue. Posterior tibiæ clothed with long hairs above. Forewings with 2 almost from angle, separate, 7 and 8 stalked, 7 to costa, 11 from before middle. Hindwings 1, elongate-trapezoidal, termen sinuate, oblique, cilia almost 1; 4 and 5 out of 3, 6 and 7 long-stalked.

Probably allied to *Gelechia*, but characterised by the quite peculiar neuration of hindwings.

SYMBATICA CRYPHIAS, n. sp.

♀. 25 mm. Head, palpi, and thorax dark grey sprinkled with white, terminal joint of palpi suffused with white except on anterior edge. Abdomen grey. Forewings elongate, narrow, costa slightly arched, apex pointed, termen extremely obliquely rounded; grey irrorated with black and white; discal stigmata represented by small spots of blackish irroration connected by a streak of white suffusion:

cilia grey mixed with white. Hindwings grey; cilia grey-whitish, with grey basal line.

CAPE COLONY, Capetown (Dawson); one specimen.

GELECHIA LIBERATA, n. sp.

♀. 17 mm. Head pale whitish-ochreous. Palpi ochreous-whitish, second joint dark fuscous towards base, terminal joint shorter than second, apex black. Thorax whitish-ochreous, mixed on sides with fuscous. Abdomen greyish. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded; light ochreous-brownish, with some scattered fuscous and a few black scales; base of costa suffused with dark fuscous, forming a short transverse mark near base; a minute black subdorsal dot near base; some strigulæ of blackish irroration on costa anteriorly; a subtriangular spot of fuscous suffusion on dorsum at $\frac{2}{5}$, terminated above by a small blackish spot representing plical stigma; a moderate spot of fuscous suffusion with some black scales on costa at $\frac{2}{3}$, and another towards dorsum before tornus: cilia pale brownish-ochreous sprinkled with fuscous and blackish (imperfect). Hindwings with 6 and 7 stalked; grey; cilia ochreous-grey-whitish.

CAPE COLONY, Capetown (Dawson); one specimen.

NOTHRIS CHIONITIS, n. sp.

♂. 17 mm. Head, thorax, and abdomen white. Palpi white, second joint with two black spots, tuft long, terminal joint with two black rings. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen gently rounded, rather strongly oblique; white, becoming pale greyish-ochreous posteriorly, with a few fine scattered black scales, towards apex and termen sprinkled with grey; posterior half of costa with short oblique alternate strigulæ of grey suffusion and white; a fine white terminal line edged anteriorly by a row of black dots preceded by fuscous suffusion: cilia whitish (imperfect). Hindwings whitish; cilia ochreous-whitish.

TRANSVAAL, White River, in November (Cooke); one specimen.

CECOPHORIDÆ.

PHILOBOTA (?) *ERASTIS*, n. sp.

♀. 22 mm. Head and thorax grey-whitish, outside edge of patagia tinged with rosy-yellowish. (Palpi broken.) Abdomen

ochreous-whitish. Forewings elongate, costa gently arched, apex pointed, termen sinuate, rather strongly oblique; pale ochreous-grey suffusedly mixed with white; costa suffused with white, costal edge dark grey towards base; a moderately broad cloudy white median streak throughout; a short subcostal streak of red suffusion from base; a red basal spot beneath median streak, connected with plical stigma by a suffused ochreous-yellow streak; stigmata large, vermilion-red, discal placed on median streak, plical beyond first discal, second discal forming an oblique spot connected by a streak of scattered red scales with apex; some scattered red scales along termen: cilia pale ochreous-grey mixed with white, on costa white. Hindwings light ochreous-grey, whitish-tinged towards base; cilia white, towards base greyish-tinged.

CAPE COLONY, Capetown (Lightfoot); one specimen. In the absence of the palpi the generic location is not certain, but it is a very distinct species.

PLUTELLIDÆ.

GYMNORGRAMMA RHODONEURA, Meyr.

CAPE COLONY, Capetown (Dawson); one specimen.

TINEIDÆ.

CRITICONOMA, n. g.

Head smooth; ocelli absent; tongue absent. Antennæ $\frac{3}{5}$, in ♂ stout, somewhat flattened, simple, basal joint stout, without pecten. Labial palpi moderate, curved, somewhat ascending, diverging as widely as possible, clothed with dense appressed scales, terminal joint as long as second, obtuse. Maxillary palpi rudimentary. Posterior tibiæ clothed with long hairs above. Forewings with 2 from $\frac{5}{6}$, 7 to costa, 11 from before middle. Hindwings 1, elongate-ovate, cilia 1; 2 widely remote, 5 and 6 stalked, 7 parallel.

Intermediate between *Opogona* and *Tinea*, but differs from both by the undeveloped maxillary palpi.

CRITICONOMA CHELONÆA, n. sp.

♂ 21 mm., ♀ 25 mm. Head, palpi, and thorax pale brownish-ochreous. Antennæ and abdomen whitish-ochreous. Forewings

elongate, narrow, costa slightly arched, apex obtuse, termen extremely obliquely rounded; light brownish-ochreous; costal edge dark fuscous towards base; whole wing except on costa strewn with large coarse cloudy dark fuscous transverse strigulae tending to coalesce into striae, their confluence tending to form an irregular spot on dorsum before middle: cilia pale brassy-ochreous. Hindwings and cilia whitish-ochreous.

CAPE COLONY, Capetown; two specimens, of which the ♀ is damaged. Larva feeding in portable case on lichens; case sub-oblong, 20 mm. long × 10 mm. broad, flat, little narrowed posteriorly, shoulders rather angularly prominent, mouth abruptly narrowed; grey-greenish, formed of silk covered with fragments of lichen and sand.

TINEOLA PURPUREA, Stt.

TRANSVAAL, White River, in October (Cooke); one specimen.

BARBAROSCARDIA SCEPTICA, n. sp.

♂. 14 mm. Head, palpi, antennae, thorax, and abdomen ochreous-whitish. Forewings elongate, rather narrow, costa gently arched, apex round-pointed, termen extremely obliquely rounded; 7 and 8 separate, 7 to costa, 9 absent; ochreous-whitish, sprinkled with strigulae of fuscous and dark fuscous scales; markings fuscous irrorated with black; small spots on costa near base, beyond $\frac{1}{4}$, in middle, at $\frac{3}{5}$, and before apex, two representing discal stigmata, second forming a transverse mark, one on dorsum before middle, and a transverse mark before tornus: cilia ochreous-whitish, with three interrupted fuscous lines sprinkled with black. Hindwings light grey; cilia pale whitish-ochreous.

TRANSVAAL, White River, in September (Cooke); one specimen.

THRANITICA HEMICOPA, Meyr.

TRANSVAAL, White River, in November and December (Cooke); six specimens.

MELASINA DISSOLUTA, Meyr.

TRANSVAAL, White River, in December (Cooke); one specimen, apparently not distinguishable from the types.

PITHARCHA CHALINÆA, Meyr.

TRANSVAAL, White River, in November (Cooke); two specimens.

HAPSIFERA GLEBATA, Meyr.

TRANSVAAL, White River, in November (Cooke) ; one specimen.

AMYDRIA TROPHIAS, Meyr.

CAPE COLONY, Capetown (Dawson) ; one specimen.

ADELIDÆ.

NEMOPHORA TURPIS, Walk.

TRANSVAAL, White River, in November (Cooke) ; one specimen.

12.—*New Species of South African Myrmecophilous Pselaphidæ*
(*Coleoptera*).—By A. RAFFRAY.

TRIBE BATRISINI.

ORROPYGIA, n. gen.

Fusiform. Head almost quadrate with the angles rounded and the frons prolonged, but gradually depressed above the epistome. Eyes almost median. Maxillary palps of moderate size; 1st joint very small, 2nd elongated, straight, thicker at the tip, 3rd very short, obconical, 4th longer than the two preceding taken together, irregularly fusiform, more swollen past the middle, obtusely acuminate at the tip. Antennæ broadly separated at the base, inserted under the outer frontal angle, moderately long, club hardly pronounced. Prothorax sub-cordiform, shoulders almost absent, and having an uninterrupted sutural line, and an abbreviated dorsal. Abdomen longer than the elytra, conical, almost horizontal, all the dorsal segments distinct, tergites decreasing; the first has two lateral carinæ the inner of which is slightly oblique, both carinæ are moderately distant from each other, entire and form the margin, there are only two faint traces of a very short carina on the 2nd, 3rd, and 4th tergites, the 5th is plane, truncate at apex; the sternites are of the same size as and corresponding to the tergites, the first is invisible. Metasternum large, projecting as an obtuse point between the hind coxæ which are slightly apart. Legs robust, moderately long; tarsi moderately long, slender, 1st joint very small, 2nd and 3rd cylindrical, sub-equal, the two claws are very unequal.

This new genus of the Batrisini tribe comes evidently near *Connodontus*, the species of which are African, and mess-mates, if not of ants, at least of Termites. The facies which is very much alike, is especially due to the shape of the abdomen the dorsal and ventral segments of which entirely correspond, the dorsal being neither sloping nor incurved underneath. But it differs from *Connodontus* in the palpi being smaller, and in the last joint being in nowise

flagelliform; on the contrary it is slightly clubbed, exactly as in the true *Batrisus*. *Orropygia* also resembles *Namunia* from Smyrna, which is likewise myrmecophilous, but in this genus the abdomen has an entire, strongly indicated lateral margin, and the mesosternum is truncate between the hind coxæ which are widely distant. On that account the two genera have to be broadly separated.

ORROPYGINA MYRMECOPHILA, n. sp.

Dark reddish brown, with the elytra and legs lighter, shiny, briefly not thickly fulvous pubescent; head and prothorax covered with a strong, rough, closely set punctuation which is stronger and more ocellate on the prothorax; elytra with sparse, somewhat strong setiform punctures; the punctures on the abdomen are finer. Head hardly as long as broad, anterior angles projecting but rounded and flattened; frons transversely impressed between the angles somewhat behind, convex and declivous between the antennæ; sides slightly sinuate, tempora much rounded, two broad but shallow fossæ behind the centre, occiput and vertex not distinctly carinate. Antennæ long and robust; joint 1 robust, 2 not much longer than wide, 3-6 very slightly obconical, much longer than broad and slightly increased in length, 7 equal to 4, 8 cylindrical and shorter, 9-10 of equal length but slightly thicker and obconical, 11 longer, fusiform. Prothorax longer than broad, strongly angulate on the sides before the median part, the sides and the anterior part forming a single curve; from the angle to the base the sides are slightly arcuate inwardly, on each side is a strong fossa and traces of a longitudinal furrow; a very faint transverse depression unite the two lateral fossæ with a not well-marked median one. Elytra moderately elongated, regularly narrowed towards the base, shoulders almost obsolete but indistinctly carinate, 3 basal fossæ, dorsal stria shortened in the anterior third part of its length. Abdomen longer than the elytra, conical; tergites decreasing gradually, the first provided in the centre of its hind edge with a long and robust horizontal spine extending as far as the anterior half of the 2nd tergite, ultimate tergite visible, truncate at apex; sternites of the same size as the tergites, the first flattened and more rounded at apex. Metasternum with a deep, central furrow. Femora strongly fusiform; tibiæ nearly straight, gradually and very slightly thickening towards the apex.

Length 3 mm.

No sexual characters other than the spine of the first abdominal tergite—which is undoubtedly the appendage of the male—is to be detected.

Captured by Rev. R. Godfrey, at Pirie Mission Station (King William's Town District, Cape Colony) in the formicarium of a large ant belonging to the genus *Camponotus*.

SUB-FAMILY CLAVIGERINÆ.

GEN. ARTICERODES.

ARTICERODES LATUS, n. sp.

Moderately short, thick and little convex, attenuate in front, reddish brown, shiny; head and prothorax with rough, confluent but somewhat fine and shallow punctures bearing a few fine setæ; remainder of the body smooth, with a few seriate setæ on the elytra. Head hardly longer than broad, sub-cylindrical, epistome dilated on the sides and also in front in a very obtuse triangle; frons declivous forward, tempora angular. Eyes large, projecting, median. Antennæ robust, as long as the head and half the length of the prothorax, joint 2 quadrate, 3 a little longer than broad, obconical, 4 long, nearly straight, gradually thickened towards the end which is squarely truncate. Prothorax longer than the head, as broad as long, attenuated in front, rounded laterally, the base triangular, an entire strongly defined longitudinal furrow deeper in front than behind. Elytra hardly longer than broad, slightly attenuate towards the base, posterior margin declivous, angularly sinuose, and having on each side, and not far from the edge, a fascicle of hairs corresponding to an abdominal excrescence, and a few rigid setæ in addition. Abdomen a little larger than the elytra, moderately convex, rounded behind, three deep excavations at the base separated by fasciculate excrescences corresponding to the fascicles of hairs of the elytra, lateral cavities very narrow, the median one broad, transverse, lateral margin moderately narrow, simple, fasciculate inwardly at the base. Metasternum large, pubescent. Legs robust, moderately short, hardly compressed, tibiæ gradually thickened towards the apex, intermediate ones slightly arcuate.

♂. Metasternum triangularly depressed. Intermediate femora provided at the third posterior part with a tooth of moderate size, but sharp; the intermediate tibiæ with a tooth in the inner side set before the apex.

♀. Metasternum convex. Legs simple.

Length 1.70-1.90 mm.

Hab. Pirie Mission. (District of King William's Town), Cape

Colony. Captured by Rev. G. Rogers in the papyraceous nest of the ant *Crematogaster peringueyi*.

This species is much larger, shorter, and thicker than *A. syriacus*, Sauc., which is met from Bokhara, Mesopotamia, and Palestine as far as Abyssinia. It would resemble more *A. 4-scopulatus*, Schf., from Sumatra, but it is much less elongated and less parallel, the punctuation on the head and prothorax is stronger, the antennæ are plainly longer, the fascicle of hairs on the hind margin of the elytra is much less thick, and finally the tooth of the intermediate tibiæ is at least three times smaller.

GEN. FUSTIGERODES.

FUSTIGERODES GIBBIVENTRIS, n. sp.

Robust and short, chestnut reddish lighter on the elytra; head and prothorax opaque, covered with large ocellate punctures bearing a short glandular seta, remainder of the body smooth and shiny; elytra with short squamose setæ, abdomen glabrous. Head longer than broad, sub-cylindrical, frons declivous and acuminate, epistome dilated, large, straight on the sides, almost quadrately truncate in front, tempora somewhat angular. Antennæ longer than the head and the prothorax taken together, joints 2 and 3 hardly longer than wide, 2 quadrate, 3 slightly obconical, 4 large, slightly more slender at the base, almost cylindrical, very slightly sinuate, truncate at apex. Prothorax transverse, rounded on the sides, base slightly angular, and having a weak furrow ending behind in a large fossa. Elytra longer than broad, but little narrowed at the base with shoulders rounded, and having 5 low, short carinules bearing each a series of glandular squamæ; posterior external angle broadly truncate, strongly reflexed and fasciculate opposite the abdominal prominence; posterior margin declivous, slightly arcuate. Abdomen as long as but broader than the elytra, rounded on the sides and behind, very strongly convex, almost gibbose, depressed on the sides with the lateral margin narrow but projecting as a rounded fold and bearing no fascicle of hairs; at the base there is a very large and deep cavity edged on each side near the lateral margin by a very strong, almost quadrangular excrescence obliquely truncate at the tip, and bearing along the elytra a brush of golden hairs, and a few setæ above them. Metasternum large, convex. Legs robust, short, little compressed; tibiæ thickening towards the apex, intermediate ones very slightly arcuate and provided beneath, before the apex, with a small and short spine. ♂.

Length, 2·20 mm.

Pirie Mission. (District of King William's Town), Cape Colony.
Found in the papyraceous nests of the ant *Cremastogaster peringueyi*.

This species differs from the others, *majusculus capensis wroughtoni*, and *auriculatus*, by its much shorter, broader, and thicker shape, the abdomen is still more convex, and a very distinctive character is the absence of the large tooth with which the intermediate tibiæ are generally provided underneath.

13.—*New South African Thysanoptera*.—By RICHARD S. BAGNALL,
F.E.S.

A SPECIES of South African *Anthothrips* has been kindly submitted to me for identification by Dr. L. Péringuey. I understand that this insect is an important factor in the cross-fertilisation of certain plants, and that a paper upon this most interesting subject has been published lately.* I may here remark that a common European Thrips (*Anthothrips statices*, Hal.), closely allied to the South African species, has been observed by me to carry pollen of certain Compositæ—such as the Sea Aster (*Aster trifolium*), the Dog Daisy (*Chrysanthemum leucophthalmum*), the Ragwort (*Senecio jacobæa*), and the Tansy (*Tanacetum vulgare*).

The South African form does not appear to have been described, and may be called *Anthothrips nigricornis*. In a future paper I hope to describe the species more fully, and also to figure the sexes.

ORDER THYSANOPTERA.

SUB-ORDER TUBULIFERA.

FAMILY PHLÆOTHRIPIDÆ, Uzel.

GEN. ANTHOTHRIPS, Uzel.

ANTHOTHRIPS NIGRICORNIS, sp. n.

♀. 2·0 mm.—2·7 mm. long; width of mesothorax about 0·45 mm.
General colour, shining black.

Head about as long as broad, smoothly rounded in front, longer than prothorax. Cheeks very gradually and slightly widened to

* Trans. Roy. Soc. S. Afric., I., 1909, p. 311.

base of head, and set with a few extremely minute spines. Eyes moderate, finely faceted. Ocelli large and well separated; posterior ocelli contiguous with margins of eyes; front ocellus placed at extreme vertex. Post-ocular bristles small. Mouth-cone decidedly shorter than its breadth at base; blunt at tip, and not reaching half-way across prosternum. Antennæ narrowly separated at base, not quite twice the length of head; joints comparatively short and stout; fourth joint thickest.

1	2	3	4	5	6	7	8
$\frac{1}{6}$	$\frac{2}{13}$	$\frac{3}{14}$	$\frac{4}{16}$	$\frac{5}{14.5}$	$\frac{6}{14}$	$\frac{7}{12}$	$\frac{8}{7.4}$

Colour brownish black; third joint lighter; spines and sense-cones short and inconspicuous.

Prothorax twice as broad (across the outer angles of the fore-coxæ) as long, with a long spine at each posterior angle. Mesothorax wider than the prothorax; sides of metathorax gently curved and very gradually narrowed to base of abdomen. Legs comparatively short, fore femora slightly thickened, and each fore-tarsus armed with a minute tooth; all tibiæ and tarsi brownish black. Wings always present.

Abdomen a little more than twice the breadth of head, from two and one-half to three times as long as wide; sides tapering gradually and evenly to base of tube from the fourth segment. Tube about two-thirds the length of the head, sides straight and only tapering slightly to apex. Terminal spines—namely, those on the eleventh abdominal segment—only one-half the length of tube. Abdominal spines long and slender.

♂. Similar to the female, but in general form smaller and more slender. Antennæ comparatively longer and more slender; fore-legs thickened and foretarsal tooth prominent. At each hind angle of the ninth abdominal segment there is a short, stout, and acute spine.

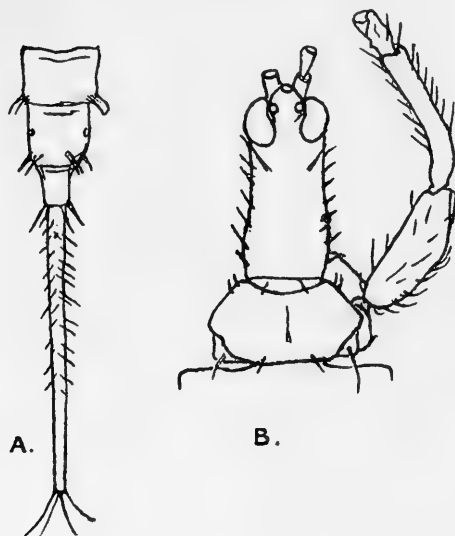
Hab. Numerous specimens from the flowers of *Europs*, *Diplopappus*, *Olipterus*, and *Sebæa*; Cape Town.

Dr. L. Péringuey has kindly communicated a single carded specimen of Thysanoptera for examination. It belongs to the genus *Panurothrips*, Bagnall, recently erected for the reception of *P. gracilis*, Bagnall, from Siam, and, on account of the exceptionally long tube, may be called *P. caudatus*.

FAMILY IDOLOTHRIPIDÆ, Bagnall.

GEN. PANUROTHRIPS, Bagnall.

PANUROTHRIPS CAUDATUS, sp. nov.



PANUROTHRIPS CAUDATUS, sp. nov.

A. End of abdomen $\times 20$. B. Head, prothorax, and right fore-leg $\times 40$.

Length about 5.8 mm.; breadth of mesothorax, 0.75 mm.

Colour black with brownish tinge in certain lights; tarsi and end of tube brown.

Head cylindrical, only slightly more than twice as long as broad near base; cheeks set with a few short slender spines, straight and slightly broadened before base; vertex raised and produced into a blunt conical hump, at the extremity of which is seated the anterior ocellus. Eyes comparatively large, moderately finely faceted and bulging slightly; postocular bristles short. Ocelli reddish yellow; large and practically equidistant; posterior pair placed on a line drawn through the eyes near their anterior margin and close to their inner margins, but, owing to the raised vertex, they are on a higher level than the eyes. Antennæ inserted beneath vertex and approximate at base; first joint cylindrical, black; second longer than first, cylindrical, narrowed at base, and yellowish brown in colour; rest of antennæ unfortunately broken in the type specimen.

Prothorax about one-half as long as the head, distinctly transverse and shaped as in *P. gracilis*, Bagnall. Spine at each posterior angle small; posterior marginal pair minute, and two or three similar setæ at each anterior angle. Pterothorax broader than wide across fore coxæ, and one and three-quarter times the breadth of the prothorax; mesothorax strongly transverse, and the metathorax with the sides strongly arcuate and narrowing to base of abdomen. Wings reaching nearly to the apex of the seventh abdominal segment, broad; tinged with yellow and iridescent in a strong light; cilia shaded with brown. Legs with tibiæ shorter and stouter than is usual in the Idolothripid group; fore femur slightly thickened, inner edge straight and outer edge curved; fore tibia only slightly longer than the femur and fore tarsal tooth obsolete; hind legs the longest, and with tibia decidedly longer than the femur. All femora with a few inconspicuous spines and tibiæ with rows of fine setæ; hind and intermediate tibia with one or two strong spines at tip within and also a few moderately long bristles.

Abdomen long, more than three-quarters the length of the whole insect; segments subtransverse excepting the ninth, which is elongate and cylindrical and much narrower than the preceding segment. Tube exceptionally long and slender, curved upwards, and gradually narrowed towards tip; as long as the preceding five segments together, at least twelve times as long as breadth at base, seven times as long as the ninth segment, and more than two and one-half times the length of head; surface roughened, but smooth near tip, sparingly setose, terminal hairs weak. Abdominal spines stout, those on ninth segment only slightly longer than the others.

P. caudatus may be easily recognised from *P. gracilis*, Bagnall, by its colour and larger size, the subtransverse abdominal segments, the much longer tube, the comparatively shorter spines of the ninth abdominal segment, and many other distinctive characters.

Type. A single dried and carded example, apparently female, in the South African Museum, Cape Town.

Hab. Knysna, Cape Colony.

NOTE.—The specimen was obtained from among somewhat dry leaves of *Curtisia fraginea*, forwarded by Mr. E. J. O'Connor of the Cape Forest Department, in order to ascertain whether the numerous galls covering them were caused by Cecydomiid flies, gall-making Hymenoptera or Aphidæ, or simply by fungi. The production of these galls was found not to be due to fungi; and certainly not to the action of terebrantious Hymenoptera. These galls might have been produced by Aphidæ, but the presence of *Panurothrips caudatus* leads one to conclude with some amount of reason, that the galls were produced by the Thrips.

- 14.—*List of the Species of the Coleopterous genus Apion (Curculionidæ) in the Collection of the South African Museum, and Descriptions of New Species.*—By L. BÉGUIN BILLECOQ, Memb. Soc. Entomol. France.

GEN. APION Herbst.

- A. africanum* Gyll.
Natal: Durban.
- A. albolineatum* Wagner.
Natal: Estcourt
- A. angulicolle* Gyll.
Transvaal: Leydenburg.
- A. arrowi* Wagner.
Cape Colony: Rondebosch, Constantia.
- A. asphaltinum* Boh.
Natal: Durban. Rhodesia: Sebakwe.
- A. caffrum* Boh.
Cape Colony: Hex River.
- A. considerandum* Fähr.
Natal: Durban, Malvern. Rhodesia: Sebakwe.
- A. constrictum* Hartm.
Rhodesia: Sebakwe.
- A. crinitum* Wagner.
Cape Colony: Cape Town.
- A. crusculum* Faust.
Transvaal: Johannesburg.
- A. geminum* Wagner.
Natal: Frere.
- A. hemisphæricum* Wagner.
Cape Colony: Cape Town.
- A. humerosum* Péringuey.
Damaraland.
- A. rhodesiacum* Wagner.
Natal: Estcourt.

- A. rostrale* Wagner.
Cape Colony : Kentani.
- A. rufipes* Gyll.
Cape Colony : Cape Town.
- A. spadiceum* Wagner.
Natal : Estcourt.
- A. squamulatum* Gyll.
Cape Colony : Rondebosch.
- A. transvaalense* Hartm.
Rhodesia : Sebakwe.
- A. vetulum* Hartm.
Natal : Estcourt.
- A. (Peripion) antiquum* Gyll.
Cape Colony : Robben Island.
- A. (Perapion) ledouxi* Wagner.
Natal : Estcourt.
- A. (Conapion) flexuosum* Wagner.
S. Rhodesia : Sebakwe.
- A. (Conapion) globulipenne* Wagner.
S. Rhodesia : Sebakwe.
- A. (Conapion) recurvum* Wagner.
S. Rhodesia : Sebakwe.
- A. (Conapion) tenuicorne* Wagner.
S. Rhodesia : Salisbury.
- A. (Pseudopiezotrachelus) ripicola* Hartm.
S. Rhodesia : Sebakwe.
- A. (Piezotrachelus) angustithorax* Wagner.
Cape Colony : Stellenbosch.
- A. (Piezotrachelus) cælebs* Wagner.
Natal : Malvern.
- A. (Piezotrachelus) foveicolle* Hartm.
Cape Colony : Hope Town.
- A. (Piezotrachelus) fronto* Wagner.
Cape Colony : Tulbagh.
- A. (Piezotrachelus) fuliginosum* Wagner.
S. Rhodesia : Sebakwe.
- A. (Piezotrachelus) hamiferum* Wagner.
S. Rhodesia : Salisbury.
- A. (Piezotrachelus) helleri* Wagner.
Zululand : Eshowe.
- A. (Piezotrachelus) herbsti* Gyll.
Cape Colony : Stellenbosch

- A. (Piezotrachelus) magnirostre* Wagner.
S. Rhodesia: Sebakwe.
- A. (Piezotrachelus) microcephalum* Wagner.
S. Rhodesia: Salisbury.
- A. (Piezotrachelus) opulentum* Wagner.
S. Rhodesia: Sebakwe.
- A. (Piezotrachelus) schoudeteni* Wagner
Var. *salisburyense* Wagner.
Natal: Durban.
- A. (Piezotrachelus) umbratum* Wagner.
S. Rhodesia: Sebakwe.
- A. (Piezotrachelus) uncipes* Wagner.
Cape Colony.
- A. (Piezotrachelus) varium* Wagner.
Natal: Estcourt.
- A. (Piezotrachelus) varium* Wagner.
Var. *rugulicolle* Wagner.
Transvaal: Parys.

GEN. APION Herbst.

APION (sbg. RHINAPION L.B.B.) PERINGUEYI, n. sp.

Length, 4 mm. (rostr. incl.).

Nigrum, glabrum, haud nitidum praesertim in rostro (illo vero apice subnitido). Rostrum subulatum, basi ad latera profunde striato-punctatum, supra punctatum, in medio punctulatum, apice fere leve. Oculi haud prominentes. Tempora breviora. Prothorax subconicus, fortiter atque sat crebre punctatus. Elytra basi carinata, intervallis minutissime biseriatis. Pedes validi.

1 ♀.

Hab. Mozambique (Rikaka). Rev. H. Junod.

This species is evidently allied to *A. (Rhinapion) pauxillum* L.B.B. from Madagascar, in shape and colouring, but it differs in the greater size, the more superficial interocular furrows, and the punctures which are larger and more closely set.

APION HIRTISSIMUM n. sp.

Length, 3.2-3.4 mm.

Obscure brunneo-rubrum pedibus dilutioribus, haud nitidum, rostri basi, capite, thorace, elytris pedibusque pilis nigris erectis sparse instructis. Caput subconicum, vertice paulo dilatato, fronte

plana, punctulata. Oculi parvi, modice prominentes. Rostrum fere rectum, gracile, subcylindricum, basi incrassatum; ♀ longissimum (capite cum thorace longius); ♂ brevius, crassius (capite cum thorace vix æquilongum). Antennæ ante medium insertæ, gracillimæ, scapo longo, lineari, apice vix incrassato, articulo primo scapo haud latiore, articulis reliquis gracillimis, clava parva. Prothorax subconvexus, post medium coarctatus, lateribus rotundatus, postice attenuatus, dense rudeque punctatus. Elytra convexa, prothoracis basi non nullo latiora, sat elongata, fere parallela, apice obtuse rotundata, striis latis punctis magnis, intertitiis angustis, subcostatis. Femora subglobosa. Tarsi elongati, robustiores, unguibus dentatis.

Hab. Cape Colony: Cape Town.

APION EXIMIUM n. sp.

Length, 5 mm. (rostr. incl.).

Cærulæo metallescens, parum nitidum, antennis rostroque nigris, elytris, temporibus femoribusque setis nigris erectis instructis. Caput elongatum, subconicum fronte rugose punctata, rostri basi angustiore. Oculi parvi, parum prominentes. Rostrum modice arcuatum, capite cum thorace brevius, triente basali incrassatum, dein fere subito subcylindricum, apice incrassatum, fere leve, nitidum. Antennæ hispidæ, scapo gracili, apice parum inflato, articulo 1° plus duplo longiore, illo oblongo, 2°-3° elongatis, subæqualibus, 4° brevioribus, 5° fere quadrato, 6°-7° subglobosis, clava elongata, triarticulata. Prothorax antice et postice coarctatus, lateribus dilatato-arcuatus, convexus præsertim in medio, disco grosse rudeque punctatus, foveola basali lata, profunda. Scutellum parvum, subtriangulo. Elytra oblongo-ovata, triente apicali attenuata, basi thorace multo latiora, humeris rotundata, profunde striato-punctata, intertitiis subconvexis, striis haud latioribus. Femora modice clavata, subtus spina erecta armata. Tibiæ rectæ, sulcatæ. Tarsi robusti, pilis suberectis instructi.

Hab. Cape Colony: Cape Town.

I am greatly indebted to Herrn Wagner, of Zurich, for the great help given me in the identification of the species of this very intricate genus.

- 15.—*Description of a New or Little Known Species of the Hemero-
biidæ (Order Neuroptera) from South Africa, with Plates VII.-IX.*
—By L. PÉRINGUEY, D.Sc., F.E.S., *Director.*

SUB-FAMILY MYRMELEONIDES.

GEN. PALPARES, Ramb.

PALPARES CATARACTÆ, n. sp.

Plate VII., fig. 3.

HEAD with the whole anterior face pale flavous, whole vertex dark drab or deep fuscous, antennæ wholly black; thorax very robust, width equal to three-fourths of the length, very dark fuscous, nearly black but with four sub-flavescent macules on the mesonotum, and the metanotum more distinctly variegated with yellow; the head is nearly glabrous, but the thorax is clothed with a black erect pubescence turning to flavescent white on the sides and metanotum; abdomen very long in the ♂, but shorter than the fore wings, even with the clasps included in the total length, and very little more than half the length in the female, flavescent on the centre of the upper side only, otherwise fuscous; genital clasps of the usual curved shape, and as long as the ultimate abdominal segment; legs very bristly and also pubescent, tibial spurs somewhat divaricating and slightly curving downwards; if straight they would reach as far as the third joint.

Wings hyaline with fuscous spots, macules, and bands; they are narrower in the male than in the female, with the posterior edge plainly sinuate, about two-thirds of the length, and the basal callus of the median costa is strongly developed and flavescent. In the anterior wings the costal area is regularly spotted with fuscous for more than half the length, maculated thence to the pterostigma which is very little distinct; the basal part of the area is irregularly maculated with fuscous, all the nervules are narrowly infuscate, and there are four much interrupted fuscous cross bands; a supra-basal broadly interrupted in the centre in the ♂, bi-interrupted in the ♀;

an ante-median one somewhat narrow, and almost indistinct towards the hind border in the ♂; the third one which is set past the middle is reduced to a broad, quadrate patch, and the ante-apical one is also interrupted, and very irregular; hind wings more evenly hyaline and the bands less interrupted, the basal and the ante-median ones do not invade the costal area which the other two do, the first is bi-incised on each side, the second also, but less deeply, and reaches the hind border, the third and broadest of all, encloses two hyaline areas, the fourth is apical, and is speckled at the very apex with a few hyaline dots; along the hind border is a series of black macules, some of which, mostly quadrate, merge into the cross bands.

Length of body ♂ append. excl. 62 mm.; ♀ 49 mm.; width: fore wings expanded 128–146 mm.; hind wings 122–134 mm.

Allied to *P. moestus*, Hagen, but in the latter both wings are much more deeply sinuate in the hind border, the basal cross band of the fore wing is much more indistinct, and in the hind wings the first supra-basal cross band is entirely absent.

Hab. Southern Rhodesia (Victoria Falls). H. Fry.

PALPARES MOSAMBICUS, n. sp.

♂. Head fuscous brown with the epistome and labrum yellow; antennæ somewhat long, entirely black; prothorax fuscous brown but with three lighter patches on the metanotum, clothed with greyish white pubescent hairs, denser on the meso- and meta-sternum; abdomen yellow on the upper side. Wings of nearly equal size, pale flavous; anterior ones moderately acuminate at apex, with the hind border slightly sinuate at about three-fourths of the length; the costal area is normally divided by simple nervures from the base to about the median part, but from there the nervules are forked in the anterior part; the whole costal space is tessellated with fuscous brown from the base to the pterostigma which is flavous and conspicuous, and there are on each wing four slanting, fuscous brown, diagonal bands; the first is supra-basal, and consists of agglomerated sub-quadrate patches somewhat tessellated and continued on the intervals of the 4–6th nervures as far as the base; the second band reaches from the median nervure to the hind border, and is deeply emarginate outwardly, the third reaches only the centre of the discoidal area and is not quite connected with the median nervule, the fourth begins at the pterostigma, is somewhat ill-defined, and is not distinctly continued beyond two-thirds of the width, the apical part is maculated with light fuscous, very small

patches, and the hind border is somewhat broadly tessellated with fuscous; hind wings a little shorter than the anterior, plainly narrowed in the basal part, ampliate at about one-fourth of the length, the discoidal area is hyaline flavescent for the same length, and each bears two broad slopingly longitudinal discoidal bands, the first of which is transversely broadly dilated along the hind border, the dilatation enclosing there two transparent patches, and connected by a narrow ramus with the second discoidal band which is of nearly equal width, but encloses along the hind border a small ovate patch, the third, somewhat triangular band has invaded the whole apical part, but encloses a crescent-shaped hyaline space, and two or three hyaline flavescent spots; the abdomen is one-fifth shorter than the hind wings, the clasps (σ) are of the normal shape, and as long as the penultimate segment; the legs are very stiffly and densely bristly, the tibial spurs are as long as the two anterior joints taken together. The nervures are flavescent in both wings, and the fifth and sixth intercostal spaces are tessellated in the disk with light fuscous and white.

The colouration of the wings and the disposition of the bands and patches and spots closely resemble that of *P. elegantulus*, especially on the hind wings, but in the fore wings the apical band is not broadly divided longitudinally in the centre as in *P. elegantulus*, in which also the nervures of the costal area are not forked at apex except after the pterostigma.

Length of body, append. excl. 42 mm.; of fore wings, expanded 42 mm.; hind wings 40 mm.

Hab. Mozambique (Lourenço Marques). Howard.

PALPARES KARROOANUS, n. sp.

Plate VIII., fig. 6.

σ φ . Head pale fleshy and having on the vertex a broad fuscous band continued on the thorax; a similar lateral one on the pronotum; on the mesonotum there are on each side of the median fuscous band a narrower one, and outside of it an elongated spot; the head is briefly pubescent greyish in the frontal part, and very briefly setulose in the centre of the vertex; the edges of the strongly constricted pronotum are thickly fimbriate bristly, and the rest of the thorax above and below densely greyish hairy; antennæ completely black; palpi slightly infusate at tip, spindle-shape, very acute at tip; abdomen sub-rufescent on the upper side, black beneath; appendages of the σ somewhat long, being nearly equal in length

to the penultimate segment, and thickening towards the apex; abdomen nearly glabrous except on the first and second basal segments; legs very bristly; spurs very long; wings very sharply acuminate at tip, somewhat narrow and with the hind borders not sinuate; anterior wing hyaline and having three slanting fuscous bands and an horizontal apical one, the basal part is very numerously spotted, and from the base to the first band there is an horizontal infusate bar, coalescing with the first band which in turn is broadly disconnected from a somewhat wide patch situate on the hind border, the second is strongly bi-sinuate, the third is first vertical, then very slanting, but all three bands are united in the centre of the disk by a longitudinal, not very even infuscation, the apical narrow discoidal band seems to be the prolongation of this infuscation; above it from where the perostigma, which is absent, should be, extends a long, lanceolate fuscous band nearly reaching the apex; costal nervure closely maculated from the base to the principal sectors, and slightly above the hind border runs an uninterrupted line of black macules, the border itself being regularly speckled.

Hind wings as sharply acuminate as the anterior; the greatest part of their area is fuscous black, but the costal and sub-costal areas are hyaline from the base to the principal sector but with regular slanting patches in the former, and a hyaline elongated one near the principal sector; the base is partly hyaline; there are 3, 2 and 3 superposed hyaline patches which are plainly what is left of the space that divided the fuscous area into three sub-vertical bands; towards the apex there is a very long stiliform patch somewhat dilated at the base, and the upper part of which is connected with the hyaline part on the principal sector; the extreme border is maculated with hyaline and fuscous spots from about the middle to the apex.

Width: fore wings expanded 108-118 mm.; hind wings 95-112 mm.; length of body append. excl. 38-48 mm.

Hab. Cape Colony (Fraserburg, Beaufort West).

Resembles somewhat *Crambomorphus* owing to the sharply pointed wings, but they are not sinuate as in that genus.

PALPARES ELEGANTULUS, n. sp.

Plate VII., fig. 4.

♂ ♀. Anterior part of head flavous, vertex somewhat pale flavous but almost completely covered by a broad light fuscous patch in both sexes; antennæ dark fuscous, the base with a small

flavescent patch; labial palps extremely long, apical joint gradually thickening towards the tip, but not at all tapering there in the manner of the majority of the species of *Palpares* known to me; prothorax sub-fulvescent with the customary three fuscous black patches, more than twice longer than broad in both sexes; pronotum plainly bi-impressed transversely; abdomen, clasps included, as long as the fore wing in the ♂, shorter by one-third in the ♀, and plainly yellowish; the clasps in the ♂ nearly as long as the ultimate segment, moderately arcuate and of the usual type. Head glabrous; pronotum fringed in front and on the sides with rigid black hairs, the remainder of the thorax above and below clothed with a moderately thick, long greyish pubescence; abdomen briefly and sparingly setulose.

Wings hyaline, of similar shape in both sexes, and ornamented with fuscous brown patches, spots and bands; the nervules are pale flavescent. Fore wings: Costal area with a row of spots, set on each nervule, from a short distance from the base to the pterostigma which is short, flavescent, and is followed by a triangular patch, which does not reach the apical turn of the wing; the sub-costal area is very narrow, and without fuscous patches in the ♂; there are three fuscous brown bands, the ante-median, narrow in the male, broader in the female, is interrupted towards the hind part, the second reaches only to two-thirds of the width, the third, a nearly apical one, is broadly interrupted in the centre, the upper part coalescing with the post-pterostigmal patch, the lower reaching nearly the hind border; along the fourth longitudinal rib runs a series of semi-connected fuscous spots reaching from near the base to the first cross band, and the whole hind border and also the apical fore border is speckled with closely set fuscous brown dots.

Hind wings slightly shorter than the anterior, hyaline and having three cross fuscous brown bands extending across the whole width of the disk; the first is greatly dilated transversely in the centre, and there is beneath it along the border a small dot or patch with which it sometimes coalesces, being thus bifurcate on the hind part, the second one, equally broad, is united in the central part by a narrow ramus with the first, and somewhat incised near the hind border, the third is apical and plainly divided longitudinally in the centre in the ♂, but only incised in the ♀, and encloses at the very apex a hyaline but pluri-dotted space.

Legs flavescent, with some black spines and greyish hairs; tibial spurs nearly as long as the three basal joints, straight, very little inflexed.

Length of body append. excl. 34–39 mm.; width: fore wings expanded 64–94 mm.; hind wings 66–83 mm.

Hab. Cape Colony (Carnarvon), E. G. Alston; Matjesfontein (Beaufort West).

This species might at first sight be taken for *Palparidius capicola* owing to the colour and markings of the wings, but it is a true *Palpares*.

PALPARES GENIALIS, n. sp.

Plate VII., fig. 2.

♀. Head and thorax drab colour, only the anterior part of the head above the labrum narrowly transversely sub-flavescent, on each side of the metanotum is a somewhat small lighter patch; the whole thorax is moderately thickly greyish pubescent, the hairs fringing the border of the pronotum are, however, black and erect; abdomen yellow, slightly infuscate laterally on the two basal segments; antennæ black; legs black, strongly and numerous spinose, the tibial spurs are not quite as long as the three basal tarsal joints and not distinctly incurved.

Wings sub-obtusely rounded at tip, yet angular at the very apex; anterior ones a little wider than the posterior, and plainly longer; they are flavescent except for two wide discoidal areas, the cells of which, however, have a broad square yellow central patch; but all the infuscated cells, which form a tessellation impossible to describe accurately but which is well shown in the figure, have a pale yellow centre, and when, as in the apical part, the infuscation has invaded the whole cell, the cross nervules are pale flavescent. The costal area is conspicuously tessellated with fuscous; all the nervures and also the nervules are infuscate; at about one-fourth of the length is a cross yellow band reaching from the costal area to the hind border, broadly edged with a fuscous tessellation; a little further is a quadrate patch of the same colour reaching from the median to nearly the sub-median nervure; at about the middle is a third band or patch also flavous, and separated from the preceding one by a broad tessellated fuscous interval, and from an ante-apical uninterrupted, plainly yellow band which reaches from and includes the yellow pterostigma, to the hind border; the infuscate apical part is tessellated with yellow macules; along the hind border is a series of elongate, sub-vertical yellow patches extending from a third of the length to a short distance from the supra-apical, entire, yellow, cross band. Hind wings with the nervules of the costal area fuscous from the base to past the median part; they are hyaline with a flavescent

tinge much less conspicuous than in the anterior wings, and they have each three broad fuscous bands reaching right across; the first and second are similar in shape and broadly tri-furcate towards the hind border, the third band is apical and encloses an arcuate juxta-apical hyaline band and two or three hyaline spots along the fore border; the first fuscous band does not invade the costal area although abutting on it, but the other two reach from the fore- to the hind-border.

Length of body 42 mm.; width: fore wings expanded 92 mm., hind wings 92 mm.

Hab. Limpopo River. E. W. Eriksson.

PALPARES OVAMPOANUS, n. sp.

Plate VII., fig. 1.

♀. Head fuscous black with the labrum sub-flavescent; antennæ black; thorax fuscous black with a less obscure patch on each side of the metanotum, moderately densely villose, the erect pubescence on the pronotum fuscous, on the sides of the mesonotum and on the pronotum whitish and somewhat lanuginose; abdomen yellow, but fuscous below, and also on the upper side of the three terminal segments; legs black, numerously spinose, tarsal spines longer than the two basal joints.

Wings moderately obtusely rounded at apex but with the very apex somewhat acute, light fuscous but marked with flavescent sub-hyaline dots, patches, and bands. Anterior wing: costal spaces with a short series of flavescent macules, pterostigma transverse, yellow; at the base is a broad sub-quadrate yellow patch reaching from the sub-costal nervure to a short distance of the hind border, a narrow, cross, slanting band of the same colour, a wide hyaline discoidal area traversed at about the centre by a longitudinal yellow band, continued slantingly to near the hind border, and at about the sixth of the length a somewhat similarly narrow band of the same colour coalescing with the pterostigma and nearly reaching the hind border, at the very apex of the wing is a small yellow patch; all the cells are deeply infusate and the inner space flavous; along the hind border and at a short distance from the edge is a series of elongated, small, yellow macules. Hind wings a little narrower than the anterior, completely fuscous with the cells forming a light yellow tessellation; at the base is a large hyaline flavescent area extending from the base to one-third of the length; slightly past the middle is a sub-quadrate discoidal yellow patch broadly disconnected from a smaller one set close to the hind border, but which probably often

coalesces, forming a whole band; a narrow uninterrupted yellow band, reaching from the fore border to a very short distance of the hind one, a juxta-apical yellow macule; nearly below the median yellow patch and situate close to the hind border is a transverse macule and between the apical patch of the second band and the third one a minute yellow dot.

Length of body 40 mm.; width: fore wings expanded 92 mm., hind wings 85 mm.

Hab. Ovampoland, Omrumba. A. W. Eriksson.

PALPARES DUBIOSUS, n. sp.

This species is so closely allied to the well-known *P. speciosus*, L., that I hesitated to separate it as long as I had only female examples, but now that I have seen two male examples I have no longer any doubt that the two are different. A characteristic of *P. dubiosus* is the constant, smaller size. The colouring of the wings and body is the same, but the hind wings are more flavescens, and they have not along the posterior border of the hind wings the conspicuous black tessellation of *P. speciosus*; in the ♂ the clasps are much longer and more slender than in *P. speciosus*, being almost in the shape of a tuning-fork.

In the six examples that I have seen the sub-basal black median patch of the hind wings stands by itself as in the great majority of examples of *P. caffer*, Burm., from which, however, this species differs more than from *P. speciosus*.

It seems to replace the latter in the north-western part of the Cape Colony, although assimilating somewhat to examples from Namaqualand.

It is recorded from Touw's River (D. P. Lefebre), Clanwilliam (L. Leipold); Bushmanland (G. Alston), Kimberley (M. Wilman).

Length of body 38-59, of fore wings expanded 72-87 mm., of hind wings 70-80 mm.

PALPARIDIUS, n. gen.

Resembles *Palpares*, but separated from it by the absence on the posterior wings of the triangle-shaped furcation of the posterior cubitus, the *recurrens* or retrograding vein of Kolbe, and thus resembling the neuration of *Crcagris*, and also by the very singular shape of the clasping organs of the male, the superior part of the appendages of which is produced into two very long cylindrical processes densely hairy especially in the inner part.

PALPARIDIUS CAPICOLA, n. sp.

Plate VII., fig. 5.

Head of a greyish colour slightly edged with flavescens, labrum, forehead, vertex, and legs flavous, antennæ entirely black, broadening considerably towards the apex; thorax ashy grey, with four or five sub-flavescens patches on the discoidal part; abdomen sub-flavescens with longitudinal broad fuscous black bands; wings hyaline with the patches fuscous, cross veins sub-flavescens or light brown, speckles distinctly brown. Fore wings each with three cross bands and a sub-basal spot, the first, sub-median, and the second, post-median bands are incised inwardly somewhat in the shape of a hook in the male, but in the female the first one is not distinctly hooked; the third one is more or less sharply triangular, somewhat in the shape of an arrow, and connected at the upper basal part with the pterostigma which is flavescens for a very short distance and fuscous afterwards; on the basal part of the disk are a few spots; the hind border has a continuous series of them, and the nervules of the costal space are speckled with brown at the base. Hind wings also with three cross bands corresponding to the position of those of the anterior wings, but broader and therefore better defined; the first one, also hooked, extends from the border to three-fourths of the width; the second extends over the whole width, is strongly zig-zagged, and even occasionally narrowly interrupted in the centre, the upper part abuts on the distinct, elongated, flavescens white pterostigma, the apical band encloses a narrow hyaline spot, the hind border is edged with continuous macules from half the length to the apical band. Head and thorax sparsely, abdomen densely but briefly bristly and hairy, the bristles black, the hairs whitish; legs bristly and spinose. The arcuate, dilated basal part of the clasping organs of the ♂ has inwardly two parallel hairy lobes, filling half the circumscribed space.

Length of body 29–31mm.; clasps of ♂ 11 mm.; fore wings expanded 70–81 mm.

Hab. Cape Colony, Carnarvon (Wyk's Vlei), G. Alston; Beaufort West (Hottentot River), A. R. Walker.

PALPARIDIUS CONCINNUS, n. sp.

♂. Head yellow with a triangular fuscous macule on the vertex; prothorax flavous with three longitudinal sub-interrupted fuscous bands; legs yellow, abdomen yellow, with two broad lateral fuscous bands on the upper side and a broader one underneath; clasps

flavescent; antennæ fuscous with the two basal joints and the pedicel flavescent.

This species would at first sight appear to be a varietal form of *P. capicola*, with the spots or bands on the wings less deeply infuscate and a little more irregular, but the genital clasps of the ♂ are very different in both species, although built on the same pattern. In the fore wing all the nervules of the intercostal space are transversely spotted at the base along the sub-costal nervule, the intervening parts of the latter being white, the pterostigma is white flavescent as in *P. capicola*; the sub-basal spot is wanting; the first band is patch-like and very narrow, the second band is also hooked inwardly, the apical one is as in *capicola*, but above it are numerous specks, and the hind border has two rows of minute specks from the first anterior third to the apex; in the hind wings the first transverse patch is very narrowed, somewhat ill-defined and not hooked; the second is divided into three broadly disconnected patches, the apical one is made of numerous specks with a sub-horizontal, more distinct patch, and towards the apex there are a few specks along the hind border. The clasping organ of the ♂ is only slightly diverging at the base and without any inner lobe there, instead of being sub-orbicular; it is much less bent downwards at the base, and is also proportionately longer. The female does not differ from the male, but the wings are longer.

Length of body 25 mm.; clasps 13 mm.; fore wings expanded 75–89 mm., hind 72–81 mm.

Hab. Transvaal (Potchefstroom), Harold Fry; Bechuanaland.

GEN. ACANTHACLISIS, Ramb.

ACANTHACLISIS MASHUNENSIS, n. sp.

Drab colour mixed with ashy grey, clothed on the head, thorax and legs with dense black and greyish-white hairs, with the grey ones predominating; antennæ with the joints fuscous and banded with white, the three basal joints flavous; epistome bright yellow, palpi also yellow but the ultimate joints are infuscate at apex, frons with a thick bunch of greyish hairs, the vertex infuscate; pronotum sub-flavescent, with a median truncated cone-shaped fuscous band, and a narrow one laterally; meso- and metanotum indistinctly banded; abdomen wanting; wings long, hyaline, with the apical lower margin slightly sinuate at apex, the costal area with one row of cells which is, however, duplicated at two-thirds of the length; space between the two median, parallel, nervures lacteous; at their

junction is a very small horizontal narrow fuscous patch, and a conspicuous one with a hyaline centre close to the bifurcation of the hind cubitus, and a smaller fuscous dot in the same position in the hinder wing, but as the bifurcation is there shorter the dot is nearer the base; all the nervures and nervules are whitish flavescens, interrupted by fuscous bands, and all bristling with fuscous and flavescens stiff hairs; the femora are rufescent, the tibiæ sub-flavescens, and the tibial spurs are turned inwards, and hooked almost at right angles at apex.

Length of body (?), of fore wings expanded 102 mm., of hind wings 87 mm.

This species is not unlike *A. dasymalla*, Gerst, but the neuration of the wings is more flavescens, the fuscous markings are quite different, and the shape of the spurs differs greatly.

Hab. Southern Rhodesia (Salisbury). G. A. K. Marshall.

ACANTHACLISIS LINEATIPENNIS, n. sp.

Plate VIII., fig. 8.

♂. Colouring and vestiture of *A. mashunensis* differs, especially by the colour pattern of the fore wings; all the nervures and nervules are flavescens, and interrupted by longitudinal black bars; they are long, plainly sinuate in the lower margin at apex, and they have no distinct trace of pterostigma; the sub-costal and marginal nervures are distinctly separated from the base to the position of the stigma, the costal area has a single row of cells, of which three or four become furcate near the apex of the sub-marginal costa, where it unites with the radial, and along the centre of the wing runs a narrow deep fuscous brown line, slightly sinuate at the end and reaching from the base to a short distance from the apex; legs brownish red; tarsal spurs long, the upper part bent at right angles, forming thus a very sharp hook.

Length of body 35 mm.; of fore wings expanded 96 mm., of hind wings 80 mm.

Hab. The habitat of the single specimen in the Museum Collection is not recorded, but I have seen another example from Bechuanaland.

GEN. MYRMELEON, Linn.

MYRMELEON BOSCHIMANUS, n. sp.

Plate IX., fig. 10.

Light drab with the thorax somewhat flesh-coloured and with numerous fuscous macules; antennæ concolorous, flesh-coloured;

wings transparent but with all the nervures and nervules of a drab colour, as well as with brown macules and patches. Head with a black central fuscous patch between the antennæ, and nine such patches on the vertex arranged in longitudinal series of three, which do not seem to coalesce in the three examples I have seen; pronotum with three distinct uninterrupted fuscous bands and a very small fuscous dot on each side, mesonotum with on each side three fuscous black bands ending past the middle, a broad central band and on each side of the hind part two superposed macules; metanotum with a somewhat narrow median band and a broader lateral one wider at the base than at apex; legs very narrowly ringed at apex of femora and tibiæ; tibial spurs absent. The fore wings bear, each past the first anterior third two oblique brownish bands, the first of which is reduced to small macules, whereas the second, which is almost median, is more distinct, and also a third, past median band much better defined but usually interrupted in the middle, and bounded by the white stigma, which is somewhat elongated; the whole of the apical area is numerously maculated; the hind wings have each two or three macules set slightly before the median part, and a past median broad band occasionally interrupted in the middle in the ♂, with the lower part prolonged horizontally along half the width of the posterior part and continued to the apex as small macules, while the upper part of that band is divided by a moderately broad sub-lacteous interval from a plain, sub-quadrate large patch reaching short of the apex. The nervules and nervures are briefly hairy and the margins very briefly fimbriate.

Length of body: ♂ $18\frac{1}{2}$ mm., ♀ 15 mm.; fore wings expanded 19–24 mm., hind wings $16\frac{1}{2}$ –22 mm.

Hab. Cape Colony. Carnarvon District (E. G. Alston); Bushmanland (G. Alston); Damaraland (F. Hodson).

MYRMELEON OBTABILIS, n. sp.

Bright yellow; antennæ fuscous with the two basal and the four apical joints yellow; head with two conspicuously raised prominences on the vertex, on the space between the antennæ is a triangular black patch, and a small black dot on the declivous hind part of each of the knobs; pronotum with a black median band contracted in the centre, and a dot on each side; mesonotum with two short diverging basal macules in the centre, a large one on the scutellum and two or three small and irregular on each side; metanotum with five black macules; abdomen infusate, the dorsal segments flavescent for about half the length, apical segment and

clasps (♂) totally flavescent; wings lacteous with the median part occupied by a pinkish-fleshy band occupying the median part of the area, and of the same shape as the wings themselves, which are acuminate at apex; the costal area of the fore wing is closely tessellate from near the base to the stigma, which is sub-flavescent, the rounded margin being dotted with a series of small spots; along the post-costal nervure is a series of sub-equidistant small macules reaching also from near the base to below the stigma, the hind lacteous part of the wings and also the apical are sprinkled with numerous small black dots; in the hind wings the costal area is spotless, except for a tiny spot at the furcation of the rami, the post-costal has three black macules, and the hind lacteous part a series of small macules, which do not reach the lower margin; all the nervures and nervules bear sharp, arcuate, erect, rigid bristles, and the margins are very briefly fimbriate; legs yellow with the coxæ, the knees, the apex of the tibiæ, and tarsal joints and the claws black.

Length of body (♂) 19 mm.; fore wings expanded 48 mm.; hind wings 43 mm.

Hab. Cape Colony (Caledon), R. M. Lightfoot.

I know of no ally to which this pretty South African species could be compared.

GEN. CREAGRIS, Hag.

CREAGRIS INCLITUS, n. sp.♂

Head and thorax yellow, but occasionally duller; the abdomen and legs are sub-rufescent and concolorous; wings hyaline with a narrow elongate pterostigma somewhat pale brown in the anterior, posterior ones much longer than the anterior and with a median longitudinal slightly fuscous brown, narrow band towards the apex. Antennæ light brown, very long in the ♂, being one and three-quarters the length of the thorax, less elongated in the ♀, but still very long, and with the apical joints slightly acuminate; labrum flavous, frons fuscous, vertex highly raised, fissured in the centre and with a faint, broad fuscous median band continued in the centre of the pronotum; the meso- and metasternums are more or less distinctly fusco-maculate; the abdomen is very long in the ♂, much less so in the ♀; the wings are much longer than the body, hyaline, with the nervures and nervules flavous, the fore wings are narrow, sharply acuminate at apex with a slight sinuation there in the hind margin, the pterostigma is narrowly elongate and somewhat light brown; the hind wings are much narrower and much longer than

the fore wings, sharply acuminate, with the hind margin still more narrowed towards the apex for about one-fourth of the whole length, and they have each towards the apical part a short, quite median, light brown longitudinal streak reaching the tip, and in some examples extending to about one-fourth of the length; legs concolorous, tibial spurs reaching the base of the third joint of the tarsi.

The shape and markings of the wings approximate this species to *C. diana*, Kolb.

Length of body 37-48 mm.; of wings expanded: fore 79-95, hind 81-99 mm.

Hab. Natal, Maritzburg; Howick (J. Cregoe); Southern Rhodesia, Salisbury (G. A. K. Marshall).

CREAGRIS PROXIMUS, n. sp.

This species resembles *C. inclitus* in so many respects that I was for some time somewhat in doubt as to its identity. But having now obtained both sexes, I think it can be considered as a distinct species.

It is much smaller than *C. inclitus*; the wings, which are also hyaline with the nervures and nervules flavescent, have the same shape, but the hind ones are only very slightly longer than the anterior; the pterostigma is not indicated, and the longitudinal, slightly infuscate streak at the apex of the hind wings is occasionally obliterated. The antennæ are much shorter, and in the two female examples in which they are entire, the ante-apical joints are more broadly spatulate than in *C. inclitus*; the epistome is flavescent, but the frons and vertex are fuscous black, the latter bears two transverse yellow macules; the prothorax is fuscous brown occasionally relieved by dull flavescent macules; the abdomen is deeply infuscate; the legs rufo-flavescent with the tibial spurs reaching the base of the fifth tarsal joint.

Length of body 29-30 mm.; of wings expanded, 67-71 mm.

Hab. Natal (? Maritzburg); Transvaal (Rustenburg) Miss Schunke.

CREAGRIS PSEUDOPLUMBEUS, n. sp.

This species is also closely allied to *C. proximus*, the main difference being the presence of a distinct pterostigma in both wings and the total absence of a slightly infuscate band in the posterior; but apart from that the fore wings are not so deeply sinuate towards the apex of the posterior margin, nor is that part as much elongate attenuate in the hind wings; the antennæ are sub-

flavescent, with the ultimate joints broadening to a spatuliform shape conspicuously hollowed; the epistome and legs are pale flavescent; the vertex is either maculated with fuscous, and somewhat flavescent, or fuscous maculated with yellow; the pronotum is usually lighter than the meso- and meta-notum, which are of a drab colour like the abdomen, which has, however, a lateral lighter band on each side, the nervures and nervules of the hyaline wings are flavescent, and the hind margins of both anterior and posterior are very briefly fimbriate.

From the description I concluded that this species was *C. lanceolatus*, Ramb., but in the British Museum Collection I found it identified as *C. africanus*, Ramb., which McLachlan considers to be scarcely different from *C. plumbeus*, Oliv., and places *C. pallidipennis*, Ramb., in synonymy with the latter. Now Rambur admits that his *C. pallidipennis* from Senegal is perhaps a variety only of *C. plumbeus*, but he mentions also an example from the Cape differing from his *C. africanus* by the narrower wings and three brown bands on the prothorax. It is the Cape species which I here describe.

Length of body 28–29 mm.; of wings expanded 58–69 mm.

Hab. Cape Colony (Worcester, Stellenbosch), L. Péringuey; (Prieska) F. W. Purcell; (Little Namaqualand) R. M. Lightfoot; (Burghersdorp) Dr. D. R. Kannemeyer; (Humansdorp) Rev. J. O'Neil; King William's Town (R. M. Lightfoot).

CREAGRIS BECHUANUS, n. sp.

♂. Pale flavescent; wings transparent but with a slight brownish sheen, all the nervures and nervules brown, and without macules or spots; pterostigma very small, very indistinct and somewhat brown; antennæ of nearly the same length as the thorax, brown, spatulate towards the apex, flattened there but hollow beneath; head pale flavescent with a transverse fuscous patch between the antennæ, and on the raised vertex a short median, elongated spot or narrow band along the median groove, and two small macules on each side; notum yellow, pronotum with three distinct entire fuscous bands; meso- and metanotum with the median fuscous band and an interrupted lateral band on the mesosternum and a patch on the metanotum; sternum flavescent, maculated with fuscous patches; abdomen very long, luteous; legs sub-rufescent, anterior tibiæ indistinctly annulated with fuscous; spurs of fore tibiæ slightly longer than the others but reaching only to about half the length of the basal tarsal joint, which is elongate.

This species is the only South African *Creagris* known to me with light fuscous wings.

Length of body 41 mm., of wings expanded 62 mm.

Hab. Bechuanaland (Mochudi).

CREAGRIS ANGUSTIPENNIS, n. sp.

♂. Epistome, pronotum, sternum, and legs pale flavescent, meso- and metasternum light fuscous variegated with greyish, abdomen extremely long, luteous; wings very narrow, lanciform, fore and hind of nearly equal length, hyaline but with a sublacteous iridescent sheen, pterostigma lacteous, slightly edged with brown, sub-costal and radial nervures, the latter especially, white and black, the white space, however, longer than the black, the other nervures and nervules partly white and fuscous, but those of the hind wings are concolorous, and the cells a little more iridescent than in the fore wings in my example; antennæ as long as the thorax, brown, joints narrowly edged with whitish; mesonotum vaguely tri-banded, meso- and meta-notum fuscous and greyish; femora speckled with fuscous dots; tarsal spurs very long, as long as the basal tarsal joint, which is longer than the three following taken together.

Length of body 43 mm.; of wings expanded 66 mm.

Hab. Cape Colony (King William's Town), R. M. Lightfoot.

CREAGRIS DAMARINUS, n. sp.

Flavescent; wings hyaline with the nervures and nervules pale flavescent, tessellated with fuscous, pterostigma flavous, somewhat distinct; hind wings with a lower marginal apical fuscous streak; legs pale flavescent, concolorous; abdomen fuscous with two lateral yellow bands. Head flavous with a narrow fuscous macule in the epistome, and four small ones on the vertex; the pronotum has a plain fuscous median band and a lateral one, the median is continued as far as the scutellum, and on each side of both the pro- and metasternum there is a somewhat broad band which on the prosternum is divided into three; the wings are narrow, almost equally acuminate, but not sinuate on the posterior margin; the hind wing is slightly narrower than the anterior and somewhat shorter; the sub-costal nervure is yellow, and concolorous, the other nervures and nervules are partly flavescent and partly fuscous, at equal intervals, the margins are distinctly although briefly bristly, and most of the nervures also; on the hind wing the posterior margin from the apex to about one-seventh of the length bears an elongated

narrow fuscous patch; the tarsal spurs are short, barely reaching the median part of the basal tarsal joint. Antennæ wanting.

Length of body 30 mm., of wings expanded 61 mm.

Hab. Damaraland (J. Hodson).

CREAGRIS MASHUNUS, n. sp.

Drab colour mixed with cinereous; wings hyaline with the nervures and nervules partly white and partly fuscous, pterostigma small, fuscous and lacteous, one small sub-vertical fuscous streak on the middle of the hind border of the fore wings, and a narrow, elongated but not very distinct one on the hind border of the posterior at a short distance from the apex; the tessellation of the nervures and nervules is more pronounced in the apical part especially of the fore wings and along the forked nervures of the hind margin; these wings are narrow, especially the hind ones, acuminate but hardly sinuate on the lower margin of the apex; epistome pale flavescent, vertex highly raised transversely, and with two parallel series of black macules transversely disposed; pronotum very plainly constricted laterally, fuscous, variegated with ashy grey and sub-rufescent macules somewhat indistinct; meso- and metasternums fuscous and variegated in the same manner; abdomen fuscous with a sub-rufescent patch in the middle of the dorsal part of each segment; legs rufescent, femora specked with fuscous; spurs nearly as long as the basal tarsal joint.

Length of body 22 mm., of wings expanded 52 mm.

Hab. Southern Rhodesia (Salisbury), G. A. K. Marshall.

FAMILY ASCALAPHIDES.

GEN. NEPHONEURA, McLachl.

NEPHONEURA MASHUNENSE, n. sp.

♀. Head rufo-brunnescent, epistome rufescent, whole head clothed with very long and very dense hairs which are partly black, and in the centre partly sub-flavescent; prothorax very densely hairy especially on the sides, pale brown, slightly variegated with ashy spots or patches, the mesosternal part black, the sides of the sternum bear a broad cretaceous longitudinal band on each side; abdomen light brown, each segment with two velvety vertical black patches on the dorsal part, and with two narrow bands, one apical, one basal, and also several small macules on the ventral; wings

hyaline with the nervures and nervules slightly rufescent brown, and having on the fore wings a narrow brownish band extending along the sub-costal and median nervures from the base to the pterostigma which is large and sub-arcuate; there is no tessellation proper in the costal area, only a few indistinct spots on the base of the nervure, from about the median part to the pterostigma; in the hind wings the rufescent brown band is as in the fore, but each nervule of the costal area has from one-third of the base a more distinctly infusate patch close to the sub-marginal nervure, and the pterostigma is slightly broader than in the anterior wings; legs reddish-brown; antennæ flavous with the four apical joints and the broadly pyriform club fuscous brown.

This species is easily distinguished from *N. capensis* by the more hyaline wings, and also the markings of the abdomen; it resembles more *N. collusor*, but differs from it in the non-tessellated costal area, the absence of a supra-apical infusate patch in the hind wings (♀); nor is the thorax variegated with yellow.

Length of body 22 mm., of fore wings 31 mm., of hind wings 23 mm.

Hab. Southern Rhodesia (Salisbury), G. A. K. Marshall.

ENCYOPSIDIUS, n. gen.

I propose this genus for a small, delicate species, of which I have seen one example only, and which in many characters resemble *Encyopsis*. The eyes are divided in the same manner, but are not in proportion quite as large; the shape and neuration of the wings are identical, and that of the clasps of the ♂ very similar, but the antennæ are much shorter, and the hind tibiæ have no apical spurs.

ENCYOPSIDIUS PROMONTORII, n. sp.

Plate IX., fig. 11.

♂. Head densely clothed with very long hairs greyish in front, fuscous at the apex; antennæ only two-thirds the length of the fore wings, flavescent, the club slightly fuscous; prothorax fuscous, clothed on the pronotum with fuscous and on the sides of the mesonotum with a fringe of white hairs, abdomen fuscous brown, clasps very short, flavescent; wings only moderately long, fore wings lacteous hyaline with the very base, the nervures, and the small pterostigma flavescent, the nervures slightly fuscous; hind wings plainly shorter than the anterior with the three anterior nervures, and the greatest part of the area flavescent, but the median part is

hyaline; sides of sternum maculated with flavescent; legs yellow, hind tibiæ without any spur.

Length of body 20 mm., of fore wings expanded 44 mm. of hind wings 35 mm.

Hab. Cape Colony (Cape District), L. Péringuey.

SUB-FAMILY NEMOPTERIDES.

GEN. NEMOPTERA, Latr.

NEMOPTERA PURCELLI, n. sp.

Plate IX., fig. 13.

♂. Head, thorax, and abdomen bright drab colour, sides of thorax and legs pale yellow; antennæ moderately long, sub-infusate; head trituberculate on the vertex and with two small, not very distinct tubercles close to the base of antennæ; pronotum very strongly constricted with the anterior margin highly reflexed and fringed with upright fairly long bristles; mesonotum plurigibbose and bearing a few setose hairs laterally; abdomen short; anterior wings sub-obtuse at tip, hyaline with a slightly fuscous venation; the radial and sub-costal nervures and the space between them pale flavescent, the hind border and also the nervures are fimbriate; hind wings very long, very narrow, broadly dilated at apex in a very broad ovate paddle-like expansion half twisted in the centre, light fulvous like the stalk itself, which is lacteous, however, above the dilatation, and acuminate and distinctly lacteous at apex.

In the figure the white tapering lacteous part of the hind wing has not come out well; the right wing, however, shows the half twist of the paddle.

Length of body $10\frac{1}{2}$ mm.; expansion of anterior wings 35 mm.; length of posterior wing, 29 mm.

This remarkable species was discovered some twenty-six years ago at Constantia, near Cape Town by my colleague, Dr. W. F. Purcell. It has not been met anew,

NEMOPTERA PULCHELLA.

Plate IX., fig. 14.

♀. Body and antennæ light fulvous, legs pale flavescent; vertex of head plainly trituberculate, thorax concolorous, pronotum constricted, and with the anterior margin and the sides densely setose;

sutures of the mesonotum very deep, the latter almost bigibbose; abdomen short; anterior wing long, slightly acuminate at apex, hyaline with a very slight pinkish tinge, the sub-costal costules greenish yellow for the whole of the length, no pterostigmatic macule, the reticulation nearly translucent; hind wings very long, pale greenish yellow, and ending at apex in a long, broad oar-like pinkish dilatation having a half twist.

In the figure this dilatation had to be shown flat.

Twice only did I meet with this pretty, delicate-looking insect, and I was not fortunate in the second occasion to capture the specimen.

Length of body 9 mm.; expansion of fore wings 42 mm.; length of hind wing 37 mm.

Hab. Cape Colony (Koeberg, Cape District), L. Péringuey.

NEMOPTERA DUMBRODIANA, n. sp.

♂. Flavescent, but with the upper part of the head, of the thorax, and the whole abdomen very light buff; basal joint of antennæ also buff—the other joints are missing; vertex of head with a conspicuous median tubercle; no traces of a neck; mesonotum constricted, short, sparsely setulose laterally, gibbosities of the mesonotum greatly developed; abdomen twice the length of the head and thorax taken together, the segments plainly pubescent; anterior wings moderately acuminate rounded towards the median part of the apex, hyaline but with the venation, especially the sub-radial nervures, which are set very closely to each other and become united slightly past the middle, somewhat flavescent; no pterostigma; the hind wings are very narrow, very long, and amplified at about two-thirds of their length into a narrow, oar-blade like process, making half a twist, very little acuminate at apex; for two-thirds of the length the hind wing is flavescent fuscous, turns thence to whitish for one-sixth of the length, the dilated reniform part is plainly fuscous for two-thirds of its length, but has an elongated lacteous patch along the upper edge, the third hind part is lacteous, but the very apex is lightly infuscate.

Length $15\frac{1}{2}$ mm.; expansion of fore wings 48 mm.; length of hind wing 54 mm.

Not unlike in general appearance, and especially in the shape of the hind wings, *N. africana*, but the fore wings are more rounded in the anterior apical part and less distinctly acuminate on this account, the two sub-radial nervures become united slightly past the middle instead of at about four-fifths of the length as in the *N.*

africana, and lastly the colouration of the narrowly expanded reniform part of the hind wings is different.

Hab. Cape Colony (Uitenhage, Dunbrody), Rev. J. O'Neil.

GEN. CROCE, McLachl.

CROCE LIGHTFOOTI, n. sp.

Body very light drab; no yellow markings anywhere. Rostral part of head very long, antennæ wanting in my three examples, but from memory I can state that they are not long; pronotum longer than broad, attenuate in front but not constricted there and with only a few, very small setæ laterally; mesonotum distinctly plurigibbose; abdomen twice as long as the thorax (♂♂), concolorous; anterior wings hyaline and strongly iridescent, narrow at base, moderately acuminate at apex, plainly fimbriate all round, and with all the nervules distinctly hairy, and light drab in colour; pterostigma very long, partly white partly brown but not very conspicuous, costal space narrow, divided by not numerous nervules; hind wings very long, thread-like, slightly more than three times the length of the body, greatly diverging, slightly tapering towards the apex, clothed with a dense short pubescence, and having at about one-third of their length an elongated bunch of silky lanuginose white hairs, occasionally mixed with a few drab ones; the colour of these hind wings is light drab from the base to about the median part, and thence white.

The lanuginose bunch varies in size; it is never very large, but it is quite distinct. This character distinguishes it from *C. damara*, McLach., which I know, however, from description only, but in which the pubescence of the nervules of the wings is not mentioned.

Length of body $9\frac{1}{4}$ – $9\frac{3}{4}$ mm.; expansion of wings 24–25 mm.; length of hind wing 35–41 mm.

Hab. Cape Colony (Clanwilliam), R. M. Lightfoot; (Namaqualand), G. Warren; (Damaraland), J. Christie.

INDEX.

ACANTHACLISIS.		NEMOPTERA.	
	PAGE		PAGE
lineatipennis	443	dumbrodiana	452
mashunensis	442	pulchella	451
		purcelli	451
CREAGRIS.		NEPHONEURA.	
angustipennis	448	mashunense	449
bechuanus	447		
damarinus	448	PALPARES.	
inclitus	445	cataractæ	433
mashunus	449	dubiosus	440
proximus	446	elegantulus	436
pseudoplumbeus	446	genialis	438
		karrooanus	435
CROCE.		mosambicus	434
lightfooti	453	ovampoanus	439
ENCYOPSIDIUS.			
promontorii	450	PALPARIDIUS.	
		capicola	441
MYRMELEON.		concinus	441
boschimanus	443		
obtabilis	444		

EXPLANATION OF PLATES.

PLATE VII.

FIG.

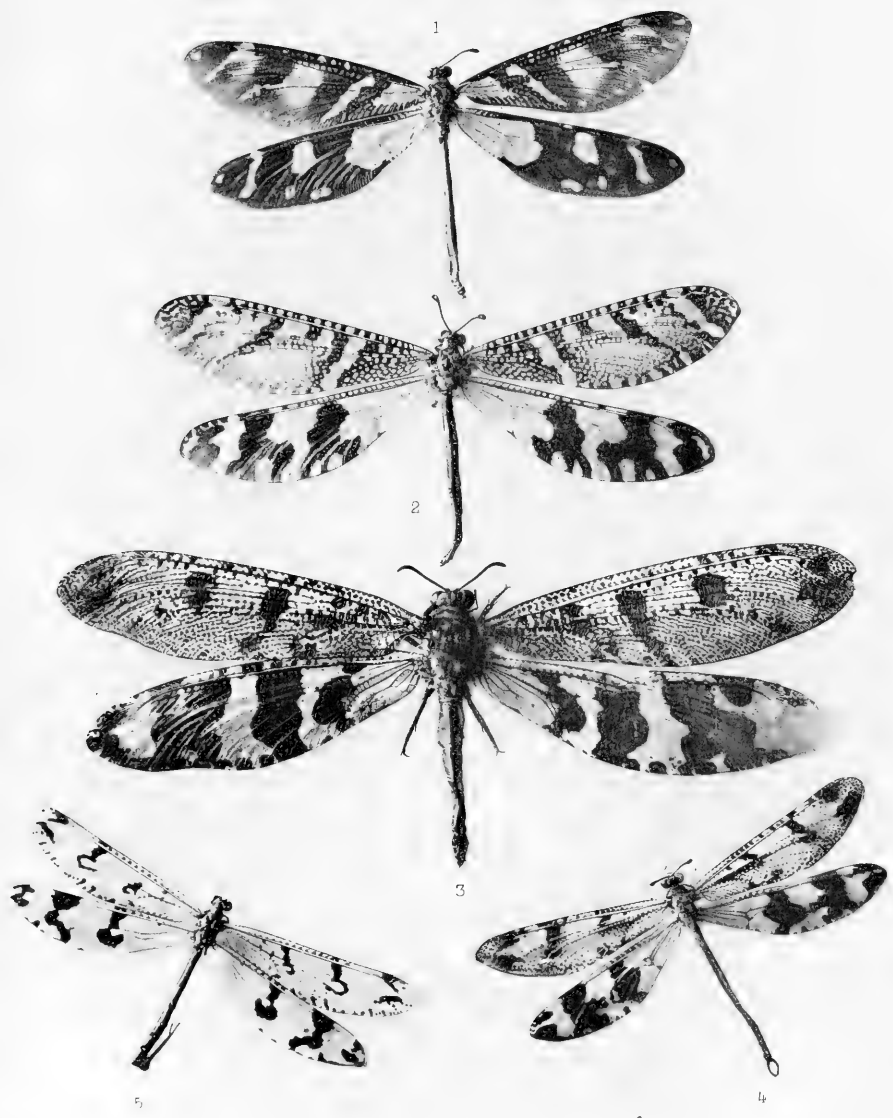
1. Palpares ovampoanus.
2. „ „ genialis.
3. „ „ cataractæ.
4. „ „ elegantulus.
5. Palparidius capicola.

PLATE VIII.

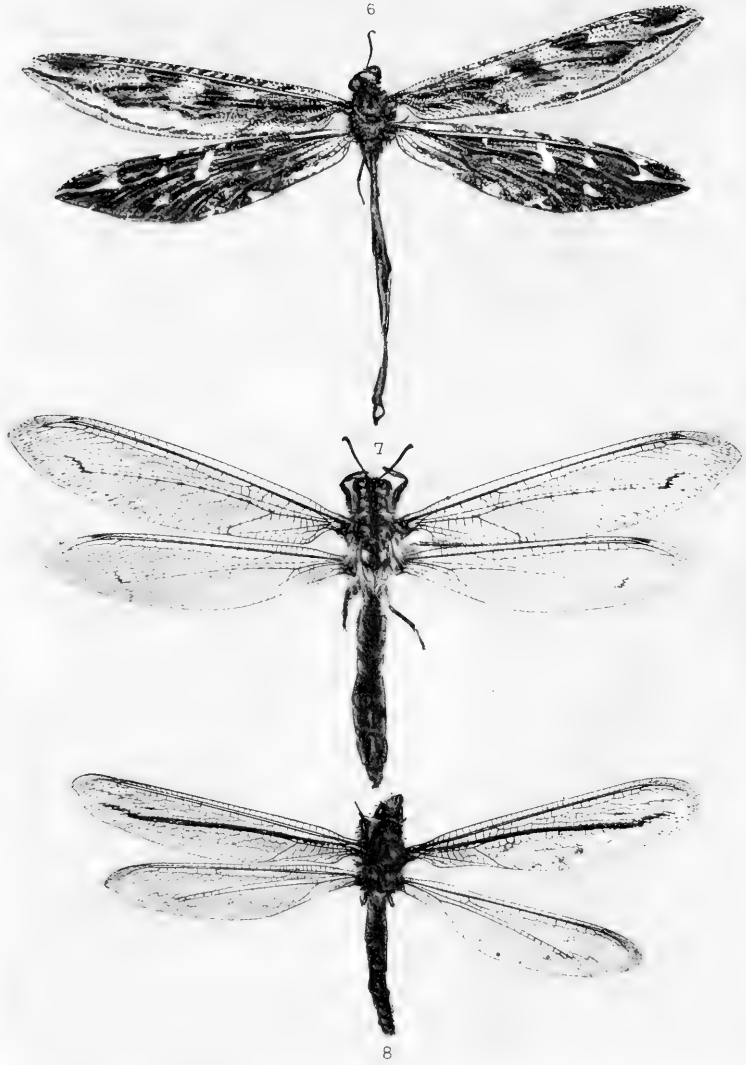
6. Palpares karrooanus.
7. Acanthaclisis dasymalla, Gerst.
8. „ „ lineatipennis.

PLATE IX.

9. Heliopteryx radiogramma ♀, Ramb.
10. Myrmeleon boschimanus.
11. Encyoposidus promontorii.
12. Neomolambrotus aurivillii, Weld.
13. Nemoptera purcelli.
14. „ „ pulchella.

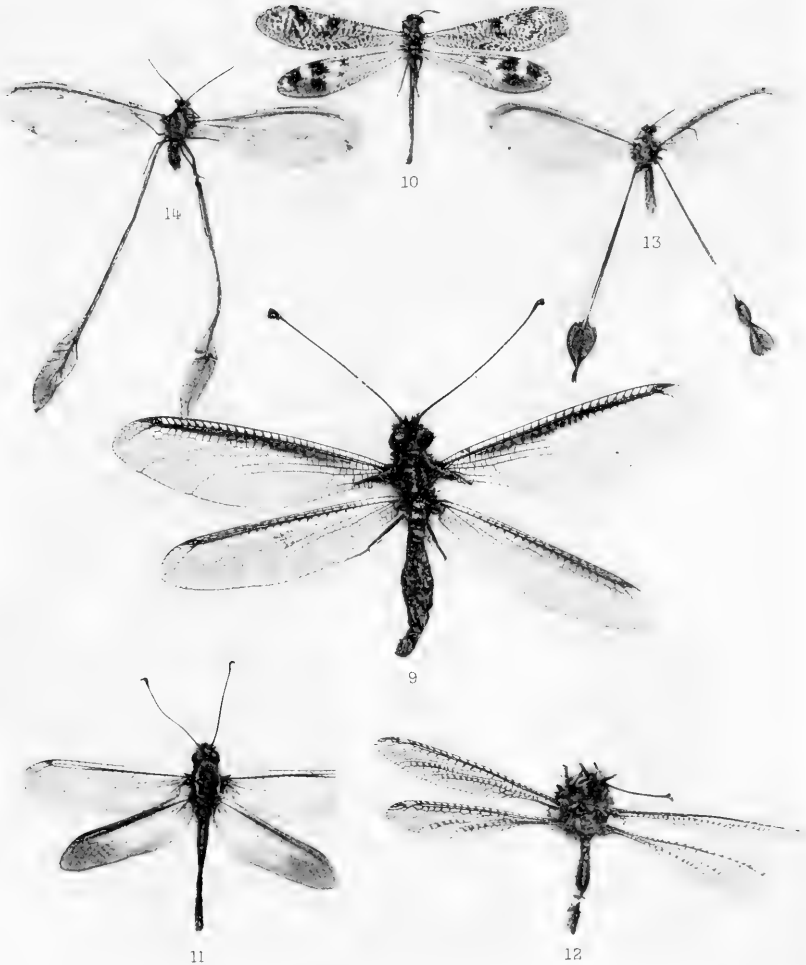


W. J. L. ...



Héhoq. Dujardin

SOUTH AFRICAN HEMEROBIIDAE



H. S. G. Standen

SOUTH AFRICAN HEMEROBIIDAE

- 16.—*A Revised List of the South African Reptiles and Batrachians, with Synoptic Tables, special reference to the specimens in the South African Museum, and Descriptions of New Species.*—By G. A. BOULENGER, F.R.S., V.P.Z.S.

PART I.—LACERTILIA AND RHIPTOGLOSSA.

LACERTILIA.

Synopsis of the Families represented in South Africa.

- I. Upper surface of head with scales or granular tubercles.
 A. Tongue short, with villose papillæ.
 No movable eyelids; dentition pleurodont *Geckonidæ.*
 Movable eyelids; dentition acrodont *Agamidæ.*
 B. Tongue long, smooth, deeply bifid, sheathed at the base. . . *Varanidæ.*
- II. Upper surface of head with large or symmetrical shields.
 A. Tongue with villose papillæ; femoral pores *Zonuridæ.*
 B. Tongue with scale-like imbricate papillæ or oblique plicæ.
 Body vermiform; scales soft, squarish, not imbricate *Amphisbenidæ.*
 No bony plates under the scales; femoral pores usually present. . . *Lacertidæ.*
 Bony plates under the scales; a lateral fold; femoral pores . . . *Gerrhosauridæ.*
 Bony plates under the scales; no lateral fold; no femoral pores . . *Scincidæ.*

FAMILY GECKONIDÆ.

Tongue short, with villose papillæ. Dentition pleurodont. Body covered with granules or soft scales; no large shields on the head. No movable eyelids; pupil usually vertical.

Twelve Genera represented in South Africa.

- I. Digits not dilated.
 Digits short, cylindrical, covered with small spinose scales, clawless *Chondrodactylus.*
 Digits with narrow transverse plates inferiorly and with a long claw, fingers subcylindrical, toes depressed, with a lateral fringe of long pointed scales *Ptenopus.*

- Digits webbed almost to the tips, covered with small granules, with a faint, obtuse claw *Pelmatogeocko*.
- II. Digits more or less dilated, with enlarged scales or lamellæ inferiorly.
- A. Digits with a strong claw.
1. Digits dilated at the apex, which is furnished inferiorly with two plates separated by a longitudinal groove.
- Digits with only one pair of plates inferiorly, at the apex . . . *Phyllodactylus*.
- Digits with one or two pairs of plates inferiorly, in addition to the apical pair *Ædura*.
2. Digits cylindrical or compressed at the apex, the dilated part with paired lamellæ inferiorly.
- Inner digit well developed; pupil vertical *Hemidactylus*.
- Inner digit rudimental; pupil round *Lygodactylus*.
3. Digits entirely dilated, with a single series of lamellæ inferiorly; body covered with small imbricate scales *Homopholis*.
- B. Digits clawless, or with a very indistinct claw
- Digits strongly dilated, with transverse lamellæ inferiorly, with a minute claw fitting in a notch of the distal lamellæ . . . *Elasmodactylus*.
- Digits more or less dilated, clawless, or with a very minute claw, the distal lamellæ undivided *Pachydactylus*.
- Tips of fingers slightly dilated, of toes rather narrowed; no claws *Colopus*.
- Digits very unequal, dilated at the apex only, clawless or with very minute claw; eyelid distinct all round the eye . . . *Rhoptropus*.

1. CHONDRODACTYLUS.

Peters, Mon. Berl. Ac., 1870, p. 110; Bouleng. Cat. Liz. i. p. 10.

1. *C. ANGULIFER*, Peters, *l.c.*, p. 111, pl. —, fig. 1; Bouleng., *l.c.*, p. 11.

Deserts of Cape Colony.

Little Namaqualand (M. Schlechter, Whitley, R. Moffat), Kenhardt (Schlechter), Touw's River (A. G. Atherstone), Beaufort West (W. F. Purcell).

C. weiri, Bouleng. P.Z.S., 1887, p. 339, distinguished by larger ventral scales, is probably not specifically separable from *C. angulifer*.

2. PTENOPUS.

Gray, P.Z.S., 1865, p. 640; Bouleng. Cat. Liz. i. p. 15.

1. *P. GARRULUS*.

Stenodactylus garrulus, Smith, Ill., Rept., App. p. 6.

Ptenopus garrulus, Bouleng., *l.c.*, p. 15.

Deserts of Cape Colony ; German South-West Africa.

Little Namaqualand (Schlechter), Zwart Modder ; Kenhardt,
Cape Colony (Schlechter).

3. PELMATOGECKO.

Andersson, Jahrb. Nass. Ver. Wiesbaden, lxi., 1908, p. 299.

1. P. RANGEI, Anderss., *l.c.*, pl. iii. fig. 1.

Syndactylosaura schultzei, Werner, Jen. Denkschr. xvi., 1910,
p. 316, pl. vi. fig. 3.

German South-West Africa.

4. PHYLLODACTYLUS.

Gray, Spicil. Zool., 1830, p. 3 ; Bouleng. Cat. Liz. i. p. 76.

Three Species.

Back with large keeled tubercles separated from one another by granules

P. peringueyi.

Back with uniform granules, which are smaller than those on the snout ; nostril separated from the first labial by a narrow shield..

P. porphyreus.

Back with uniform small flat scales, which are as large as the granules on the snout ; first labial bordering the nostril

P. lineatus.

1. P. PERINGUEYI, sp. n.

Little Namaqualand (L. Péringuey) ; Port Elizabeth (Moorhouse).

2. P. PORPHYREUS.

Gecko porphyreus, Daud. Hist. Rept. iv. p. 130.

Phyllodactylus porphyreus, Bouleng. Cat. Liz. i. p. 87.

Cape Colony and German South-West Africa.

Cape Peninsula (Purcell, C. A. Fairbridge) ; Cape Division (H. Glasson) ; Cape Town (Layard, T. D. Butler, J. H. Paynter) ; Cape Flats (R. Smith) ; Wynberg (W. L. Selater) ; Ceres (Purcell) ; Calvinia (C. L. Leipoldt) ; Sir Lowry's Pass, Caledon Division (Purcell) ; Clanwilliam (Leipoldt) ; Little Namaqualand (Péringuey).

3. P. LINEATUS.

Smith, Ill., Rept., App. p. 7 ; Bouleng., *l.c.*, p. 92.

Cape Colony.

Tulbagh (R. M. Lightfoot) ; Clanwilliam (Leipoldt) ; O'okiep,
Little Namaqualand (Schlechter) ; Bushmanland (Schlechter).

5. *ÆDURA*.

Gray, Zool. Miscell., 1842, p. 52; Bouleng. Cat. Liz. i. p. 104.

Two Species.

Rostral bordering the nostril *Æ. africana*.
 Rostral separated from the nostril *Æ. nivaria*.

1. *Æ. AFRICANA*, Bouleng., Ann. & Mag. N.H. (6) ii., 1888, p. 137.
 German South-West Africa, Cape Colony, Natal, Transvaal.
 Cape Colony: Walfish Bay, *type* (P. Nightingale); Kentani,
 Transkei (Rev. Dr. Kolbe); Port St. Johns, (A. S. Weisecker).
 Natal: Durban (Col. J. H. Bowker).
2. *Æ. NIVARIA*, Bouleng., P.Z.S., 1894, pp. 606 and 726, pl. xlvi.
 fig. 1.
 Top of Drakensberg Range, North-West Natal; Albany Division
 of Cape Colony (French).

6. *HEMIDACTYLUS*.

Gray, Ann. Phil. (2) x., 1825, p. 199; Bouleng. Cat. Liz. i. p. 113.

This genus is represented in South Africa by a single species,
 widely distributed in Tropical Africa and America:—

1. *H. MABOUIA*, Mor. de Jonn. Bull. Soc. Philom., 1818, p. 138;
 Bouleng., *l.c.*, p. 122.
 Portuguese East Africa and Transvaal.
 Transvaal: Louw's Creek (L. Gough).

7. *LYGODACTYLUS*.

Gray, P.Z.S., 1864, p. 59; Bouleng. Cat. Liz. i. p. 158.

Two Species.

4 or 5 pairs of lamellæ under the median digits; mental (sym-
 physial) shield with two clefts converging forwards *L. capensis*
 3 pairs of lamellæ under the median digits; mental without clefts. *L. ocellatus*.

1. *L. CAPENSIS*.
Hemidactylus capensis, Smith, Ill., Rept. pl. lxxv. fig. 3.
Lygodactylus capensis, Bouleng., *l.c.*, p. 160.
 Somaliland to Natal; Angola.
 Natal: Durban (Bowker).
 Transvaal: Barberton (Dr. P. Rendall).
 Southern Rhodesia: Salisbury (G. A. K. Marshall).
 Portuguese East Africa: Delagoa Bay (J. de Coster).

2. *L. OCELLATUS*, Roux, Zool. Jahrb., Syst., xxv., 1907, p. 406,
 pl. xiv. figs. 1-3.
 Transvaal (Pretoria District).

8. HOMOPHOLIS.

Bouleng. Cat. Liz. i. p. 191.

1. *H. WAHLBERGII*.

Gecko wahlbergii, Smith, Ill., Rept. pl. lxxv. fig. 1.

Homopholis wahlbergii, Bouleng., *l.c.*

Homopholis macrolepis, Bouleng. Ann. & Mag. N. H. (5) xvi.,
 1885, p. 474.

Portuguese East Africa to Natal.

Portuguese East Africa: Delagoa Bay (De Coster), type of
H. macrolepis.

Transvaal: Barberton (Rendall, Kolbe).

Southern Rhodesia: Salisbury (R. H. Thomas).

9. ELASMODACTYLUS.

Bouleng. P.Z.S., 1894, p. 727.

1. *E. NAMAQUENSIS*, W. L. Sclater, Ann. S. Afr. Mus. i., 1898,
 p. 109, pl. v. fig. 2.
 Little Namaqualand (W. C. Scully), *types*.

10. PACHYDACTYLUS.

Wiegmann. Herp. Mex. p. 19; Bouleng. Cat. Liz. i. p. 200.

Synopsis of the Species.

I. Dorsal scales intermixed with larger tubercles.

A. Dorsal tubercles smooth or keeled; ventral scales flat,
 imbricate or subimbricate.

1. 8 to 12 lamellæ under the dilated part of the median
 digits, the rest covered with small scales.

Dorsal tubercles strongly keeled *P. bibroni*.

Dorsal tubercles smooth or very feebly keeled *P. lævigatus*.

2. 7 to 9 lamellæ under the dilated part of the median
 digits, which in their cylindrical part bear a series of
 narrow lamellæ; dorsal tubercles strongly keeled *P. fasciatus*.

3. 4 to 6 lamellæ under the dilated part of the median
 digits.

a. First upper labial not touching the nostril.

Granules on hinder part of head intermixed with larger tubercles;
 dorsal tubercles large, moderately or feebly keeled; body
 spotted *P. capensis*.

- Granules on hinder part of head intermixed with larger tubercles; dorsal tubercles large, strongly keeled, often trihedral; body cross-barred. *P. formosus*.
- No enlarged tubercles on hinder part of head; dorsal tubercles small, more or less strongly keeled *P. affinis*.
- b. First upper labial entering the nostril; dorsal tubercles large, feebly keeled *P. weberi*.
- B. Dorsal tubercles large, conical; ventral scales granular-conical; tail with whorls of spine-like tubercles *P. rugosus*.
- C. Dorsal tubercles small, distinguished from the granules only by their larger size, sometimes conical *P. maculatus*.
- II. Dorsal scales equal.

- A. Head very convex; rostral widely separated from nostril. 4 or 5 transverse lamellæ under the median digits; rostral shield not or but slightly broader than deep; dorsal scales convex, not much smaller than ventrals *P. ocellatus*.
- 5 or 6 lamellæ under the median digits; rostral shield much broader than deep *P. amanus*.
- 3 or 4 transverse lamellæ under the median digits; rostral shield much broader than deep; dorsal scales convex, not smaller than ventrals *P. mariquensis*.
- 4 transverse lamellæ under the median digits; rostral shield much broader than deep; dorsal scales flat, much smaller than ventrals *P. punctatus*.
- B. Head more or less strongly depressed; 5 or 6 transverse lamellæ under the median digits.
- Rostral nearly twice as broad as deep, entering the nostril; snout a little longer than the orbit *P. purcelli*.
- Rostral but little broader than deep; snout much longer than the orbit *P. serval*.

1. *P. BIBRONI*.

Tarentola bibronii, Smith, Ill., Rept. pl. i. fig. 1.

Pachydactylus bibronii, Bouleng. Cat. Liz. i. p. 201.

South Africa, northwards to Benguela and Mozambique.

Cape Colony: Little Namaqualand (Moffat, W. C. Scully, W. H. Turle, Schlechter, Krapohl); O'okiep, Little Namaqualand (G. Worden); Garies, Little Namaqualand (Dr. R. Broom); Cape Flats (R. Smith); Matjesfontein, Worcester (Dr. W. P. van de Merwe, Lightfoot); Burghersdorp (Dr. D. R. Kannemeyer); Clanwilliam (Schlechter); Calvinia (Schlechter); Hanover (C. S. Cronwright-Schreiner); Graaff-Reinet (Paynter); Montague (Purcell); Caledon (Purcell); Swellendam (Purcell); Bredasdorp (Fry); Bechuanaland (S. Blackbeard).

2. *P. LÆVIGATUS*, J. G. Fischer, Jahrb. Hamb. Wiss. Anst. v., 1886, p. 15, pl. ii. fig. 3.

German South-West Africa; Little Namaqualand.
Little Namaqualand (Schlechter).

3. *P. FASCIATUS*, Bouleng. Ann. & Mag. N. H. (6) ii., 1888, p. 138.
Namaqualand and Natal.
Namaqualand (Péringuey), *type*; Natal (Sanderson).
4. *P. CAPENSIS*.
Tarentola capensis, Smith, Ill., Rept. pl. ii. fig. 2.
Pachydactylus capensis, Bouleng. Cat. Liz. i. p. 202.
Cape Colony, Orange River Colony, Natal, Transvaal, Bechuanaland, Southern Rhodesia, Portuguese East Africa.
Cape Colony: Little Namaqualand; Beaufort West (Jackson); Burghersdorp (Kannemeyer); Hanover (Shortridge, Cronwright-Schreiner); Modder River (Butler); Clanwilliam (Lightfoot); Matjesfontein, Worcester Division (Purcell); Port Elizabeth (Moorhouse).
Orange River Colony: Kroonstad (Watermeyer); Smithfield (Kannemeyer).
Transvaal: Johannesburg (Ross); Irene (Taylor); Pietersburg (Daneel); Middelburg (Dr. C. S. Piers); Modderfontein (A. Haagner); Barberton (Rendall).
Bechuanaland: Kuruman (C. G. Alston).
Southern Rhodesia: Bulawayo (R. Pillans).
Portuguese East Africa: Delagoa Bay (De Coster).
5. *P. FORMOSUS*, Smith, Ill., Rept., App. p. 4; Bouleng. Cat. Liz. i. p. 203, pl. xvi. fig. 2.
P. obscurus, Thomillot, Bull. Soc. Philom. (8) i., 1889, p. 22 (type examined).
I now regard *P. mentomarginatus*, Smith, *op. cit.* p. 5, as the young of *P. formosus*.
Cape Colony, Bechuanaland, Transvaal.
Cape Colony, Little Namaqualand (Scully); Concordia, Little Namaqualand (Krapohl); Ceres (Lightfoot); Clanwilliam (Lightfoot); Calvinia (Leipoldt); Port Elizabeth (M. Weale).
6. *P. AFFINIS*, Bouleng. Ann. & Mag. N. H. (6) xvii., 1896, p. 21.
Transvaal; Rhodesia.
Southern Rhodesia (Pillans).
7. *P. WEBERI*, Roux, Zool. Jahrb., Syst., xxv., 1907, p. 408, pl. xiv. figs. 4 and 5.
Little Namaqualand.

8. *P. RUGOSUS*, Smith, Ill., Rept. pl. lxxv. fig. 2; Bouleng. Cat. Liz. i. p. 204.
 Bechuanaland, Little Namaqualand.
 Little Namaqualand (Schlechter).
9. *P. MACULATUS*, Smith, Ill., Rept., App. p. 4; Bouleng. Cat. Liz. i. p. 206, pl. xvi. fig. 4.
 Cape Colony, Natal, Transvaal, Southern Rhodesia.
 Cape Colony: Cape Peninsula (French); Little Namaqualand (Moffat); Beaufort West (Purcell); Worcester (Purcell); Robertson (Purcell); Graaff-Reinet (Paynter); Port Elizabeth (Drege, Moorhouse); King William's Town (Purcell); Hanover (Schreiner); Kentani, Transkei (Kolbe); Albany Division (French).
 Southern Rhodesia: Bulawayo (Pillans).
10. *P. OCELLATUS*.
Gecko ocellatus, Cuv. R. A. ii. p. 46.
Pachydactylus ocellatus, Bouleng. Cat. Liz. i. p. 205.
 Cape Colony, Natal, Transvaal, Angola.
 Cape Colony: Cape Town (Purcell); Robben Island (Purcell, Oakley); Tulbage (Purcell); Cape Division (Turle); Beaufort West (Purcell); Calvinia (Schlechter, Leipoldt); Worcester Division (Purcell, Lightfoot); Mossel Bay (Drege); Worcester (Leipoldt); Bredasdorp (Fry); Caledon (Purcell); Swellendam (Purcell); Robertson (Purcell); Prince Albert (Purcell); Steynsburg (Ponder).
11. *P. AMOENUS*, Werner, Jen. Denkschr. xvi., 1910, p. 314, fig.
 Little Namaqualand.
12. *P. MARIQUENSIS*, Smith, Ill., Rept., App. p. 3; Bouleng. Cat. Liz. i. p. 207, pl. xvi. fig. 6.
 Cape Colony, Bechuanaland, Orange River Colony.
 Cape Colony: Little Namaqualand (Whiley); Clanwilliam (Schlechter); Springbokfontein (Schlechter); Worcester (Meiring); Hanover (Schreiner); Graaff-Reinet (Paynter); Worcester Division (Purcell); Malmesbury (Péringuey); Kenhardt (Schlechter); Albany Division (French).
 Orange River Colony: Smithfield (Kannemeyer).
13. *P. PUNCTATUS*, Peters, Mon. Berl. Ac., 1854, p. 615; Bouleng. Cat. Liz. i. p. 206.
 Mozambique, Rhodesia, Bechuanaland.

Southern Rhodesia : Matoppos (Pillans).

Bechuanaland : Serowe (Blackbeard).

14. P. PURCELLI, sp. n.

Cape Colony.

Touw's River (Purcell); Little Namaqualand (Schlechter).

15. P. SERVAL, Werner, Jen. Denkschr. xvi., 1910, p. 313, fig.

Great Namaqualand.

11. COLOPUS.

Peters, Mon. Berl. Ac., 1869, p. 57; Bouleng. Cat. Liz. i. p. 208.

1. C. WAHLBERGII, Peters, *l.c.*; Bouleng., *l.c.*

Damaraland.

12. RHOPTROPUS.

Peters, Mon. Berl. Ac., 1869, p. 58; Bouleng. Cat. Liz. i. p. 217.

Two Species.

Nostril in the centre of a swelling between three nasals; inner toe

well developed, third extending much beyond fourth *R. afer.*

Nostril between the rostral and two nasals; inner toe rudimentary,

fourth extending beyond third *R. ocellatus.*

1. R. AFER, Peters, *l.c.*, fig. 2; Bouleng., *l.c.*

Dactylchilikion braconnieri, Thominet, Bull. Soc. Philom. (7) ii.,
1878, p. 254.

Damaraland, Bechuanaland, Angola.

Damaraland : Walfish Bay (Nightingale).

2. R. OCELLATUS, Bouleng. Ann. & Mag. N. H. (5) xvi., 1885,
p. 475.

Cape Colony.

Cape Town (Layard).

FAMILY AGAMIDÆ.

Tongue short, with villose papillæ. Dentition acrodont. Body covered with scales or tubercles, without dermal ossifications; no large shields on the head. Movable eyelids; pupil round.

The Agamids of South Africa belong to a single genus.

1. AGAMA.

Daudin, Hist. Rept. iii. p. 333; Bouleng. Cat. Liz. i. p. 335.

Synopsis of the South African Species.

- I. Occipital scale (bearing the "pineal eye") more or less enlarged.
- A. Fifth toe not extending as far as first; hind limb not reaching the ear; back with small scales intermixed with enlarged spinose ones.
- Ear-opening smaller, or at any rate not larger, than eye-opening; third toe longer than fourth; ventral scales more or less strongly keeled, ending in a spine *A. hispida*.
- Ear-opening smaller, or at any rate not larger, than eye-opening; third and fourth toes equal, or fourth the longer; ventral scales smooth or feebly keeled. *A. brachyura*.
- Ear-opening larger than eye-opening; third toe longer than fourth; ventral scales smooth or feebly keeled *A. distanti*.
- B. Fifth toe extending as far as first, or farther; ear-opening larger than eye-opening.
1. Scaling of back heterogeneous, with enlarged more or less spinose scales; a low crest or serrated line along the middle of the back *A. aculeata*.
2. Scales on back equal or intermixed with more or less enlarged ones; a nuchal but no dorsal serration or crest.
- The smallest dorsal scales not larger than the ventrals, the scaling homogeneous or heterogeneous *A. atra*.
- Dorsal scales equal in size, much larger than the ventrals *A. planiceps*.
3. Scales on back equal; a more or less distinct denticulation or crest along the middle of the back.
- Dorsal scales much larger than ventrals; latter keeled *A. mossambica*.
- Dorsal scales (except on vertebral region) scarcely larger than ventrals; latter smooth *A. kirkii*.
- II. Occipital scale not enlarged; scales on back unequal, irregular; scales on tail forming more or less distinct rings, and a double series on the median dorsal line *A. atricollis*.

1. AGAMA HISPIDA.

Lacerta hispida, Linn. Mus. Ad. Fred. p. 44.

Agama hispida, Bouleng. Cat. Liz. i. p. 349.

Cape Colony, Natal, Orange River Colony.

Cape Colony: Cape Division (Oakley, de Souza); Worcester (Lycett); Knysna (Maritz); Little Namaqualand (Lightfoot, Broom).

Natal: Durban (Bowker).

Orange River Colony: Kroonstad (Watermeyer).

2. AGAMA BRACHYURA, Bouleng., *t.c.*, p. 350, pl. xxviii. fig. 1.

Cape Colony.

- Little Namaqualand (Péringuey, Broom, Schlechter, Lightfoot); Beaufort West (Jackson); Calvinia (Leipoldt); Matjesfontein (Purcell); O'okiep (Scully); Worcester (Lycett).
3. *AGAMA DISTANTI*, Bouleng. Ann. & Mag. N. H. (7) ix., 1902, p. 339.
Northern parts of Cape Colony, Orange River Colony, Transvaal, Southern Rhodesia, Portuguese East Africa.
Cape Colony: Little Namaqualand (Péringuey); Kowie (French); Burghersdorp (Kannemeyer).
Orange River Colony: Smithfield (Kannemeyer); Kroonstad (Watermeyer); Vredeford Road (Barrett-Hamilton).
Transvaal: Krugersdorp (Watson); Barberton (Rendall); Johannesburg (Purcell).
Portuguese East Africa: Delagoa Bay (De Coster).
Rhodesia: Mashonaland (ff. Darling).
4. *AGAMA ACULEATA*, Merrem, Tent. Syst. Amph. p. 53; Bouleng. Cat. Liz. i. p. 351.
Agama armata, Peters, Mon. Berl. Ac., 1854, p. 618; Bouleng., t.c., p. 352.
Agama pulchella, Bocage, Journ. Sc. Lisb. (2) iv., 1896, p. 116.
Northern parts of Cape Colony, Orange River Colony, and Natal, to Angola and the Zambesi.
Cape Colony: Little Namaqualand (Péringuey); Kuruman (Moffat); De Aar (Local School); Kowie (French); Touw's River (Paynter); Burghersdorp (Kannemeyer).
Natal: Durban (Bowker).
Orange River Colony: Kroonstad (Watermeyer).
Transvaal: Waterberg (Purcell).
Rhodesia: Southern Rhodesia (Pillans); Bulawayo (Kolbe); Salisbury (Marshall, Thomas); North-West Rhodesia, Livingstone (Sykes).
German South-West Africa: Damaraland (R. Marloth).
5. *AGAMA ATRA*, Daud. Hist. Rept. iii. p. 349; Bouleng. Cat. Liz. i. p. 352.
A. micropholis, Matschie, Zool. Jahrb., Syst. v., 1890, p. 607.
A. microterolepis, Bouleng. Ann. & Mag. N. H. (6) xvii., 1896, p. 22.
A. holubi, Bocage, J. Sc. Lisb. (2) iv., 1896, p. 115.
Cape Colony, Orange River Colony, Natal, Transvaal, Rhodesia, Portuguese East Africa.

Cape Colony: Cape Division (Adcock); Worcester Division (Purcell); Hanover (Schreiner); Prince Albert (Purcell); Matjesfontein, Worcester Division (Lefèvre); O'okiep (Péringuey); Stellenbosch (Purcell); Caledon (Purcell); Dassen Island (Lightfoot); Calvinia (Leipoldt); East London (Wood); Bredasdorp (Fry); Touw's River, Worcester Division (Paynter); Port Elizabeth (Moorhouse); Kowie (French); Burghersdorp (Kannemeyer); Little Namaqualand (Schlechter, Turle).

Orange River Colony: Smithfield (Kannemeyer).

Transvaal: Lydenburg (Kilgour); Modderfontein (Haagner); Krugersdorp (Watson).

6. *AGAMA PLANICEPS*, Peters, Mon. Berl. Ac., 1862, p. 15; Bouleng. Cat. Liz. i. p. 358.
German South-West Africa, Angola, Congo.
German South-West Africa: Damaraland (Marloth).
7. *AGAMA MOSSAMBICA*, Peters, Mon. Berl. Ac., 1854, p. 618; Bouleng., *t.c.*, p. 353.
Portuguese East Africa, Northern Rhodesia, British Central Africa.
8. *AGAMA KIRKII*, Bouleng., *t.c.*, p. 354, pl. xxviii. fig. 2.
Southern Rhodesia, Portuguese East Africa, British Central Africa.
Southern Rhodesia: Importuni (R. Pillans).
9. *AGAMA ATRICOLLIS*, Smith, Ill., Rept., App. p. 14; Bouleng., *t.c.*, p. 358.
Northern and Eastern parts of Cape Colony, Natal, Zululand, Transvaal, Rhodesia, Portuguese East Africa, German South-West Africa, Angola.
Cape Colony: Little Namaqualand (Péringuey).
Natal: Durban (Bowker, Butler).
Transvaal: Barberton (Rendall).
Portuguese East Africa: Delagoa Bay (De Coster).
Southern Rhodesia: Mazoe (ff. Darling).

FAMILY ZONURIDÆ.

Tongue short, with villose papillæ. Dentition pleurodont. Head covered with bony plates and symmetrical shields. Movable eyelids. Femoral pores present.

Four Genera.

- I. Limbs well developed.
 - A. Back with bony plates underlying the horny scales, which are large *Zonurus*.
 - B. Back without bony plates, dorsal scales small.
- Dorsal lepidosis heterogeneous *Pseudocordylus*.
- Dorsal lepidosis uniformly granular *Platysaurus*.
- II. Limbs rudimentary; body serpentiform, covered with whorls of lanceolate, keeled scales *Chamaesaura*.

1. ZONURUS.

Merrem, Tent. Syst. Amph. p. 57; Bouleng. Cat. Liz. ii. p. 252.

Synopsis of the South African Species.

- I. Frontonasal in contact with the rostral, separating the nasals.
 - A transverse series of 4 large occipital spines; 23 to 25 transverse rows of scales from occiput to base of tail *Z. giganteus*.
 - A transverse series of 6 small occipital spines; 40 transverse rows of scales from occiput to base of tail *Z. warreni*.
- II. Frontonasal separated from the rostral by the nasals or the supranasals.
 - A. No supranasal, nostril in a large nasal, or between a large nasal and a small postnasal; lower eyelid entirely scaly.
 - 1. Flanks with large scales similar to or a little smaller than the dorsals.
 - a. Ventral scales smooth; frontonasal present.
 - α. Less than 20 rows of scales from occiput to base of tail.
 - Nasal strongly swollen, hemispherical, pierced in the centre *Z. cataphractus*.
 - Nasal not swollen *Z. macropholis*.
 - β. More than 20 rows of scales from occiput to base of tail.
 - Lateral scales as large as dorsals *Z. cordylus*.
 - Lateral scales smaller than dorsals *Z. jonesii*.
 - b. Ventral scales keeled; frontonasal absent *Z. tropidogaster*
 - 2. Flanks covered with granular scales; only 8 longitudinal rows of ventral scales *Z. capensis*.
 - B. A supranasal shield, distinct from the very small nasal; lower eyelid with a more or less transparent disk in the middle; more than 30 rows of scales from occiput to base of tail.
 - Anterior gular scales flat, moderate *Z. polyzonus*.
 - Anterior gular scales almost granular *Z. pustulatus*.

1. ZONURUS GIGANTEUS, Smith, Ill., Rept. pls. xxv. and xxxvi.; Bouleng., *t.c.*, p. 253.
 Cape Colony, Orange River Colony, Transvaal.
 Cape Colony: Colesberg (Ortlepp).

- Orange River Colony: Kroonstad (Sir Jas. Sivewright); Hoopstad (J. Watery).
2. ZONURUS WARRENI, Bouleng. Ann. Natal Mus. i., 1908, p. 231, pl. xxxv.
Zululand.
3. ZONURUS CATAPHRACTUS.
Cordylus cataphractus, Boie, N. Acta Ac. Leop.-Carol. xiv., 1828, p. 140.
Zonurus cataphractus, Bouleng. Cat. Liz. ii. p. 255.
Western parts of Cape Colony.
Cape Colony: Little Namaqualand (Schlechter, Hoffman); Matjesfontein, Worcester Division (Lefèvre); Clanwilliam Division (Leipoldt).
4. ZONURUS MACROPHOLIS, sp. n.
Little Namaqualand.
5. ZONURUS CORDYLUS.
Lacerta cordylus, Linn. S. N. i. p. 361.
Zonurus cordylus, Bouleng. Cat. Liz. ii. p. 256.
Zonurus vittifer, Reichen. Zool. Anz., 1887, p. 372.
Whole of South Africa.
Cape Colony: Cape Town (Selater); Wynberg (Kleinschmidt); Robben Island (Purcell); Knysna (Moritz); George (Wilman); Albany Division (French); Stellenbosch (Purcell, Hutchinson); Tsomo, Transkei (Watermeyer); Middelburg (Piers); Bedford (Stephenson); Zuurberg, Alexandra Division (Drege); East London (Wood); Mount Ayliff (Weisbecker); Port Elizabeth (Moorhouse).
Natal: Umvoti (Fry).
Transvaal: Krugersdorp (Watson); Johannesburg (Cregoe).
German South-West Africa: Walfish Bay (Nightingale).
6. ZONURUS JONESII, Bouleng. Ann. & Mag. N. H. (6) vii., 1891, p. 417.
Transvaal, Southern Rhodesia, Bechuanaland.
Southern Rhodesia: Bulawayo (Kolbe); Matopopo Hill (Pillans);
Bechuanaland: Palapye (Blackbeard).
7. ZONURUS TROPIDOGASTER, sp. n.
Transvaal.

8. ZONURUS CAPENSIS.

Cordylus capensis, Smith, Mag. N. H. (2) ii. 1838, p. 32.

Zonurus capensis, Bouleng. Cat. Liz. ii. p. 258.

Cape.

9. ZONURUS POLYZONUS.

Cordylus polyzonus, Smith, Mag. N. H. (2) ii. 1838, p. 34.

Zonurus polyzonus, Bouleng. Cat. Liz. ii. p. 257.

Cape Colony, Natal, Orange River Colony, German South-West Africa.

Cape Colony: Cape Town (French); Clanwilliam (Sclater, Slabber, Leipoldt); Burghersdorp (Kannemeyer); Knysna (De Souza); Middelburg (Piers); Calvinia (Leipoldt); Bredasdorp (Fry); Hanover (Schreiner); Houtjes Bay, Malmesbury Division (Wilson); Matjesfontein (Cowper); Little Namaqualand (Péringuey, Scully, Schlechter).

Natal: Natal (?).

Orange River Colony: Smithfield (Kannemeyer).

German South-West Africa: Prince of Wales Bay (Marloth).

10. ZONURUS PUSTULATUS, Peters, Mon. Berl. Ac., 1862, p. 19.

German South-West Africa.

2. PSEUDOCORDYLUS.

Smith, Mag. N. H. (2) ii., 1838, p. 32; Bouleng. Cat. Liz. ii. p. 259.

1. PSEUDOCORDYLUS MICROLEPIDOTUS.

Cordylus microlepidotus, Cuv. R. A. 2nd ed. ii. p. 33.

Pseudocordylus microlepidotus, Bouleng. t.c.

Cape Colony, Natal.

Cape Colony: Cape Town (Smith); Basutoland, Morija (Dyke).

Natal: Umvoti (Fry).

3. PLATYSAURUS.

Smith, Ill., Rept.; Bouleng. Cat. Liz. ii. p. 261.

1. PLATYSAURUS CAPENSIS, Smith, l.c., pl. xl.; Bouleng., l.c.

Platysaurus guttatus, Smith, l.c., App. p. 8; Bouleng., t.c., p. 262, pl. xiv. fig. 1.

Cape Colony, Transvaal, Zululand, Southern Rhodesia.

Cape Colony: Victoria West (Lightfoot).

Transvaal: Pietersburg (Daneel).

Southern Rhodesia: Importuni District (Pillans); Salisbury (G. A. K. Marshall, Thomas).

4. CHAMÆSAURA.

Schneid. Hist. Amph. p. 204; Bouleng. Cat. Liz. ii. p. 263.

Three Species in South Africa.

Both pairs of limbs present, pentadactyle; 28 scales round the body	<i>C. ænea.</i>
Both pairs of limbs present, with one or two claws; 24 or 26 scales round the body.. .. .	<i>C. anguina.</i>
Fore limbs absent; 22 scales round the body	<i>C. macrolepis.</i>

1. CHAMÆSAURA ÆNEA.

Cricochalus ænea, Fitzing. Syst. Rept. p. 21.*Chamæsaura ænea*, Bouleng., *t.c.*, p. 263.

Eastern parts of Cape Colony, Natal, Transvaal.

Transvaal: Modderfontein (Haagner).

2. CHAMÆSAURA ANGUINA.

Lacuta anguina, Linn. S.N. i. p. 371.*Chamæsaura anguina*, Bouleng., *t.c.*, p. 264.*Chamæsaura didactyla*, Bouleng. P.Z.S. 1890, p. 82, pl. xi. fig. 1.

Cape Colony, Natal.

Cape Colony: Cape Town (Jeffreys); Port Elizabeth (Drege);

Caledon Division (Lightfoot, Burges); Worcester (Hugo); Kei

Road (Schreiner); Kentani (Pegler); East Pondoland (Rogers);

Little Namaqualand (Hahn).

Natal: Durban (Bowker, Sanderson).

3. CHAMÆSAURA MACROLEPIS.

Mancus macrolepis, Cope, Proc. Ac. Philad., 1862, p. 339.*Chamæsaura macrolepis*, Bouleng. Cat. Liz. ii. p. 264.

Natal, Zululand.

Natal: Durban (Bowker).

FAMILY VARANIDÆ.

Tongue very long and slender, bifid, retractile into a sheath at the base. Dentition pleurodont; teeth large. Head and body covered with small scales. Movable eyelids. No femoral pores.

A single genus:—

1. VARANUS.

Merrem, Tent. Syst. Amph. p. 58; Bouleng. Cat. Liz. ii. p. 304.

Two Species in South Africa.

Nostril an oblique slit; toes short	<i>V. albigularis.</i>
Nostril round; toes longer	<i>V. niloticus.</i>

1. VARANUS ALBIGULARIS.

Tupinambis albigularis, Daud. Hist. Rept. iii. p. 72.

Varanus albigularis, Bouleng., *t.c.*, p. 307.

Interior of Cape Colony, Natal, Zululand, Transvaal, Rhodesia, Portuguese East Africa, German South-West Africa, Angola, British Central Africa.

Cape Colony: Fraserburg Road (Sachs); Graaff-Reinet (A. Eckley); Beaufort West; Little Namaqualand (Péringuey) Tsomo (Watermeyer).

Orange River Colony: Smithfield (Kannemeyer).

Transvaal: Barberton (Rendall).

Southern Rhodesia: Salisbury (ff. Darling, H. M. Oakley).

Portuguese East Africa: Pungwe River (T. D. Butler).

2. VARANUS NILOTICUS.

Lacerta nilotica, Linn. S.N. i. p. 369.

Varanus niloticus, Bouleng., *t.c.*, p. 317.

From Egypt, through the whole of Tropical Africa, to Cape Colony and Natal.

Cape Colony: Griqualand West (Murison); Orange River; Quora River; Transkei (Oakley); Uitenhage (Drege); Bedford (Stephenson); Hanover (Schreiner).

FAMILY AMPHISBÆNIDÆ.

Tongue moderately long, covered with imbricate scale-like papillæ, ending in two long, narrow, smooth points. Teeth large and few. Body vermiform; skin divided into soft squarish segments forming regular annuli. Eyes concealed under the skin.

Three Genera in South Africa.

Segments of the pectoral region not differentiated; eye under an ocular shield; præanal pores *Amphisbæna*.

Segments of the pectoral region not differentiated; no ocular shield, the eye under the posterior part of a large shield in which the nostril is pierced; no præanal pores *Chirindia*.

Segments of the pectoral region enlarged, forming shields; head depressed, with projecting sharp-edged snout; nostril in a small nasal on the lower surface of the snout *Monopeltis*.

1. AMPHISBÆNA.

Linn. S.N. i. p. 392; Bouleng. Cat. Liz. ii. p. 435.

Two Species in South Africa.

One pair of præfrontal shields between the nasals and the frontals *A. violacea*.

Two pairs of præfrontals in a transverse line between the nasals and the frontals *A. quadrifrons*.

1. AMPHISBÆNA VIOLACEA, Peters, Mon. Berl. Ac., 1854, p. 620 ;
Bouleng., *t.c.*, p. 446.
Amphisbæna capensis, Thominot, Bull. Soc. Philom. (7) xi. 1887,
p. 188.
Zululand, Portuguese East Africa, Bechuanaland.
2. AMPHISBÆNA QUADRIFRONS, Peters, Mon. Berl. Ac., 1862, p. 26 ;
Bouleng., *t.c.*, p. 447.
German South-West Africa, Rhodesia.
North-West Rhodesia : Sesheke, Barotseland (Jalla).

2. CHIRINDIA.

Bouleng. Ann. & Mag. N. H. (7) xx., 1907, p. 48.

1. CHIRINDIA SWYNNERTONI, Bouleng., *l.c.*, fig.
Southern Rhodesia : Chirinda Forest, Mashonaland.

3. MONOPELTIS.

Smith, Ill., Rept. ; Bouleng. Cat. Liz. ii. p. 453.

Six Species in South Africa.

- I. A single large shield on the head.
 - A. Tail rounded at the end ; rostral shield tetragonal,
separating the nasals.
3 pairs of large pectoral plates ; 40 to 50 segments round the
body *M. capensis*.
2 pairs of large pectoral plates ; 34 segments round the body *M. decosteri*.
B. Tail truncate at the end ; nasals in contact above the
rostral ; 3 pairs of large pectoral plates ; 28 to 32 seg-
ments round the body.
Snout (seen from above or below) very pointed *M. granti*.
Snout rounded *M. colobura*.
 - II. Two large shields on the head, completely or incompletely
divided by a transverse suture ; tail rounded at the end ;
rostral hexagonal, much wider at the base than above,
separating the nasals.
3 pairs of large pectoral plates *M. leonhardi*.
2 pairs of large pectoral plates *M. quadriscutata*.
1. MONOPELTIS CAPENSIS, Smith, *l.c.*, pl. lxxvii. ; Bouleng., *t.c.*, p. 455.
Northern parts of Cape Colony, German South-West Africa,
Angola.
Cape Colony : Little Namaqualand (Kisch).
 2. MONOPELTIS DECOSTERI, sp. n.
Delagoa Bay (De Coster).

3. *MONOPELTIS GRANTI*, Bouleng. P.Z.S., 1907, p. 485, fig.
Portuguese East Africa.
4. *MONOPELTIS COLOBURA*, sp. n.
North-West Rhodesia.
Sesheke, Barotseland (Jalla).
5. *MONOPELTIS LEONHARDI*, Werner, Jen. Zeitschr. xvi., 1910,
p. 328, pl. vi. fig. 2.
German South-West Africa: Little Namaqualand, Bechuanaland.
Little Namaqualand (Kisch).
Bechuanaland: Palapye (Fry).
6. *MONOPELTIS QUADRISCUTATA*, Werner, *l.c.*
German South-West Africa.

FAMILY LACERTIDÆ.

Tongue moderately long, with scale-like papillæ or oblique plicæ. Dentition pleurodont. Upper surface of head with large symmetrical shields. Belly with transverse series of large shields differing from the scales on the back. Femoral pores usually present.

Six Genera in South Africa.

I. Digits smooth or indistinctly keeled inferiorly, not serrated laterally.

Collar well marked; dorsal scales small *Nucras.*

Collar absent; dorsal scales large, imbricate, strongly keeled *Tropidosaura.*

II. Digits keeled inferiorly, not serrated laterally.

Collar absent; dorsal scales large, imbricate, strongly keeled;
upper head-shields rugose *Ichnotropis.*

Collar well marked; dorsal scales small; digits not serrated
laterally; subocular bordering the lip *Eremias.*

III. Digits serrated laterally; dorsal scales small; subocular not
bordering the lip.

Collar well marked; femoral pores present *Scaptira.*

Collar absent; no femoral pores *Aporosaura.*

1. NUCRAS.

Gray, Ann. N. H. i., 1838, p. 280; Bouleng. Cat. Liz. iii. p. 52.

Two Species.

Lower surface of fore-arm with enlarged shields; a series of scales (sometimes reduced to two) between the supraocular and supra-ciliary shields; foot at least as long as head (to ear-opening) *N. tessellata.*

Lower surface of fore-arm without or with very slightly enlarged shields; usually no scales between the supraocular and supra-ciliary shields; foot shorter than head *N. delalandii.*

I. NUCRAS TESSELLATA.

Lacerta tessellata, Smith, Mag. N. H. (2) ii., 1838, p. 92.

Nucras tessellata, Bouleng., *t.c.*, p. 52.

May be divided into a number of well-defined varieties.

A. Foot considerably longer than the length of the head measured to the posterior border of the ear.

Neck and anterior part of back black, with 3 or 4 white lines above and white vertical bars on the sides; posterior part of body pale buff, with or without black spots. 39-47 scales across the

body *Forma typica.*

Cape Colony.

Cape Colony: Little Namaqualand (Péringuey, Scully, Schlechter); Clanwilliam (Leipoldt); Calvinia (Leipoldt); Robertson (Melle); Worcester (Paynter).

Pale reddish brown above and on the sides; two white, black-edged streaks on the neck; 45-47 scales *Var. elegans*, Smith.

Little Namaqualand.

Neck black with 6 white lines above and white bars on the sides; back pale buff behind, with black vermiculations or lineolations; a white, black-edged dorso-lateral line; sides black, spotted with white; 46-56 scales

Var. livida, Smith.

North-Western parts of Cape Colony.

Little Namaqualand (Scully).

Eight white lines on the back and sides, separated by black streaks, sometimes a ninth on the neck; the series originating just above the ear sometimes broken up into spots; 45-50 scales

Var. tenuolata, Smith.

Cape Colony, Natal, Mossamedes.

Cape Colony: Little Namaqualand (Péringuey).

Natal: Pine Town (Bowker).

B. Foot not or but slightly longer than the head.

Sides of neck and body black with round white spots and back brown with three light, black-edged longitudinal lines, or brown or blackish above and on the sides with 7 white lines, the outer of which may be broken up into spots; 46-60 scales.

Var. holubi, Sldr.

North and east parts of Cape Colony, Orange River Colony, Transvaal, Rhodesia.

Cape Colony: Burghersdorp (Kannemeyer); Little Namaqualand (Péringuey)

Orange River Colony : Smithfield (Kannemeyer).

Transvaal : Barberton (Rendall).

Southern Rhodesia : Bulawayo (Kolbe).

Sides of neck with black and white bars or with vertically elongate black and white ocellar spots; usually two or three light lines along the back and ocellar spots on the sides; 44-58 scales Var. *ornata*, Gray.

Transvaal, Rhodesia, Zululand, Portuguese East Africa.

Sides of neck with black and white bars; back and sides with black and white ocelli much as in *N. delalandii*; a light vertebral streak sometimes present; 40-48 scales . . Var. *n. ocellata*, Blgr.

Transvaal.

Loc. (?) No history.

2. *NUCRAS DELALANDII*.

Lacerta lalandii, M.-Edw. Ann. Sc. Nat. xvi., 1829, p. 70.

Nucras delalandii, Bouleng., *t.c.*, p. 53.

Cape Colony, Natal, Transvaal, Zululand, Damaraland.

Cape Colony : Knysna (Maritz); Kentani (Kolbe); Uitenhage (Fairbridge); Port Elizabeth (Moorhouse); Burghersdorp (Kannemeyer); East London (Wood); Encobo (Weisbecker); West Pondoland (Weisbecker).

Basutoland : Morija (Dyke).

Natal : Umvoti (Fry).

Transvaal : Johannesburg (Ross).

2. *TROPIDOSAURA*.

Fitzing. N. Class. Rept. p. 22; Bouleng. Cat. Liz. iii. p. 50.

1. *TROPIDOSAURA MONTANA*, Dum. and Bibr. Erp. Gén. v. p. 172;

Bouleng., *t.c.*, p. 51.

Southern parts of Cape Colony.

Cape Town (French).

3. *ICHNOTROPIS*.

Peters, Mon. Berl. Ac., 1854, p. 617; Bouleng. Cat. Liz. iii. p. 78.

Three Species.

A. Frontonasal single; subocular bordering the lip.

Hind limb not reaching the ear *I. capensis*.

Hind limb reaching the ear or beyond *I. longipes*.

B. Frontonasal divided into two by a longitudinal suture; sub-

ocular separated from the lip by the upper labials *I. squamulosa*.

1. *ICHTNOTROPIS CAPENSIS*.

Algyra capensis, Smith, Mag. N. H. ii., 1838, p. 94.

Ichnotropis capensis, Bouleng., t.c., p. 78.

Kalahari, Zululand, Transvaal, Rhodesia, Portuguese East Africa, German South Africa, Angola, Congo.

Portuguese East Africa: Delagoa Bay (De Coster).

Transvaal: Pietersburg (Daneel).

Southern Rhodesia: Matoppo Hills (Pillans).

2. *ICHTNOTROPIS LONGIPES*, Bouleng. P.Z.S., 1902, ii. p. 17, pl. iii. fig. 2.

Southern and North-Western Rhodesia.

North-Western Rhodesia: Livingstone (Sykes).

3. *ICHTNOTROPIS SQUAMULOSA*, Peters, Mon. Berl. Ac., 1854, p. 617; Bouleng. Cat. Liz. iii. p. 79.

Kalahari, Zululand, Rhodesia, Portuguese East Africa, British East Africa.

Portuguese East Africa: Delagoa Bay (De Coster).

Southern Rhodesia: Bulawayo (Pillans); Hanyani River (Thomas); Salisbury (ff. Darling).

4. *EREMIAS*.

Wieg. Herp. Mex. p. 9; Bouleng. Cat. Liz. iii. p. 80.

Six Species in South Africa.

I. Lower eyelid scaly, opaque or slightly transparent.

A. Ventral plates in 6 longitudinal series; supraoculars separated from frontal by granules *E. lugubris*.

B. Ventral plates in 10 longitudinal series or more.

Ventral plates in 10 or 12 longitudinal series; distance between loreal and first supraocular less than length of latter; frontonasal separated from rostral; 60-65 scales across middle of body *E. namaquensis*.

Ventral plates in 14 or 16 longitudinal series; distance between loreal and first supraocular at least equal to length of latter; frontonasal separated from rostral; 65-75 scales across middle of body *E. burchelli*.

Ventral plates in 14 to 18 longitudinal series; distance between loreal and first supraocular at least equal to length of latter; frontonasal usually in contact with rostral; 50-55 scales across middle of body *E. capensis*.

II. Lower eyelid with 2 to 5 large, black-edged scales forming a transparent disk.

Ventral plates in 10 longitudinal series *E. undata*.

Ventral plates in 12 or 14 longitudinal series *E. lineo-ocellata*.

1. EREMIAS LUGUBRIS.

Lacerta lugubris, Smith, Ann. N. H. ii., 1838, p. 93.

Eremias lugubris, Bouleng., *t.c.*, p. 84.

Bechuanaland, Southern Rhodesia, Transvaal, German South Africa, Angola.

Lake Ngami District (Woosnam).

Transvaal: Leydsdorp; Messina (Dr. H. L. Gordon).

2. EREMIAS NAMAQUENSIS, Dum. & Bibr. Erp. Gén. v. p. 307;
Bouleng., *t.c.*, p. 91.

Cape Colony, German South-West Africa, Angola.

Cape Colony: Bredasdorp (Fry); Beaufort West (Jackson); Matatiele (Weisbecker); Little Namaqualand (Péringuey, Schlechter, Turle).

3. EREMIAS BURCHELLI, Dum. & Bibr. Erp. Gén. v. p. 303;
Bouleng., *t.c.*, p. 95.

Cape Colony, Orange River Colony.

Orange River Colony: Smithfield (Kannemeyer).

4. EREMIAS CAPENSIS.

Lacerta capensis, Smith, Mag. N. H., 1838, p. 93.

Eremias capensis, Bouleng., *t.c.*, p. 96.

Cape Colony, German South-West Africa.

Cape Colony: Clanwilliam (L. S. Pattison); Matjesfontein, Worcester Division (Trimen); Hanover (Schreiner); De Aar (Naughton); Little Namaqualand (Schlechter).

5. EREMIAS UNDATA.

Lacerta undata, Smith, Mag. N. H., 1838, p. 93.

Eremias undata, Bouleng., *t.c.*, p. 92.

Eremias inornata, Roux, Zool. Jahrb., Syst. xxv., 1907, p. 427, pl. xv. figs. 1-3.

Cape Colony, German South-West Africa.

Cape Colony: Middelburg (Piers); Little Namaqualand (Schlechter).

German South-West Africa: Luderitzbucht (Gilchrist).

6. EREMIAS LINEO-OCELLATA, Dum. & Bibr. Erp. Gén. v. p. 314;
Bouleng., *t.c.*, p. 94.

E. pulchella, Gray, Cat. Liz. p. 42; Bouleng., *t.c.*, p. 93.

Cape Colony, Natal, Orange River Colony, Transvaal, German South-West Africa.

Cape Colony: Prince Albert (Purcell); Ceres (Lightfoot); Clan-

william (Schlechter); Tulbagh (Purcell, Lightfoot); Calvinia (Schlechter); Worcester (Purcell); Middelburg (Piers); De Aar (?); Burghersdorp (Kannemeyer); Albany Division (French); Paarl (Lightfoot); Aliwal North (Weisbecker); Matjesfontein (Lightfoot); Hanover (Schreiner, Shortridge); Little Namaqualand (Schlechter).
 Orange River Colony: Smithfield (Kannemeyer).
 Natal: Durban (Sanderson).

5. SCAPTIRA.

Wieg. Herp. Mex. p. 9; Bouleng. Cat. Liz. iii. p. 107.

Five Species in South Africa.

- I. Snout more or less conical, upper labials not forming an angle.
 A. Lower nasal forming a suture with the rostral; ventral plates in 12 or 14 longitudinal series.
 Frontonasal separated from the rostral; interparietal usually in contact with an occipital *S. knoxii*.
 Frontonasal in contact with the rostral; occipital minute or absent *S. depressa*.
 B. Lower nasal separated from the rostral; ventral plates in 16 or 18 longitudinal series *S. serripes*.
- II. Snout wedge-shaped, upper labials forming an angle; lower nasal forming a suture with the rostral.
 20 to 24 ventral plates across middle of body; frontonasal separated from the rostral *S. ctenodactyla*.
 26 to 30 ventral plates across middle of body; frontonasal in contact with the rostral *S. cuneirostris*.

1. SCAPTIRA KNOXII.

Lacerta knoxii, M.-Edw. Ann. Sc. Nat. xvi., 1829, p. 76.

Scaptira knoxii, Bouleng., t.c., p. 109.

Cape Colony, Natal, German South-West Africa.

Cape Colony: Cape Town (de Souza); Cape Division (French); Clanwilliam (Leipoldt); Calvinia (Leipoldt); Matjesfontein, Worcester Division (Lightfoot); Touw's River (Paynter); Little Namaqualand (Péringuey, Schlechter).
 Natal: Durban (Bowker).

2. SCAPTIRA DEPRESSA.

Lacerta depressa, Merrem, Tent. Herp. p. 63.

Scaptira depressa, Bouleng., t.c., p. 110.

Eremias suborbitalis, Peters, Cefvers. Vet. Ak. Förh., 1869, p. 658; Bouleng., t.c., p. 90

Cape Colony, German South-West Africa.

Cape Colony : Little Namaqualand (Schlechter).

3. SCAPTIRA SERRIPES.

Eremias serripes, Peters, Öfvers. Vet. Ak. Förh., 1869, p. 659.

Scaptira serripes, Bouleng., t.c., p. 111.

Little Namaqualand, German South-West Africa, Benguela.

Cape Colony : Little Namaqualand (Péringuey).

4. SCAPTIRA CTENODACTYLA.

Lacerta ctenodactylus, Smith, Mag. N. H. (2) ii., 1838, p. 93.

Scaptira ctenodactyla, Bouleng., t.c., p. 115.

Cape Colony, German South-West Africa.

Cape Colony : Little Namaqualand (Scully, Péringuey).

5. SCAPTIRA CUNEIROSTRIS, Strauch, Mém. Biol. Ac. St. Pétersb. vi.,

1867, p. 411 ; Bouleng., t.c., p. 116.

Damaraland.

6. APOROSAURA.

Bouleng. Cat. Liz. iii. p. 117.

1. APOROSAURA ANCHIETÆ.

Pachyrhynchus anchiætæ, Bocage, Ann. & Mag. N. H. (3) xx.,
1867, p. 226.

Aporosaura anchiætæ, Bouleng., t.c.

German South-West Africa, Angola.

FAMILY GERRHOSAURIDÆ.

Tongue moderately long, with scale-like papillæ or oblique plicæ. Dentition pleurodont. Upper surface of head with large symmetrical shields. Body with large shields over bony plates, and a lateral fold covered with granules. Femoral pores present.

Three Genera in South Africa.

Tongue nearly entirely covered with imbricate scale-like papillæ ; præfrontal shields present ; lower eyelid scaly *Gerrhosaurus*.

Tongue nearly entirely covered with oblique plicæ ; no præfrontal shields ; lower eyelid scaly ; limbs short or rudimentary *Tetradactylus*.

Tongue nearly entirely covered with imbricate scale-like papillæ ; no præfrontal shields ; lower eyelid with a large transparent disk *Cordylosaurus*.

1. GERRHOSAURUS.

Wieg. Isis, 1828, p. 378; Bouleng. Cat. Liz. iii. p. 120.

Six Species in South Africa.

- I. Ventral shields in 14 or 16 longitudinal series; tympanic shield large, crescentic; 18 to 21 femoral pores on each side *G. validus*.
- II. Ventral shields in 10 longitudinal series; frontonasal usually in contact with the rostral.
Tympanic shield narrow; 12 or 13 femoral pores on each side .. *G. grandis*.
Tympanic shield large, crescentic; dorsal shields unicarinate; 15 to 18 femoral pores on each side.. *G. typicus*.
- III. Ventral shields in 8 longitudinal series; nasals usually in contact with each other behind the rostral.
Tympanic shield large, crescentic; head (measured to ear) $4\frac{1}{2}$ to $5\frac{1}{2}$ times in length from snout to vent; 14 to 18 femoral pores on each side *G. auritus*.
Tympanic shield narrow; head $4\frac{1}{2}$ to 5 times in length from snout to vent in adult; præfrontals forming a long median suture; 14 to 20 femoral pores on each side *G. nigrolineatus*.
Tympanic shield narrow; head 5 to $6\frac{1}{2}$ times in length from snout to vent in adult; frontonasal usually in contact with frontal, or præfrontals forming a short suture; 10 to 15 femoral pores on each side *G. flavigularis*.

1. GERRHOSAURUS VALIDUS, Smith, Ill., Rept., App. p. 9; Bouleng., *t.c.*, p. 121.
Transvaal, Rhodesia, Portuguese East Africa, Angola.
2. GERRHOSAURUS GRANDIS, Bouleng. Ann. Natal Mus. i., 1908, p. 233, pl. xxxvi.
Zululand.
3. GERRHOSAURUS TYPICUS, Smith, Mag. Zool. i., 1837, p. 143; Bouleng., *t.c.*, p. 123.
North-western parts of Cape Colony.
Little Namaqualand (Péringuey).
4. GERRHOSAURUS AURITUS, Boettg. Ber. Senck. Ges., 1886-87, p. 148, pl. v. fig. 3.
Kalahari, Ovamboland, Angola.
5. GERRHOSAURUS NIGROLINEATUS, Hallow. Proc. Ac. Philad., 1857, p. 49; Bouleng., *t.c.*, p. 122.
Kalahari, Southern Rhodesia, Angola to Gaboon and Uganda.
Southern Rhodesia: Hunyani River (Thomas); Victoria Falls (Kirkman).
6. GERRHOSAURUS FLAVIGULARIS, Wieg. Isis, 1828, p. 379; Bouleng., *t.c.*, p. 122.

Cape Colony, Natal, Zululand, Orange River Colony, Transvaal, Rhodesia, East Africa to Abyssinia.
 Cape Colony: Cape Town (De Souza); Knysna (Maritz); Port Alfred (Becker); Transkei (Bowker); Port St. Johns (Shortridge); Robertson (Melle); Port Elizabeth (Moorhouse); Serowe, Bechuanaland (Blackbeard).
 Transvaal: Johannesburg (Ross).
 Southern Rhodesia: Mazoe, Mashonaland (ff. Darling).

2. TETRADACTYLUS.

Merrem, Tent. Syst. Amph. p. 75; Bouleng. Cat. Liz. iii. p. 124.

Four Species.

Limbs short but well developed, pentadactyle	<i>T. seps.</i>
Limbs very short, tetradactyle	<i>T. tetradactylus.</i>
Limbs minute, anterior didactyle, posterior undivided	<i>T. breyeri.</i>
Limbs minute, undivided	<i>T. africanus.</i>

1. TETRADACTYLUS SEPS.

Lacerta seps, Linn. S. N. i. p. 363.

Tetradactylus seps, Bouleng., *t.c.*, p. 124.

Southern parts of Cape Colony.

Cape Colony: Cape Town (De Souza); Robben Island (Oakley); Knysna (Maritz); Paarl Division (Du Plessis).

2. TETRADACTYLUS TETRADACTYLUS.

Lacerta tetradactyla, Lacep. Ann. Mus. ii., 1803, p. 351.

Tetradactylus tetradactylus, Bouleng., *t.c.*, p. 125.

Cape Colony.

Cape Colony: Cape Division (Purcell); Robertson (Melle); Worcester Division (R. Franke); Namaqualand(?)

3. TETRADACTYLUS BREYERI, Roux, Zool. Jahrb., Syst. xxv., 1907, p. 430, pl. xiv. fig. 6.

Transvaal.

4. TETRADACTYLUS AFRICANUS.

Caitia africana, Gray, Ann. N. H. i., 1838, p. 389.

Tetradactylus africanus, Bouleng., *t.c.*, p. 125.

Northern and eastern parts of Cape Colony, Natal, Zululand, Angola.

Cape Colony: Little Namaqualand (Péringuey).

Natal: Durban (Bowker); Umvoti (Fry).

3. CORDYLOSAURUS.

Gray, P.Z.S., 1865, p. 641; Bouleng. Cat. Liz. iii. p. 126.

Two Species, which may have to be united.

Dorsal shields feebly or more or less strongly keeled *C. trivittatus.*
 Dorsal shields nearly smooth *C. subtessellatus.*

1. CORDYLOSAURUS TRIVITTATUS.

Gerrhosaurus trivittatus, Peters, Mon. Berl. Ac., 1862, p. 18.

Cordylus trivittatus, Bouleng., *l.c.*

Northern parts of Cape Colony and German South-West Africa.

Cape Colony: Little Namaqualand (Scully); Clanwilliam Division (Schlechter); Calvinia Division (Schlechter).

2. CORDYLOSAURUS SUBTESSELLATUS.

Gerrhosaurus subtessellatus, Smith, Ill., Rept. pl. xli. fig. 2.

Cordylus subtessellatus, Bouleng., *l.c.*

Great Namaqualand.

Loc. (?) No history.

FAMILY SCINCIDÆ.

Tongue moderately long, with scale-like papillæ. Dentition pleurodont. Upper surface of head with large symmetrical shields. Body with imbricate scales over bony plates. No femoral pores.

This family includes the *Anelytropidæ*.

Eight Genera in South Africa.

I. Nostril in a small or moderate-sized nasal, well separated from the rostral; præfrontals and frontoparietals present.

Movable eyelids, the lower with a transparent disk; scales tri- or quinque carinate *Mabuia.*

Movable eyelids, the lower scaly; limbs short; scales smooth or feebly tricarinate *Lygosoma.*

No movable eyelids; scales smooth *Ablepharus.*

II. Nostril pierced between the rostral and a very small nasal, which may be reduced to a narrow ring; scales smooth; limbs weak or absent; præfrontals and frontoparietals very small or absent.

First upper labial not entering the nostril; palatine bones meeting on the middle line *Scelotes.*

First upper labial not entering the nostril; palatine bones not meeting on the middle line *Herpetosaura.*

First upper labial entering the nostril; palatine bones not meeting on the middle line *Sepsina.*

III. Nostril pierced in the anterior part of the very large rostral, with the posterior border of which it is connected by a longitudinal cleft; scales smooth; limbs absent.

Eye very small, with lower lid *Acontias*.
 Eye concealed under the shields *Typhlosaurus*.

1. MABUIA.

Fitzing. N. Class. Rept. p. 23; Bouleng. Cat. Liz. iii. p. 150.

Synopsis of the South African Species.

I. Subdigital lamellæ and scales on soles smooth or tubercularly keeled.

A. 28 to 32 scales round the body; anterior border of ear with 2 or 3 long pointed lobules.

Frontonasal in contact with frontal; a light lateral streak, passing through the ear *M. homalocephala*.

Fræfrontals usually forming a median suture; no light lateral streak *M. peringueyi*.

B. 34 or 36 scales round the body; anterior border of ear with 3 short rounded lobules *M. gruetzneri*.

II. Subdigital lamellæ keeled; scales on soles often keeled or spinose, especially in the young.

A. Subocular not narrowed inferiorly, similar in shape to the upper labials.

Snout pointed; 36 to 44 scales round the body; ear-opening with 3 to 5 short obtusely pointed lobules anteriorly *M. quinquetæniata*.

Snout very obtuse; 30 to 36 scales round the body; scales on anterior border of ear not differentiated *M. trivittata*.

Snout very obtuse; 30 or 32 scales round the body; 2 or 3 large projecting auricular lobules *M. occidentalis*.

B. Subocular narrowed inferiorly, or not reaching the lip.
 1. Snout normal.

a. Ear-opening partly concealed under long pointed lobules; lower border of subocular usually more than one-third the length of the upper; 30 to 34 scales round the body.

Hind limb not reaching the axil; a light lateral streak passing through the ear *M. varia*.

Hind limb reaching the axil.. .. . *M. hildebrandti*.

b. Ear-opening largely exposed, ear-lobules very short; lower border of subocular, if reaching the lip, not more than one-third the length of the upper; 32 to 40 scales round the body.

Scales mostly tricarinate, sometimes quinquecarinate; a more or less distinct light lateral band, proceeding from above the eye *M. striata*.

Scales quinquecarinate; head and body remarkably depressed; brown above, uniform or spotted with black, uniform black, or light with six dark longitudinal bands *M. sulcata*.

2. Snout much depressed, with deeply concave sides, sharp canthus rostralis, and angularly projecting upper labials; ear-lobules long; 28 to 32 scales round the body *M. acutilabris*.

1. *MABUIA HOMALOCEPHALA.*

Euprepes homalocephalus, Wieg. Isis, 1828, p. 374.

Mabuia homalocephala, Bouleng. Cat. Liz. iii. p. 170.

Cape Colony, Natal, Zululand, Transvaal, Southern Rhodesia.

Cape Colony: Cape Division (De Souza, French); Robben Island (Oakley); Knysna (Moritz); Bredasdorp (Fry); Little Namaqualand (Péringuey).

Natal: Pinetown (Bowker).

Transvaal: Johannesburg (Cregoe).

2. *MABUIA PERINGUEYI*, Bouleng. Ann. & Mag. N. H. (6) ii., 1888, p. 139.

Little Namaqualand, German South-West Africa.

Cape Colony: Little Namaqualand (Péringuey).

German South-West Africa: Damaraland (Marloth).

3. *MABUIA GRUETZNERI.*

Euprepes gruetzneri, Peters, Mon. Berl. Ac., 1869, p. 433.

Mabuia gruetzneri, Bouleng. Cat. Liz. iii. p. 171.

Portuguese East Africa.

4. *MABUIA QUINQUETÆNIATA.*

Scincus quinquetæniatus, Lichtenst. Verz. Doubl. Mus. Berl. p. 103.

Mabuia quinquetæniata, Bouleng. Cat. Liz. iii. p. 198.

Egypt and Arabia to Southern Rhodesia and Zululand.

Southern Rhodesia: Matoppo Hills (Pillans); Hunyani River (Thomas).

5. *MABUIA TRIVITTATA.*

Scincus trivittatus, Cuv. R. An., 2nd ed. ii. p. 62.

Mabuia trivittata, Bouleng. Cat. Liz. iii. p. 195.

Mabuia calaharica, Werner, Jen. Zeitschr. xvi., 1910, p. 350, pl. viii. fig. 11.

Cape Colony, Natal, Orange River Colony, Transvaal, German South-West Africa, Southern Rhodesia.

Cape Colony: Cape Division (Butler, Oakley, Picton); Worcester Division (Purcell); Calvinia (Leipoldt); King William's Town (Selater); George (Leipoldt); Caledon Division (Burgess); Robertson (Melle); Mount Ayliff (Weisbecker); Burghersdorp (Kannemeyer); Little Namaqualand (Péringuey, Warden, Turle, Schlechter).

Natal: Durban (Bowker).

Orange River Colony : Smithfield (Kannemeyer) ; Vredefort Road (Barrett-Hamilton).

Transvaal : Johannesburg (Cregoe, Ross) ; Krugersdorp, (Watson).

6. *MABUIA OCCIDENTALIS.*

Euprepes occidentalis, Peters, Mon. Berl. Ac., 1867, p. 20.

Mabuia occidentalis, Bouleng. Cat. Liz. iii. p. 196.

Little Namaqualand, German South-West Africa.

Cape Colony : Little Namaqualand (Péringuey, Schlechter).

German South-West Africa : Damaraland (Marloth).

7. *MABUIA VARIA.*

Euprepes varius, Peters, Mon. Berl. Ac., 1867, p. 20.

Mabuia varia, Bouleng. Cat. Liz. iii. p. 202.

South Africa, Angola, East Africa.

Cape Colony : King William's Town (Selater) ; Calvinia (Leipoldt) ; George (Leipoldt) ; Caledon Division (Burgess) ; Robertson (Melle) ; Port St. Johns (Weisbecker) ; Mount Ayliff (Weisbecker) ; Albany Division (French) ; Graaff-Reinet (Paynter) ; Little Namaqualand (Péringuey, Warden, Turle, Schlechter) ; Hanover (Schreiner).

Orange River Colony : Smithfield (Kannemeyer).

Transvaal : Johannesburg (Cregoe, Ross).

Southern Rhodesia : Salisbury (Marshall, Pillans, Thomas) ; Lomagundi (Drury).

Bechuanaland : Serowe (Blackbeard).

German South-West Africa : Damaraland (Marloth).

8. *MABUIA HILDEBRANDTI.*

Euprepes hildebrandti, Peters, Mon. Berl. Ac., 1874, p. 372, pl. —, fig. 4.

Mabuia hildebrandti, Bouleng. Cat. Liz. iii. p. 207 ; Werner, Jen. Zeitschr. xvi., 1910, p. 347, pl. vii. fig. 5.

Somaliland, German South-West Africa.

Cape Colony : Little Namaqualand (Péringuey).

German South-West Africa : Windhoek (Gilchrist).

9. *MABUIA STRIATA.*

Tropidolepisma striatum, Peters, Mon. Berl. Ac., 1844, p. 36.

Euprepes wahlbergii, Peters, Gefvers. Vet. Ak. Förh., 1869, p. 661.

Mabuia striata and *wahlbergii*, Bouleng. Cat. Liz. iii. pp. 204, 205.

Northern parts of Cape Colony, Natal, Zululand, Orange River Colony, Transvaal, Portuguese East Africa, Southern Rhodesia, German South-West Africa, Central and East Africa.

- Cape Colony : De Aar (?) ; Little Namaqualand (Schlechter).
 Transvaal : Johannesburg (Cregoe, Ross) ; Barberton (Rendall) ;
 Leydsdorp (Naughton).
 Southern Rhodesia : Bulawayo (Kolbe) ; Matoppo Hills (Pillans) ;
 Lomagundi (Drury) ; Salisbury (Marshall) ; Mazoe (ff. Dar-
 ling).
 Portuguese East Africa : Delagoa Bay (De Coster).

10. MABUIA SULCATA.

Euprepes sulcatus, Peters, Mon. Berl. Ac., 1867, p. 20.

Mabuia sulcata, Bouleng. Cat. Liz. iii. p. 206.

Cape Colony, German South-West Africa.

Cape Colony : Cape Town (Layard) ; Prince Albert (Purcell) ;
 Matjesfontein (Lightfoot) ; Little Namaqualand (Péringuey,
 Broom, Warden).

Natal : Durban (Saunderson).

11. MABUIA ACUTILABRIS.

Euprepes acutilabris, Peters, Mon. Berl. Ac., 1862, p. 19.

Mabuia acutilabris, Bouleng. Cat. Liz. iii. p. 208.

Little Namaqualand, German South-West Africa, Angola.

Cape Colony : O'okiep, Little Namaqualand (Warden).

German South-West Africa : Damaraland (Marloth) ; Walfish
 Bay (Nightingale).

2. LYGOSOMA.

Gray, Zool. Journ. iii., 1828, p. 228 ; Bouleng. Cat. Liz. iii. p. 209.

1. LYGOSOMA SUNDEVALLII.

Eumeces sundevallii, Smith, Ill., Rept., App. p. 11.

Lygosoma sundevallii, Bouleng., *t.c.*, p. 307.

Natal, Transvaal, Southern Rhodesia, Portuguese East Africa,
 German South-West Africa, Tropical Africa.

Southern Rhodesia : Salisbury (Marshall).

German South-West Africa : Damaraland (Du Plessis).

3. ABLEPHARUS.

Fitzing. Verh. Ges. Naturf. Fr. i., 1824, p. 297 ; Bouleng. Cat. Liz.
 iii. p. 344.

1. ABLEPHARUS WAHLBERGII.

Cryptoblepharus wahlbergii, Smith, Ill., Rept., App. p. 10.

Ablepharus wahlbergii, Bouleng., *t.c.*, p. 350.

South Africa, Angola, Central and East Africa.

Natal : Malvern (Bowker).

Transvaal : Johannesburg (Ross).

4. SCELOTES.

Fitzing. N. Class. Rept. p. 23 ; Bouleng. Cat. Liz. iii. p. 408.

Eight Species in South Africa.

I. Both pairs of limbs present.

Limbs pentadactyle ; 22 scales round the body *S. capensis.*

Limbs tridactyle ; second and third fingers equal ; 20 scales round the body *S. caffer.*

Limbs tridactyle ; third finger shorter than second ; 18 scales round the body *S. tridactylus.*

II. Fore limbs absent ; 18 or 20 scales round the body.

Hind limb didactyle ; supranasal in contact with the first labial *S. bipes.*

Hind limb monodactyle ; supranasal in contact with the first labial *S. gronovii.*

Hind limb represented by a bud-like rudiment ; a postnasal between the supranasal and the first labial *S. guentheri.*

III. No trace of limbs externally ; supranasal in contact with the first labial.

Four supraoculars, three in contact with the frontal ; body cylindrical *S. inornatus.*

Three supraoculars ; body subquadrangular *S. bicolor.*

1. SCELOTES CAPENSIS.

Gongylus capensis, Smith, Ill., Rept., App. p. 10.

Scelotes capensis, Bouleng., *t.c.*, p. 412, pl. xxxiv. fig. 1.

“Western coast of South Africa.”

2. SCELOTES TRIDACTYLUS, Bouleng., *t.c.*, p. 413, pl. xxxiv. fig. 2.

Cape Colony : Little Namaqualand (Schlechter) ; Bushmanland (Alston).

3. SCELOTES CAFFER.

Sepomorphus caffer, Peters, Mon. Berl. Ac., 1861, p. 422.

Scelotes caffer, Bouleng., *t.c.*, p. 413.

Cape Colony : Dunbrody (J. O'Neil).

4. SCELOTES BIPES.

Anquis bipes, Linn. S. N. i. p. 390.

Scelotes bipes, Bouleng., *t.c.*, p. 414.

Cape Colony, German South-West Africa.

Cape Colony : Cape Division (Selater, Purcell, Beard) ; Robben Island (Oakley, Lightfoot) ; Calvinia (Leipoldt) ; Clanwilliam (Lightfoot, Slabber).

Portuguese East Africa : Delagoa Bay (De Coster).

5. SCELOTES GRONOVII.

Seps gronovii, Daud. Hist. Rept. iv. p. 354.

Scelotes gronovii, Bouleng., P.Z.S., 1898, p. 918.

Cape Colony : Dassen Island (Spencer).

6. SCELOTES GUENTHERI, Bouleng. Cat. Liz. iii. p. 414, pl. xxxiv. fig. 3.
Natal, Zululand.

7. SCELOTES INORNATUS.

Lithophilus inornatus, Smith, Ill., Rept., App. p. 12.

Scelotes inornatus, Bouleng., t.c., p. 415, pl. xxxiv. fig. 4.

"Interior of South Africa," Natal.

8. SCELOTES BICOLOR.

Lithophilus bicolor, Smith, l.c., p. 13.

Scelotes bicolor, Bouleng, t.c., p. 416.

Cape Colony : Little Namaqualand.

5. HERPETOSAURA.

Peters, Mon. Berl., 1854, p. 619.

Three Species.

Limbs present, pentadactyle ; ear distinct *H. mira*.

Limbs absent ; ear hidden ; 4 supraoculars.. .. . *H. anguina*.

Limbs absent ; ear hidden ; 3 supraoculars.. .. . *H. arenicola*.

1. HERPETOSAURA MIRA, Roux, Zool. Jahrb., Syst., xxv., 1907,
p. 435, pl. xiv. figs. 7 and 8.

Transvaal.

2. HERPETOSAURA ANGUINA.

Herpetoseps anguinus, Bouleng. Cat. Liz. iii. p. 416, pl. xxxv. fig. 1.

Cape Colony.

Cape Colony : Port Elizabeth (Leslie) ; Peddy Coast (Albany
Museum) ; Dunbrody, Uitenhage Division (O'Neil).

3. HERPETOSAURA ARENICOLA, Peters, Mon. Berl. Ac., 1854, p. 619.

Scelotes arenicola, Bouleng. Cat. Liz. iii. p. 145.

Zululand, Portuguese East Africa.

Portuguese East Africa : Delagoa Bay (De Coster).

6. SEPSINA.

Bocage, Journ. Sc. Lisb. i., 1866, p. 62 ; Bouleng. Cat. Liz. iii. p. 417.

Two Species in South Africa.

Limbs pentadactyle *S. weberi*.

Limbs tridactyle *S. grammica*.

1. SEPSINA WEBERI, Roux, Zool. Jahrb., Syst., xxv., 1907, p. 437, pl. xiv. fig. 9.
Little Namaqualand.
2. SEPSINA GRAMMICA, Cope, Proc. Ac. Philad., 1868, p. 318.
"South-West coast of Africa."

7. ACONTIAS.

Cuvier, R. An. ii. p. 60; Bouleng. Cat. Liz. iii. p. 424.

Three Species in South Africa.

- Snout rounded, moderately projecting; the distance between the anterior corner of the eye and the nostril does not exceed the length of the rostral shield; the width of the large anal plate exceeds the distance between the frontal and the tip of the snout; belly yellowish *A. meleagris*.
- Snout rounded, moderately projecting; the distance between the anterior corner of the eye and the nostril exceeds the length of the rostral shield; the width of the large anal plate does not exceed the distance between the frontal and the tip of the snout; uniform dark brown or blackish *A. plumbeus*.
- Snout subcuneiform, much depressed, strongly projecting: 14 scales round the body *A. lineatus*.

1. ACONTIAS MELEAGRIS.

Anguis meleagris, Linn. S. N. i. p. 390.

Acontias meleagris, Bouleng., *t.c.*, p. 427.

Cape Colony: Cape Division (Oakley, Layard, Purcell); Grahams-town (Schönland, Ivy); Robben Island (Oakley, Lightfoot); Burghersdorp (Kannemeyer); Port Elizabeth (Cregoe, Moorhouse); Bedford Division (Tucker, Stephenson); Malmesbury (Gird); Graaff-Reinet (Paynter); Tsomo, Transkei (Bowker); Clanwilliam (Leipoldt); Uitenhage (Drege); Goudini, Worcester Division (Franke); Robertson Division (Melle, Groom); Umtata (Kolbe); Little Namaqualand (Péringuey, Howard).

Portuguese East Africa: Delagoa Bay (De Coster).

2. ACONTIAS PLUMBEUS, Bianconi, Spec. Zool. Mossamb., Rept. p. 35, pl., iii.; Bouleng., *t.c.*, p. 428.

Eastern parts of Cape Colony, Zululand, Portuguese East Africa.

Cape Colony: East London (Wood).

Portuguese East Africa: Delagoa Bay (De Coster).

3. ACONTIAS LINEATUS, Peters, Mon. Berl. Ac. 1879; p. 774, pl. —, fig. 2; Bouleng., *t.c.*, p. 428.

A. grayi, Bouleng., *l.c.*

Cape Colony: Cape Town (?); Malmesbury (Gird); Clanwilliam (Leipoldt); Port Elizabeth (Drege); Dunbrody, Uitenhage Division (O'Neil); Van Ryn's Dorp (A. W. Rogers); Little Namaqualand (Péringuey, Turle, Schlechter, Strauss).

8. TYPHLOSAURUS.

Wieg. Herp. Mex. p. 11; Bouleng. Cat. Liz. iii. p. 432.

Six Species.

- I. Rostral not longer than the other head-shields together.
 16 scales round the body; three azygous shields on the head, behind the rostral. *T. cregoi*.
 14 scales round the body; two azygous shields on the head, behind the rostral *T. lineatus*.
 12 scales round the body; two azygous shields on the head, behind the rostral *T. aurantiacus*.
- II. Rostral a little longer than the other head-shields together; interparietal shorter than frontal; 14 scales round the body *T. meyeri*.
- III. Rostral at least twice as long as the other head-shields together.
 14 scales round the body *T. cæcus*.
 12 scales round the body *T. vermis*.
1. TYPHLOSAURUS CREGOI, Bouleng. Ann. & Mag. N. H. (7) xii., 1903, p. 434.
Transvaal.
 2. TYPHLOSAURUS LINEATUS, Bouleng. Cat. Liz. iii. p. 432, pl. xxxviii. fig. 3.
Southern Rhodesia, Little Namaqualand.
Loc. (?) No history.
 3. TYPHLOSAURUS AURANTIACUS.
Typhline aurantiaca, Peters, Mon. Berl. Ac., 1854, p. 620.
Typhlosaurus aurantiacus, Bouleng., *t.c.*, p. 433.
Zululand, Portuguese East Africa.
Loc. (?) No history.
 4. TYPHLOSAURUS MEYERI, Boettg. Abh. Mus. Dresd., 1892-93, No. 5 (1894).
German South West Africa.
 5. TYPHLOSAURUS CÆCUS.
Acontias cæcus, Cuvier, R. An. ii. p. 60.
Typhlosaurus cæcus, Bouleng., *t.c.*, p. 434.
Cape District.
 6. TYPHLOSAURUS VERMIS, Bouleng., *t.c.*, p. 434, pl. xxxviii. fig. 4.
Cape Colony: Little Namaqualand (Lightfoot, Howard).

RHIPTOGLOSSA.

FAMILY CHAMÆLEONTIDÆ.

Tongue club-shaped, projectile. Dentition acrodont. Digits arranged in two bundles, forming a grasping organ. Tail prehensile. Head and body covered with granular or tubercular scales.

Two Genera in South Africa.

Claws simple; tail at least as long as trunk *Chamæleon.*
 Claws bicuspid; tail short *Rhampholeon.*

1. CHAMÆLEON.

Laurenti, Syn. Rept. p. 45; Bouleng. Cat. Liz. iii. p. 438.

Synopsis of the South African Species.

- I. A series of white enlarged conical granules forms a gulo-ventral crest from chin to vent; body uniformly granulate; movable dermal lobes behind the occiput.
- Occipital lobes small, just meeting behind the occiput *C. quilensis.*
 Occipital lobes large, in contact on the median line in the adult *C. dilepis.*
- II. A gular crest, no ventral crest; no occipital lobes; granules of body intermixed with enlarged tubercles.
- A. Gular crest formed of conical or compressed pointed tubercles, not covered with scales or granules.
- Tubercles of gular crest conical; scales on tail nearly uniform granules *C. melanocephalus.*
 Tubercles of gular crest long, thin, compressed *C. gutturalis.*
- B. The anterior tubercles or lobes of the gular crest covered with granular scales.
1. Tail not longer than head and body, often shorter.
- Gular crest formed of small, subconical lobules; tail shorter than head and body *C. tæniobronchus.*
 Gular crest formed of compressed lobes, all longer than broad and not overlapping; tail as long as or a little shorter than head and body *C. pumilus.*
 Gular crest formed of compressed lobes, the anterior very large and overlapping or disposed in an alternating series; tail considerably shorter than head and body *C. ventralis.*
2. Tail considerably longer than head and body in the males; anterior lobes of gular crest at least as broad as long.
- Dorsal crest a serrated ridge *C. damaranus.*
 Dorsal crest formed of 14 or 15 very large conical tubercles *C. caffer.*
- III. Neither gular nor ventral crest; body uniformly granulate; a series of isolated, knob-like, very large tubercles along the spine *C. namaquensis.*

1. CHAMÆLEON QUILENSIS.
Chamæleon dilepis, var. *quilensis*, Bocage, Journ. Sc. Lisb. i, 1866,
 p. 59.
Chamæleon parvilobus, Bouleng., *t.c.*, p. 449.
 Tropical and South Africa.
 Cape Colony: Kimberley (Kilgour).
 Natal: Durban (Butler).
 Transvaal: Barberton (Rendall); Pietersburg (Daneel).
 Portuguese East Africa: Delagoa Bay (De Coster).
 German South-West Africa: Damaraland (Marloth).
2. CHAMÆLEON DILEPIS, Leach, in Bowdich, Ashantee, p. 493;
 Bouleng., *t.c.*, p. 450.
 Tropical Africa, Southern Rhodesia, Portuguese East Africa.
 Southern Rhodesia: Mazoe (ff. Darling); Salisbury (ff. Darling);
 Importuni District (Pillans).
3. CHAMÆLEON MELANOCEPHALUS, Gray, P.Z.S., 1864, p. 474, fig.;
 Bouleng., *t.c.*, p. 457.
 Cape Colony, Natal.
4. CHAMÆLEON GUTTURALIS, Smith, Ill., Rept., App. p. 3.
 "South Africa."
 Only known from Smith's description.
5. CHAMÆLEON TENIOBRONCHUS, Smith, S. Afr. Quart. Journ. No. 5,
 1831, p. 17; Bouleng., *t.c.*, p. 458, pl. xl. fig. 1.
 Cape Colony, Natal, Transvaal, Portuguese East Africa.
 Cape Colony: Calvinia (Leipoldt); O'okiep, Little Namaqualand
 (Warden).
6. CHAMÆLEON PUMILUS, Daud. Hist. Rept. v. p. 212; Bouleng.,
t.c., p. 458.
 Cape Colony, Natal, Transvaal.
 Cape Colony: Cape Division (Oakley, Fairbridge, Hugo); Clan-
 william (Lightfoot); Robertson (Hodges, Melle); Port Eliza-
 beth (Moorhouse); Beaufort West (Purcell).
 Transvaal: Barberton (Rendall).
7. CHAMÆLEON VENTRALIS, Gray, Cat. Liz. p. 268; Bouleng., *t.c.*,
 p. 459, pl. xl. fig. 2.
 Cape Colony: Cape Town (Butler); Albany Division (French)
 King Williamstown (Selater); Robertson (Melle); Port Eliza-
 beth (Moorhouse); Somerset East (Broom); Little Namaqua-
 land (Scully, Péringuey, Trimen).

8. CHAMÆLEON DAMARANUS, Bouleng., *t.c.*, p. 460, pl. xl. fig. 3.
Cape Colony, Transvaal, Damaraland.
9. CHAMÆLEON CAFFER, Boettg. Ber. Senck. Ges., 1889, p. 292.
Eastern parts of Cape Colony.
Port St. Johns (Shortridge).
10. CHAMÆLEON NAMAQUENSIS, Smith, S. Afr. Quart. Journ. No. 5,
1831, p. 17; Bouleng., *t.c.*, p. 462.
Northern parts of Cape Colony, German South-West Africa,
Angola.
Cape Colony: Worcester (Lycett); Beaufort West (Lycett);
Sutherland Division (Rogers); Little Namaqualand (Périn-
guey, Scully, Schlechter).
German South-West Africa: Damaraland (Marloth).

2. RHAMPHOLEON.

Günth., P.Z.S., 1874, p. 443; Bouleng., Cat. Liz. iii. p. 475.

1. RHAMPHOLEON MARSHALLI, Bouleng. Ann. & Mag. N. II. (7)
xviii., 1906, p. 346, fig.
Chirinda Forest, South-East Mashonaland.

DESCRIPTIONS OF NEW SPECIES.

PHYLLODACTYLUS PERINGUEYI.

Head flat above, once and a half as long as broad; snout obtusely pointed, a little longer than the distance between the eye and the ear-opening, and nearly twice as long as the orbit; ear-opening small, rounded. Body rather elongate, limbs short; digital expansions rounded, moderately large; subdigital lamellæ well developed. Granular scales on snout keeled; nostril pierced between the rostral and four small scales; rostral twice as broad as deep; 6 or 7 upper and as many lower labials; no chin-shields, only larger flat granules behind the symphyisial shield. Back covered with coarse granules intermixed with numerous oval, keeled tubercles; belly covered with flat, subimbricate smooth scales. Pale brownish above, with two more or less distinct dark brown longitudinal bands on each side, the outer passing through the eye; whitish beneath.

Total length, 45 mm. (tail regenerated); from snout to vent, 25; length of head, 7; fore limb, 7; hind limb, 7.

Two specimens: A male from Little Namaqualand (coll. Périn-guey) and a female from Port Elizabeth (coll. Moorhouse).

A very distinct species, without special affinity to any of those previously known.

PACHYDACTYLUS PURCELLI.

Head much depressed; snout a little longer than the orbit; ear-opening oval, oblique. Digits short, feebly dilated distally, the dilated part with 5 or 6 lamellæ. Head and body covered with uniform flat granules, largest on the snout; ventral scales flat, sub-imbricate, larger than dorsals. Rostral nearly twice as broad as deep, entering the nostril; 8 to 10 upper labials; as many lower labials, the anterior as large as or a little larger than the sym-physial, which is twice as long as broad. Pale brownish above, with darker marblings or vermicular spots, which may form more or less regular cross-bands.

Total length, 85 mm.; from snout to vent, 40; head, 11; fore limb, 13; hind limb, 16.

Several specimens from Touw's River (coll. Purcell) and from Little Namaqualand (coll. Schlechter).

The very flat head and the position of the nostril well distinguish this species from all its congeners.

ZONURUS MACROPHOLIS.

Head-shields very rugose; nasals not swollen, in contact, the nostril in its posterior part, close to the first upper labial and the anterior loreal; frontonasal tetragonal; præfrontals forming a suture; interparietal tetragonal, between the two pairs of parietals and touching the frontoparietals; temporals strongly keeled, the posterior forming short spines; lower eyelid scaly; four or five upper labials; five lower labials, bordered by four large, striated, and keeled shields; gular scales large, imbricate, strongly keeled, sharply pointed. Dorsal scales very large, forming regular transverse series, rugose, strongly keeled, denticulate posteriorly, the keels terminating in a short spine, on the flanks similar; 17 transverse series from occiput to base of tail, the largest containing 14 scales; a distinct lateral fold. Ventral scales smooth, quadrangular, the outer pointed behind, in 10 longitudinal and about 20 transverse series. A pair of enlarged posterior præanal scales. Limbs with large spinose, serrated scales. 9 femoral pores on each side. Tail with whorls of large, rugose, strongly keeled, spinose, serrated

scales, the spines strongest on the sides. Olive-brown above, with large irregular dark brown blotches, pale olive beneath.

Total length, 130 mm.; from snout to vent, 68; head, 19; fore limb, 25; hind limb, 32.

A single specimen from Little Namaqualand.

ZONURUS TROPIDOGASTER.

Similar to *Z. cordylus*, but no frontonasal, the sutures between the nasal and præfrontals, which are of equal size, forming a cross, and ventral scales feebly keeled. Dorsal scales in 24 longitudinal and 25 transverse series, ventrals in 14 longitudinal and 27 transverse series. 8 femoral pores on each side. Olive-brown above, with irregular darker blotches and a light vertebral stripe, whitish beneath.

From snout to vent, 48 mm.

A single specimen from Barberton, Transvaal, is preserved in the British Museum.

MONOPELTIS DECOSTERI.

A single large shield covering the top of the head; snout rounded, seen from above; rostral quadrangular, separating the nasals; ocular very minute, eye not distinct; three upper labials, third very large; symphysial small, followed by a large chin-shield with a pair of smaller ones behind it; three lower labials, third very large. Tail rounded at the end. 193 annuli on the body and 11 on the tail; an annulus in the middle of the body includes 34 segments, 20 dorsal and 14 ventral; the two median ventral segments a little more than twice as broad as long. Pectoral shields four, large, elongate, subequal, as long as the head. A pair of very large anal segments. A præanal pore on each side. Uniform yellowish white in spirit.

Total length, 215 mm.; tail, 10; diameter of body, 6.

A single specimen from Delagoa Bay (coll. De Coster).

MONOPELTIS COLOBURA.

A single large shield covering the top of the head; snout rounded, seen from above; rostral subtriangular, the nasals in contact with each other above it; ocular very small, eye distinguishable; three upper labials, third very large, second longest; symphysial larger than the adjacent lower labials, followed by a large chin-shield with

a pair of smaller ones behind it; three lower labials, third very large. Tail thickened and abruptly truncate at the end. 290 to 320 annuli on the body and 25 to 28 on the tail; an annulus in the middle of the body includes 28 to 32 segments, 18 or 20 dorsal and 10 or 12 ventral; the two median ventral segments much broader than long; the transverse series of segments on the upper surface of the tail more or less angular, the angles directed backwards. Pectoral shields six, large, elongate, median pair broadest and longest, longer than the head, of equal width in its posterior half. Six anal segments. No præanal pores. Uniform yellowish white in spirit.

Total length, 520 mm.; tail, 43; diameter of body, 8; diameter of tail at base, 5; diameter of tail at end, 8.

Three specimens from Sesheke, Barotseland (coll. Rev. L. Jalla).

PART II.—OPHIDIA.

Synopsis of the Families represented in South Africa.

I. Worm-like, with the eyes under the more or less transparent head-shields; mouth very small, either the upper or the lower toothless; body covered with uniform scales.

Lower jaw toothless; ocular shield not bordering the mouth; at least 20 scales round the body *Typhlopidae.*

Upper jaw toothless; ocular shield bordering the mouth; 14 scales round the body.. . . . *Glauconiidae.*

II. Eyes exposed; both jaws toothed; enlarged ventral shields usually present.

A. Maxillary bone horizontal, not vertically movable; poison-fangs, if present, small or rather small.

Præmaxillary bone toothed; rudiments of hind limbs, usually appearing externally as a claw-like horny spine on each side of the vent; labial shields with pits.. . . . *Boidae.*

No præmaxillary tooth; no rudiments of hind limbs; labial shields without pits *Colubridae.*

B. Maxillary bone very short, vertically movable, bearing only the poison-fangs, which are usually very large *Viperidae.*

FAMILY TYPHLOPIDÆ.

A single Genus in South Africa.

1. TYPHLOPS.

Schneid. Hist. Amph. ii. p. 339 : Bouleng. Cat. Sn. i. p. 7.

Ten Species in South Africa.

I. Snout rounded; 22 or 24 scales round the body.

Præocular much narrower than the ocular, in contact with the second and third labials; diameter of body 42 to 45 times in total length *T. verticalis.*

Præocular a little narrower than the ocular, in contact with the second labial only; diameter of body 23 to 30 times in total length *T. fornasinii.*

II. Snout with obtusely angular, not trenchant, horizontal edge. 24 scales round the body; præocular in contact with the second and third labials; diameter of body 30 times in total length .. *T. mossambicus.*

30 or 32 scales round the body; præocular in contact with the second labial only; diameter of body 24 times in total length; eye not distinguishable *T. anchieta.*

30 to 34 scales round the body; præocular in contact with the second labial (rarely second and third); diameter of body 28 to 36 times in total length; eye distinct *T. bibronii.*

III. Snout with sharp, trenchant, horizontal edge.

A. Snout not hooked (in profile).

28 to 30 scales round body; diameter of body 35 to 50 times in total length *T. delalandii.*

30 to 38 scales round body; diameter of body 25 to 35 times in total length *T. mucroso.*

34 to 40 scales round body; diameter of body 42 to 46 times in total length *T. dinga.*

40 to 44 scales round body; diameter of body 25 to 30 times in total length *T. schlegelii.*

B. Snout hooked; 24 or 26 scales round body; diameter of body 45 to 57 times in total length *T. schinzi.*

1. TYPHLOPS VERTICALIS.

Onychocephalus verticalis, Smith, Ill., Rept. pl. liv.

Typhlops verticalis, Bouleng., t.c., p. 32.

Interior of South Africa.

Malmesbury (H. Gird).

2. TYPHLOPS FORNASINII, Bianconi, Spec. Zool. Mosamb. p. 13, pl. iii.

fig. 1; Bouleng., t.c., p. 38.

Portuguese East Africa.

Delagoa Bay (De Coster).

3. *TYPHLOPS MOSSAMBICUS.*

Onychocephalus mossambicus, Peters, Mon. Berl. Ac., 1854, p. 621.

Typhlops mossambicus, Bouleng., *t.c.*, p. 41.

Portuguese East Africa, Zululand.

4. *TYPHLOPS ANCHIETÆ*, Bocage, Journ. Sc. Lisb. xi. 1886, p. 172 ;

Bouleng., *t.c.*, p. 40.

Angola, Transvaal.

5. *TYPHLOPS BIBRONII.*

Onychocephalus bibronii, Smith, Ill., Rept. pl. li. fig. 2, and liv. figs. 5-8.

Typhlops bibronii, Bouleng., *t.c.*, p. 44.

Cape Colony, Basutoland, Natal.

Cape Colony: Malmesbury (Gird); Bathurst District (Becker);

Port St. Johns (Shortridge); Matatiele, East Griqualand

(Tyrrel); Little Namaqualand (Péringuey).

Basutoland: Morija (Dyke).

Transvaal: Lydenburg (Kilgour).

6. *TYPHLOPS DELALANDII*, Schleg. Abbild. p. 38, pl. xxxii. figs. 17-20 ;

Bouleng., *t.c.*, p. 45.

Cape Colony, Natal, Orange River Colony, Transvaal, Southern Rhodesia.

Cape Colony: Cape Peninsula (Fairbridge, de Souza, Purcell);

Malmesbury (Gird); Burghersdorp (Kannemeyer); Tulbagh

(Kleinschmidt); Prince Albert (Purcell); Knysna (Maritz);

Port Elizabeth (Weale, Drege); Middelburg (Piers); Calvinia

(Leipoldt); Caledon (Burger); Worcester (Purcell, Paynter);

Stellenbosch (Lightfoot); Robertson (Melle); Hanover

(Schreiner); Graaff-Reinet (Paynter); Touw's River, Worcester

District (Purcell); Little Namaqualand (Péringuey).

Orange River Colony: Smithfield (Kannemeyer).

7. *TYPHLOPS MUCRUSO.*

Onychocephalus mucruso, Peters, Mon. Berl. Ac., 1854, p. 621.

Typhlops mucruso, Bouleng., *t.c.*, p. 46.

Tropical Africa to Portuguese East Africa, Southern Rhodesia, and Transvaal.

Transvaal: Barberton (Rendall).

Southern Rhodesia: Salisbury (Darling, Marshall).

Portuguese East Africa: Delagoa Bay (De Coster).

8. *TYPHLOPS DINGA.*

Onychocephalus dinga, Peters, Mon. Berl. Ac., 1854, p. 620.

Typhlops dinga, Bouleng., *t.c.*, p. 45.

Portuguese East Africa, Southern Rhodesia.

9. TYPHLOPS SCHLEGELII, Bianconi, Spec. Zool. Mosamb. p. 13, pl. iii. fig. 2; Bouleng., *t.c.*, p. 44.

East and Central Africa to Portuguese East Africa and Southern Rhodesia.

Delagoa Bay (De Coster).

10. TYPHLOPS SCHINZI, Boettger, Ber. Senck. Ges., 1887, p. 154, pl. v. fig. 1; Bouleng., *t.c.*, p. 47.

Northern parts of Cape Colony.

Little Namaqualand (Turle); Carnarvon (Hanau).

FAMILY GLAUCONIIDÆ.

A single Genus in South Africa.

1. GLAUCONIA.

Gray, Cat. Liz. p. 139; Bouleng. Cat. Sn. i. p. 59.

Six Species in South Africa.

I. Supraocular present.

A. Rostral separated from the supraocular by the upper part of the nasal; diameter of body 40 to 60 times in total length *G. nigricans.*

B. Rostral in contact with the supraocular.

a. Rostral not more than twice the width of the nasal, extending to or slightly beyond a line connecting the posterior borders of the eyes.

Diameter of body 47 to 70 times in total length *G. conjuncta.*

Diameter of body 90 to 110 times in total length *G. gracilior.*

b. Rostral very large, at least twice as broad as the nasal and extending beyond a line connecting the posterior border of the eyes; diameter of body 50 to 80 times in total length.

Snout rounded *G. scutifrons.*

Snout with the præoral part concave, appearing slightly hooked in profile *G. distanti.*

II. No supraocular *G. labialis.*

1. GLAUCONIA NIGRICANS.

Typhlops nigricans, Schleg. Abbild. p. 38, pl. xxxii. figs. 21-24.

Glauconia nigricans, Bouleng., *t.c.*, p. 67.

South Africa.

Cape Colony: Kentani (Kolbe); Swellendam (Fry); Engcobo (Weisbecker); Port Elizabeth (Weale, Drege).

2. *GLAUCONIA CONJUNCTA*.

Stenostoma conjunctum, Jan, Arch. Zool. Anat. Phys. i., 1861,
p. 189.

Glauconia conjuncta, Bouleng., *t.c.*, p. 67.

South and East Africa.

Cape Colony: Swellendam (Fry); Engcobo (Weisbecker);
Aliwal North (Weisbecker); Burghersdorp (Kannemeyer).

Basutoland: Korokoro (Sclater).

Natal: Umvoti (Fry).

Transvaal: Lydenburg (Fry); Modderfontein (Purcell).

3. *GLAUCONIA GRACILIOR*, sp. n.

Cape Colony.

Van Rynsdorp (A. W. Rogers); Matjiesfontein (Purcell); Clan-
william (Leipoldt).

4. *GLAUCONIA SCUTIFRONS*.

Stenostoma scutifrons, Peters, Mon. Berl. Ac., 1854, p. 621.

Glauconia scutifrons, Bouleng., *t.c.*, p. 68.

Glauconia latifrons, Sternfeld, Sitzb. Ges. Nat. Fr. Berl., 1908, p. 94.

South Africa, Angola.

Cape Colony: Burghersdorp (Kannemeyer).

Natal: Umvoti (Fry).

Transvaal: Pietersburg (Daneel).

Southern Rhodesia: Bulawayo (Kolbe); Matoppo Hills (Pillans);
Salisbury (Marshall).

5. *GLAUCONIA DISTANTI*, Bouleng. in Distant, Nat. Transv. p. 175,
fig., and *t.c.*, p. 62.

Transvaal, Southern Rhodesia, British Central Africa.

Transvaal: Pretoria (Gough); Pietersburg (Daneel).

Southern Rhodesia: Palapye, Bechuanaland (Fry).

6. *GLAUCONIA LABIALIS*, Sternfeld, *t.c.*, p. 92.

German South-West Africa.

FAMILY **BOIDÆ**.

A single Genus in South Africa.

1. **PYTHON**.

Daud. Hist. Rept. v. p. 266; Bouleng. Cat. Sn. i. p. 85.

1. **PYTHON SEBÆ**.

Coluber sebæ, Gmel. S. N. i. p. 1118.

Python sebæ, Bouleng., *t.c.*, p. 86.

Natal, Zululand, Transvaal, Southern Rhodesia, Portuguese East Africa, Tropical Africa.

Natal: Durban (Bowker).

Southern Rhodesia: Salisbury (Thomas).

FAMILY COLUBRIDÆ.

Synopsis of the South African Genera.

I. *Aglyphæ*, without grooved fangs in the upper jaw.—Harmless.

A. Scales smooth, in 19 rows or more.

1. Pupil round; posterior maxillary teeth longest.

Scales in 19 rows; internasal not entering the nostril; snout rounded *Tropidonotus*.

Scales in 27 to 31 rows; internasal entering the nostril; snout with vertical sides, more or less prominent *Pseudaspis*.

2. Pupil vertically elliptic or subelliptic; anal entire.

Scales in 19 rows; frontal at least once and a half as long as broad; maxillary teeth equal *Ablabophis*.

Scales in 19 to 23 rows; frontal broad and short; posterior maxillary teeth shortest *Lamprophis*.

Scales in 23 to 33 rows, with apical pits; anterior maxillary teeth strongly enlarged *Boodon*.

B. Scales smooth, in 15 or 17 rows.

1. Tail short (subcaudals not more than 50 pairs).

Pupil vertically elliptic; rostral small; anterior maxillary teeth longest *Lycophidium*.

Pupil vertically elliptic; rostral very large, with angular horizontal edge; posterior maxillary teeth strongly enlarged . . . *Prosymna*.

Pupil round; rostral small; nasal single; anterior maxillary teeth longest *Homalosoma*.

2. Tail long (subcaudals more than 80 pairs); pupil round; posterior maxillary teeth longest.

Subcaudals not keeled *Chlorophis*.

Subcaudals keeled and notched *Philothamnus*.

C. Scales keeled; pupil vertically elliptic.

Scales in 15 or 17 rows, of vertebral row enlarged and bicarinate; anterior maxillary teeth longest *Simocephalus*.

Scales in 23 to 27 rows, laterals very oblique and with serrated keels; teeth very small and few *Dasyplectis*.

II. *Opisthaglyphæ*, with grooved fangs at the posterior end of the upper jaw.—More or less poisonous.

A. Eye moderate or large; head more or less distinct from neck.

1. Subcaudals single; pupil vertically elliptic; parietals broken up into small shields *Pythonodipsas*.

2. Subcaudals in pairs.

a. Pupil vertically elliptic; scales in 17 or 19 rows.

Anal divided; loreal separated from the eye by the præocular; maxillary teeth decreasing in size posteriorly *Tarbophis*.

- Anal entire; loreal separated from the eye by the præocular;
maxillary teeth increasing in size posteriorly *Leptodira*.
- Anal entire; loreal entering the eye *Chamaetortus*.
- b. Pupil round.
- a. Scales smooth (or feebly keeled on the posterior part of the back) in 13 to 17 rows.
- Rostral moderate; nostril in a single, semidivided nasal . . . *Amplorhinus*.
- Rostral moderate; nostril between two nasals and the internasal;
maxillary teeth subequal *Trimerorhinus*.
- Rostral large, projecting, snout pointed *Rhamphiophis*.
- Rostral moderate; nostril between the nasals; one or two middle
maxillary teeth much enlarged *Psammodon*.
- β. Scales keeled, in 19 or 21 rows; eye very large
Dispholidus.
- c. Pupil horizontal; eye large; scales in 19 rows;
body very slender *Thelotornis*.
- B. Eye small or very small; head not distinct from neck.
1. Subcaudals in pairs; no præocular.
- Scales in 15 rows; no internasals *Amblyodipsas*.
- Scales in 17 or 19 rows; internasals present *Camelaps*.
2. Subcaudals single.
- Scales in 23 to 27 rows; no præocular *Macrelaps*.
- Scales in 15 rows; nasal in contact with a præocular *Aparallactus*.
- III. *Proteroglyphæ*, with grooved fangs at the anterior end of the upper jaw.—Poisonous.
- A. Tail compressed, oar-shaped; head narrow and elongate; no distinctly enlarged ventrals (Sea-snakes) . . . *Hydrus*.
- B. Tail cylindrical, ending in a point.
1. Head short.
- a. Scales in 17 rows or more; internasal bordering the nostril.
- Rostral moderate; scales smooth *Naiia*.
- Rostral moderate; scales strongly keeled *Sepedon*.
- Rostral very large, detached on the sides; scales smooth or keeled on posterior part of body *Aspidelaps*.
- b. Scales in 13 or 15 rows.
- Nostril between two nasals; scales in 13 rows; eye small . . . *Elapechis*.
- Nostril in a single nasal; scales in 15 rows; eye very small . . *Homorelaps*.
2. Head narrow, elongate; scales very oblique, in 19 to 25 rows; body slender *Dendraspis*.

A.—AGLYPHÆ.

1. TROPIDONOTUS.

Kuhl, Bull. Sc. Nat. ii., 1824, p. 81; Bouleng. Cat. Sn. i. p. 192.

Two Species in South Africa.

- Ventrals 162-180; anal entire *T. levissimus*.
- Ventrals 131-149; anal divided *T. olivaceus*.

1. TROPIDONOTUS LEVISSIMUS.

Natrix lævissima, Günth. Ann. & Mag. N. H. (3) ix., 1862,
p. 124, pl. ix. fig. 4.

Tropidonotus lævissimus, Bouleng., t.c., p. 226.

Grayia lubrica, W. Sclater, Ann. S. Afr. Mus. i., 1898, p. 109,
pl. V, fig. 1.

Cape Colony, Natal.

Tsomo, Transkei District.—Type of *Grayia lubrica*.

2. TROPIDONOTUS OLIVACEUS.

Coronella olivacea, Peters, Mon. Berl. Ac., 1854, p. 622.

Tropidonotus olivaceus, Bouleng., t.c., p. 227.

Tropical Africa to Southern Rhodesia.

Mashonaland : Salisbury (Marshall).

2. ABLABOPHIS.

Bouleng. Cat. Sn. i. p. 318.

1. ABLABOPHIS RUFULUS.

Coronella rufula, Lichtenst. Verz. Doubl. Mus. Berl. p. 105.

Ablabophis rufulus, Bouleng., t.c.

South Africa.

Cape Colony : Cape Town (de Souza, Oakley); Robben Island
(Fisk); Stellenbosch (Péringuey); Knysna (Groom); Port St.
Johns (Shortridge); Touw's River, Worcester (Le Fèvre);
Prince Albert (Purcell); Burghersdorp (Kannemeyer); Clan-
william (Leipoldt); George (Leipoldt); Port Elizabeth (Drege,
Moorhouse); Albany District (French).

Natal : Durban (Bowker, Sanderson).

Transvaal : Modderfontein (Haagner).

German South-West Africa : Damaraland (Palgrave).

3. LAMPROPHIS.

Smith, Ill., Rept.; Bouleng. Cat. Sn. i. p. 320.

Four Species.

I. Scales in 23 rows.

Internasals a little shorter than the præfrontals; loreal a little
longer than deep *L. aurora.*

Internasals much shorter than the præfrontals; loreal at least
nearly twice as long as deep *L. inornatus.*

Internasals longer than the præfrontals; loreal as long as deep or a
little longer than deep *L. fiskii.*

II. Scales in 19 rows *L. fuscus.*

1. LAMPROPHIS AURORA.
Coluber aurora, Linn. S. N. i. p. 379.
Lamprophis aurora, Bouleng., *t.c.*, p. 321.
 Cape Colony, Orange River Colony, Transvaal.
 Cape Colony: Cape Town (Stevens, Gardiner, E. A. Morris)
 Burghersdorp (Kannemeyer).
 Orange River Colony: Smithfield (Kannemeyer).
 Transvaal: Modderfontein (Haagner).
2. LAMPROPHIS INORNATUS, Dum. & Bibr. Erp. Gén. vii. p. 464.
 Cape Colony.
 Cape Town (French). Also 2655.
3. LAMPROPHIS FISKII, Bouleng. P.Z.S., 1887, p. 398, pl. xxxiv., and
t.c., p. 322.
 Cape Colony.
 Worcester (Le Fèvre).
4. LAMPROPHIS FUSCUS, Bouleng. Cat. Sn. i. p. 322, pl. xx., fig. 4.
 Cape of Good Hope.

4. BOODON.

Dum. & Bibr. Mém. Ac. Sc. xxiii., 1853, p. 460; Bouleng. Cat.
 Sn. i. p. 327.

Four Species in South Africa.

- I. Scales in 23 or 25 rows; three labials entering the eye.
 Two postoculars; præocular not extending to upper surface of
 head; ventrals 175-196. *B. infernalis.*
 Three postoculars; præocular extending to upper surface of head;
 ventrals 196-210 *B. guttatus.*
- II. Scales in 27 to 33 rows; ventrals 192-237.
 Two (rarely three) labials entering the eye; two pairs of chin-
 shields in contact with each other *B. lineatus.*
 Three labials entering the eye; only one pair of chin-shields
 meeting on the median line *B. mentalis.*

1. BOODON INFERNALIS, Günth. Cat. Col. Sn. p. 199; Bouleng., *t.c.*,
 p. 330, pl. xxi. fig. 1.
 East and South Africa.
 Cape Colony: Cape Town (Southey, Oakley); Cape Division
 (Layard, Southey, Oakley, Selater); Robben Island (Denysson,
 Péringuey); Knysna (Groom); Port St. Johns (Shortridge);
 Kimberley (French); King William's Town (Godfrey).

2. BOODON GUTTATUS.

Lycodon guttatus, Smith, Ill., Rept. pl. xxiii.

Boodon guttatus, Bouleng., t.c., p. 331.

Cape Colony.

Cape Town (Layard); O'okiep (Howard); Burghersdorp (Kannemeyer).

3. BOODON LINEATUS, Dum. & Bibr. Erp. Gén. vii. p. 363; Bouleng., t.c., p. 332.

Tropical and South Africa.

Cape Colony: Cape Division (no history); Burghersdorp (Kannemeyer); Port St. John's (Shortridge); Knysna (Groom); Touw's River, Worcester Division (Le Fèvre, Purcell); Beaconsfield (Paynter); Robertson (Melle); Hanover (Schreiner); Beaufort West (Haagner); Ograbis, Little Namaqualand (Strauss).

Natal: Durban (Bowker, Sanderson).

Transvaal: Modderfontein (Haagner); Potchefstroom (Gilchrist).

Rhodesia: Mazoe (Darling); Salisbury (Darling, Marshall, Thomas); Livingstone (Sykes).

Portuguese East Africa: Delagoa Bay (De Coster).

4. BOODON MENTALIS, Günth. Ann. & Mag. N. H. (6) i., 1888, p. 331, pl. xx. fig. A; Bouleng., t.c., p. 335.

Damaraland.

5. LYCOPHIDIUM.

Dum. & Bibr. Mém. Ac. Sc. xxiii., 1853, p. 462; Bouleng. Cat.

Sn. i. p. 336.

Two Species in South Africa.

Ventrals 164-208 *L. capense*.

Ventrals 146-156 *L. semiannullis*.

1. LYCOPHIDIUM CAPENSE.

Lycodon capensis, Smith, S. Afr. Quart. Journ. No. 5, 1831, p. 18.

Lycophidium capense, Bouleng., t.c., p. 339.

Tropical and South Africa.

Cape Colony: Grahamstown (Schönland); Port Elizabeth (Moorhouse); Burghersdorp (Kannemeyer).

Natal: Durban (Bowker).

Transvaal: Johannesburg (Elleman).

Southern Rhodesia: Mazoe (Darling); Salisbury (Marshall, Thomas).

2. *LYCOPHIDIUM SEMIANNULIS*, Peters, Mon. Berl. Ac., 1854, p. 622;
 Bouleng., *t.c.*, p. 339.
 Portuguese East Africa, Zululand.

6. SIMOCEPHALUS.

Günth. Cat. Col. Sn. p. 194; Bouleng. Cat. Sn. i. p. 344.

Two Species in South Africa.

Frontal a little shorter than the parietals; two postoculars; ventrals
 203-241 *S. capensis*.
 Frontal much shorter than the parietals; a single postocular; ven-
 trals 171-185. *S. nyassa*.

1. SIMOCEPHALUS CAPENSIS.

Heterolepis capensis, Smith, Ill., Rept. pl. lv.

Simocephalus capensis, Bouleng., *t.c.*, p. 345.

Central Africa, Portuguese East Africa, Southern Rhodesia,
 Natal.

Natal: Durban (Bowker); Southern Rhodesia: Salisbury (Mar-
 shall).

2. SIMOCEPHALUS NYASSÆ, Günth. Ann. & Mag. N. H. (6) i., 1888, p. 328; Bouleng., *t.c.*, p. 347, pl. xxiii. fig. 2.

East and Central Africa, Portuguese East Africa, Natal, Trans-
 vaal.

Natal: Durban (Bowker).

Portuguese East Africa: Delagoa Bay (Péringuey).

7. PSEUDASPIS.

Cope, Proc. Ac. Philad., 1864, p. 168; Bouleng. Cat. Sn. i. p. 373.

1. PSEUDASPIS CANA.

Coluber cana, Linn. S. N. i. p. 382.

Pseudaspis cana, Bouleng., *l.c.*

South Africa to Angola and British East Africa.

Cape Colony: Cape Division (Smith, Bishop, Layard, Southey,
 Oakley, Kolbe); Tzitzikamma River (Harrison); Beaufort
 West (Jackson); Graaff-Reinet (Kannemeyer); Burghersdorp
 (Kannemeyer); Middelburg (Piers); Tsomo, Transkei (Water-
 meyer); Port Elizabeth (Drege, Moorhouse); Port Nolloth
 (Howard); Hanover (Schreiner); Worcester (Paynter); Little
 Namaqualand (Péringuey, Christensen, Scully).

Natal (Sanderson).

Orange River Colony : Smithfield (Kannemeyer).

Transvaal : Johannesburg (Ross) ; Modderfontein (Haagner).

Southern Rhodesia : Mazoe (Darling) ; Salisbury (Thomas).

8. CHLOROPHIS.

Hallow. Proc. Ac. Philad., 1857, p. 52 ; Bouleng. Cat. Sn. ii. p. 91.

Four Species in South Africa.

I. Ventrals without keels.

Two labials entering the eye ; subcaudals 85-107 *C. hoplogaster*.

II. Ventrals with distinct lateral keels.

Two labials entering the eye ; a single anterior temporal ; subcaudals 77-114 *C. neglectus*.

Two labials entering the eye ; usually two superposed anterior temporals ; subcaudals 114-140 *C. natalensis*.

Three labials entering the eye ; subcaudals 94-133 *C. irregularis*.

1. CHLOROPHIS HOPLOGASTER.

Ahatulla hoplogaster, Günth. Ann. & Mag. N. H. (3) xi., 1863, p. 284.

Chlorophis hoplogaster, Bouleng., *t.c.*, p. 93, pl. v. fig. 2.

South Africa, Central and East Africa.

Cape Colony : Wynberg? (Gardner) ; Port Elizabeth (Cregoe, Moorhouse) ; Port St. Johns (Shortridge) ; Knysna (Baimbridge).

Natal : Durban (Bowker, Sanderson).

Transvaal : Barberton (Rendall).

2. CHLOROPHIS NEGLECTUS.

Philothamnus neglectus, Peters, Mon. Berl. Ac., 1866, p. 890.

Chlorophis neglectus, Bouleng., *t.c.*, p. 94.

East Africa, Southern Rhodesia, British Central Africa.

Southern Rhodesia : Salisbury (Marshall).

3. CHLOROPHIS NATALENSIS.

Dendrophis natalensis, Smith, Ill., Rept. pl. lxiv.

Chlorophis natalensis, Bouleng., *t.c.*, p. 94.

South and Central Africa.

Cape Colony : Mossel Bay (Layard) ; Port St. Johns (Shortridge) ; Port Elizabeth (Moorhouse) ; Kimberley (French) ; Tsomo (Watermeyer).

Natal : Durban (Sanderson).

Transvaal : Lydenburg (Kilgour).

North Western Rhodesia : Kafue River (Drury).

4. CHLOROPHIS IRREGULARIS.

Coluber irregularis, Leach, in Bowdich, Ashantee, p. 494.

Chlorophis irregularis, Bouleng., *t.c.*, p. 96.

Tropical Africa, Southern Rhodesia.

Southern Rhodesia : Mazoe (Darling) ; Salisbury (Marshall, Thomas).

9. PHILOTHAMNUS.

Smith, Ill., Rept. ; Bouleng. Cat. Sn. ii. p. 98.

A single Species in South Africa.

PHILOTHAMNUS SEMIVARIEGATUS, Smith, *op. c.*, pls. lix. and lx. ; Bouleng., *t.c.*, p. 99.

Tropical and South Africa.

Cape Colony : Douglas (Orpen).

Transvaal : Barberton (Rendall).

Rhodesia : Salisbury (Thomas, Darling) ; Livingstone (Stephenson).

Portuguese East Africa : Delagoa Bay (De Coster).

10. PROSYMNA.

Gray, Cat. Sn. p. 80 ; Bouleng. Cat. Sn. ii. p. 246.

Five Species in South Africa.

I. Scales smooth, in 15 rows.

A. Internasal paired ; two superposed anterior temporals .. *P. sundevallii*.

B. Internasal single ; a single anterior temporal.

Width of the frontal not half the width of the head ; ventrals 167 ; subcaudals 50 *P. frontalis*.

Width of the frontal more than half the width of the head ; ventrals 131-153 ; subcaudals 19-34 *P. ambigua*.

Width of the frontal more than half the width of the head ; ventrals 169-185 ; subcaudals 38-49 *P. bergeri*.

II. Scales keeled, in 17 rows ; a single internasal *P. jani*.

1. PROSYMNA SUNDEVALLII.

Temnorhynchus sundevallii, Smith, Ill., Rept., App. p. 17.

Prosymna sundevallii, Bouleng., *t.c.*, p. 247.

Cape Colony, Natal, Orange River Colony, Transvaal.

Cape Colony : Burghersdorp (Kannemeyer) ; Clanwilliam (Slabber) ; Hanover (Schreiner) ; Graaff-Reinet (Paynter) ; Tulbagh (Lightfoot) ; Little Namaqualand.

2. PROSYMNA FRONTALIS.

Temnorhynchus frontalis, Peters, Mon. Berl. Ac., 1867, p. 236, pl. —, fig. 1.

Prosymna frontalis, Bouleng., *t.c.*, p. 248.

German South-West Africa, Angola.

3. PROSYMNA AMBIGUA, Bocage, Journ. Sc. Lisb. iv., 1873, p. 218 ;
Bouleng., *t.c.*, p. 248.

Southern Rhodesia, Zululand, East Africa, Angola.

4. PROSYMNA BERGERI, Lindholm, Jahrb. Nassau. Ver. lv., 1902, p. 57.
German South-West Africa.

5. PROSYMNA JANI, Bianconi, Mem. Acc. Bologna (2) i. 1862, p. 470,
pl. i. ; Bouleng., *t.c.*, p. 249.

Portuguese East Africa, Zululand.

11. HOMALOSOMA.

Wagler, Syst. Amph. p. 190 ; Bouleng. Cat. Sn. ii. p. 273.

Two Species in South Africa.

Ventral 115-144 *H. lutrix*.

Ventrals 97-110 *H. variegatum*.

1. HOMALOSOMA LUTRIX.

Coluber lutrix, Linn. S. N. i. p. 375.

Homalosoma lutrix, Bouleng., *t.c.*, p. 274

Homalosoma shiranum, Bouleng., *t.c.*, p. 276.

South Africa, Central and East Africa.

Cape Colony: Cape Town (Oakley); East London (Wood);
Caledon (Burgess); Port St. Johns (Shortridge); Knysna
(Groom); Burghersdorp (Kannemeyer); Middelburg (Piers);
Paarl (Purcell); Port Elizabeth (Moorhouse); Little Namaqua-
land (Péringuey).

Transvaal: Barberton (Rendall).

2. HOMALOSOMA VARIEGATUM, Peters, Mon. Berl. Ac., 1854, p. 622 ;

Bouleng., *t.c.*, p. 276.

Portuguese East Africa, Zululand.

Delagoa Bay (De Coster).

12. DASYPELTIS.

Wagler, Syst. Amph. p. 178 ; Bouleng. Cat. Sn. ii. p. 353.

A single Species in South Africa.

1. DASYPELTIS SCABRA.

Coluber scaber, Linn. S.N. i. p. 384.

Dasyzeltis scabra, Bouleng., *t.c.*, p. 354.

Tropical and South Africa, Egypt.

Cape Colony: Cape Town (Pillans); Swellendam (Cairncross); Worcester (Le Fèvre); Murraysburg (Tyson); East London (Wood); Port St. Johns (Shortridge); Burghersdorp (Kannemeyer); Clanwilliam (Schlechter); Hanover (Schreiner); Graaff-Reinet (Paynter); Port Elizabeth (Drege); Little Namaqualand (Warden).

Basutoland: Morija (Dyke).

Natal: Durban (Bowker).

Transvaal: Johannesburg (Ross); Modderfontein (Haagner).

Southern Rhodesia: Salisbury (Thomas, Darling).

Portuguese E. Africa: Delagoa Bay (De Coster).

B.—OPISTHOGLYPHÆ.

13. PYTHONODIPSAS.

Günth. Ann. & Mag. N. H. (4) i., 1868, p. 425; Bouleng. Cat. Sn. iii. p. 45.

1. PYTHONODIPSAS CARINATA, Günth., *t.c.*, p. 426; Bouleng., *l.c.*
Zambesi, Damaraland.
Damaraland (Nightingale).

14. TARBOPHIS.

Fleischm. Dalm. nov. Serp. Gen. p. 17; Bouleng. Cat. Sn. iii. p. 47.

A single Species in South Africa.

1. TARBOPHIS SEMIANNULATUS.

Telescopus semiannulatus, Smith, Ill., Rept. pl. lxxii.

Tarbophis semiannulatus, Bouleng., *t.c.*, p. 51.

Basutoland, Transvaal, Rhodesia, Portuguese East Africa, Central and East Africa.

Basutoland: Sesheke (Jalle).

Transvaal: Barberton (Rendall).

Portuguese East Africa: Delagoa Bay (De Coster).

15. LEPTODIRA.

Günth. Cat. Col. Sn. p. 165; Bouleng. Cat. Sn. iii. p. 88

A single Species in South Africa.

1. LEPTODIRA HOTAMBÆIA.

Coronella hotambæia, Laurenti, Syn. Rept. p. 85.

Leptodira hotambæia, Bouleng., *t.c.*, p. 89.

Tropical and South Africa.

Cape Colony : Cape Town (de Souza); Port-Elizabeth (Moorhouse, Drege); Burghersdorp (Kannemeyer); Clanwilliam (Leipoldt); Worcester (Purcell); East London (Wood); Port St. Johns (Shortridge); Hanover (Schreiner); Kimberley (French); Little Namaqualand (Schlechter).

Basutoland : Morija (Dyke).

Natal : Pine Town (Bowker); Malvern (Bowker).

Transvaal : Barberton (Rendall).

Southern Rhodesia : Salisbury (Marshall).

Portuguese East Africa : Delagoa Bay (De Coster).

16. CHAMÆTORTUS.

Günth. P.Z.S., 1864, p. 310; Bouleng. Cat. Sn. iii. p. 98.

1. CHAMÆTORTUS AULICUS.

Günth., *l.c.*, pl. xxvi. fig. 2; Bouleng., *l.c.*

East and Central Africa, Portuguese East Africa, Transvaal, Leysdorp, Transvaal (Norton).

17. AMPLORHINUS.

Smith, Ill., Rept.; Bouleng. Cat. Sn. iii. p. 124.

1. AMPLORHINUS MULTIMACULATUS, Smith, *op. c.*, pl. lvii.; Bouleng., *t.c.*, p. 125.

Cape Peninsula.

Cape Peninsula (de Souza, Selater).

18. TRIMERORHINUS.

Smith, Ill., Rept.; Bouleng. Cat. Sn. iii. p. 138.

Two Species in South Africa.

Eye as long as its distance from the nostril *T. rhombeatus.*

Eye shorter than its distance from the nostril *T. triteniatus.*

1. TRIMERORHINUS RHOMBEATUS.

Coluber rhombeatus, Linn. S. N. i. p. 380.

Trimerorhinus rhombeatus, Bouleng., *l.c.*

Psammophis longementalis, Roux, Zool. Jahrb., Syst. xxv., 1907, p. 736, pl. xxvii.

South Africa, Angola.

Cape Colony: Cape Peninsula (Finlay, Sclater); Tulbagh (Kleinschmidt); Touw's River (Le Fèvre); Knysna (Groom); Burghersdorp (Kannemeyer); Robertson (Melle); Worcester (Paynter); Clanwilliam (Schlechter); Middelburg (Piers); George (Leipoldt); Caledon (Burgess); Uitenhage (O'Neil); Port Elizabeth (Moorhouse); Kimberley (French); Tsomo, Transkei (Watermeyer).

Orange River Colony: Harrismith (Ross).

Transvaal: Lydenburg (Kilgour); Krugersdorp (Watson).

2. *TRIMERORHINUS TRITÆNIATUS*.

Rhagerrhis tritæniata, Günth., Ann. & Mag. N. H. (4) i., 1868, p. 423, pl. xix. fig. H.

Trimerorhinus tritæniatus, Bouleng., t.c., p. 139.

Northern parts of Cape Colony, Transvaal, Tropical Africa.

Cape Colony: Barkly West (Tucker); Kuruman (Moffat).

Southern Rhodesia: Salisbury (Marshall).

19. RHAMPHIOPHIS.

Peters, Mon. Berl. Ac., 1854, p. 624; Bouleng. Cat. Sn. iii. p. 144.

A single Species in South Africa.

1. *RHAMPHIOPHIS MULTIMACULATUS*.

Coronella multimaculata, Smith, Ill., Rept. pl. lxi.

Rhamphiophis multimaculatus, Bouleng., t.c., p. 148.

Northern parts of Cape Colony, Orange River Colony, German South-West Africa.

Cape Colony: Little Namaqualand (Howard); Kenhardt (Schlechter); Hanover (Schreiner); Burghersdorp (Kannemeyer).

Orange River Colony: Smithfield (Kannemeyer).

20. PSAMMOPHIS.

Boie, Isis, 1827, p. 521; Bouleng. Cat. Sn. iii. p. 152.

Ten Species in South Africa.

I. Scales in 17 rows; ventrals 154-198.

A. Anal entire; two præoculars *P. notostictus*.

B. Anal divided (rarely entire).

1. Præocular extensively in contact with the frontal; forehead concave; two labials entering the eye .. *P. furcatus*.

2. Præocular narrowly in contact with or separated from the frontal.

a. Two præoculars; rostral considerably broader than deep.

8 upper labials, 3 entering the eye	.. .. .	<i>P. transvaaliensis.</i>
9 upper labials, 2 entering the eye	.. .. .	<i>P. trigrammus.</i>
9 upper labials, 3 entering the eye	.. .. .	<i>P. bocagii.</i>

b. A single præocular; rostral as deep as broad or slightly broader than deep; two labials entering the eye.

Frontal, in the middle, narrower than the supraocular; subcaudals 90-116.. .. . *P. sibilans.*

Frontal, in the middle, nearly as broad as the supraocular; subcaudals 64-95 *P. brevirostris.*

II. Scales in 15 rows.

Præocular extensively in contact with the frontal; ventrals 165-177 *P. julle.*

Præocular not reaching the frontal; ventrals 136-155 *P. crucifer.*

III. Scales in 13 rows; ventrals 141-155 *P. angolensis.*

1. PSAMMOPHIS NOTOSTICTUS, Peters, Mon. Berl. Ac., 1867, p. 237; Bouleng., *t.c.*, p. 156.

South Africa, Angola, Lower Congo.

Cape Colony: Cape Town (Rosser, Lightfoot); Stellenbosch (Francke); Grahamstown; Middelburg (Piers); Victoria West (Piers); Touw's River (Le Fèvre); Beaufort West (Jackson); Graaff-Reinet (Paynter); Burghersdorp (Kannemeyer); Malmesbury Division (Kisel); Ceres (Purcell); Caledon (Burges); Robertson (Melle); Hanover (Schreiner); Port St. Johns (Shortridge); Little Namaqualand (Schlechter).

Orange River Colony: Smithfield (Kannemeyer).

German South-West Africa: Damaraland (Nightingale).

2. PSAMMOPHIS FURCATUS, Peters, *t.c.*, p. 236, Bouleng., *t.c.*, p. 164.

Cape Colony, Transvaal, Southern Rhodesia, German South-West Africa.

Cape Colony: Cape Town (Fisk), Burghersdorp (Kannemeyer) Little Namaqualand (Péringuey, Schlechter), Ograbies (Strauss).

Psammodphis leightoni, Bouleng. P.Z.S., 1902, i. p. 126, pl. xii., I now regard as not separable from *P. furcatus*, the chief difference being that the dark and light markings on the back of the head are transverse in the former, longitudinal in the latter.

3. PSAMMOPHIS TRANSVAALIENSIS, Gough, Ann. Transv. Mus. i., 1908, p. 31, fig.

Transvaal.

4. PSAMMOPHIS TRIGRAMMUS, Günth. Ann. & Mag. N. H. (3) xv., 1865, p. 95, pl. ii. fig. E.; Bouleng. Cat. Sn. iii. p. 159.

Namaqualand.

5. *PSAMMOPHIS BOCAGII*, Bouleng. Cat. Sn. iii. p. 161, pl. viii.
fig. 1.
Southern Rhodesia, Angola.
Victoria Falls (Sclater).
6. *PSAMMOPHIS SIBILANS*.
Coluber sibilans, Linn. S. N. i. p. 383.
Psammophis sibilans, Bouleng., *l.c.*
Psammophis thomasi, Gough, Ann. Transv. Mus. i., 1908, p. 30,
fig.
Egypt, Tropical Africa, northern parts of South Africa.
Cape Colony: Little Namaqualand (Strauss).
Transvaal: Leysdorp (Norton); Irene (Taylor).
Rhodesia: Salisbury (Thomas); Mazoe (Alston); Kafue River
(Drury).
7. *PSAMMOPHIS BREVIOSTRIS*, Peters, Sitzb. Ges. Naturf. Fr., 1881,
p. 89; Bouleng., *t.c.*, p. 166.
South Africa, Angola.
Cape Colony: Cape Division (F. L. Alcock); Tulbagh (Kleinans).
Natal: Durban (Bowker); Pine Town (McKerr).
8. *PSAMMOPHIS JALLÆ*, Peracca, Boll. Mus. Torin. xi., 1896, No. 255,
fig.
Southern Rhodesia.
Importuni District (Pillans).
9. *PSAMMOPHIS CRUCIFER*.
Coluber crucifer, Daud. Hist. Rept. vii. p. 189.
Psammophis crucifer, Bouleng., *t.c.*, p. 169.
South Africa.
Cape Colony: Cape Peninsula (Fisk, Taylor, Howes, Southey);
Stellenbosch (Purcell); Knysna (Groom); Port Elizabeth
(Moorhouse, Weale); Burghersdorp (Kannemeyer); Beacons-
field (French); Grahamstown (Jupps); Beaufort West (Rice);
Little Namaqualand (Scully, Schlechter).
Transvaal: Krugersdorp (Watson); Johannesburg (Cregoe);
Lydenburg (Kilgour).
Basutoland: Morija (Sclater).
10. *PSAMMOPHIS ANGOLENSIS*.
Amphiophis angolensis, Bocage, Journ. Sc. Lisb. iv., 1872,
p. 82.

Psammophis angolensis, Bouleng., *t.c.*, p. 170.

East and Central Africa, Angola, Orange River Colony.

21. THELOTORNIS.

Smith, Ill., Rept. ; Bouleng. Cat. Sn. iii. p. 184.

1. THELOTORNIS KIRTLANDII.

Leptophis kirtlandii, Hallow. Proc. Ac. Philad., 1844, p. 62.

Thelotornis kirtlandii, Bouleng., *t.c.*, p. 185.

Tropical Africa, Southern Rhodesia, Portuguese East Africa,
Zululand, Natal.

Natal : Durban (Bowker).

Portuguese East Africa : Delagoa Bay (De Coster).

Southern Rhodesia : Irome (Blackbeard) ; Zambesi (Chapman).

22. DISPHOLIDUS.

Duvernoy, Ann. Sc. Nat. xxvi., 1832, p. 150 ; Bouleng. Cat. Sn. iii.
p. 186.

1. DISPHOLIDUS TYPUS.

Bucephalus typus, Smith, Zool. Journ. iv., 1829, p. 441.

Dispholidus typus, Bouleng., *t.c.*, p. 187.

Tropical and South Africa.

Cape Colony : Cape Peninsula (Layard, Howes, Selater) ; Knysna
(Groom) ; Burghersdorp (Kannemeyer) ; Port St. Johns (Short-
ridge) ; Port Elizabeth (Moorhouse).

Natal : Durban (Bowker).

Portuguese East Africa : Delagoa Bay (De Coster).

Southern Rhodesia : Salisbury (Darling) ; Mazoe (Darling) ;
Shangani District (Pillans).

23. AMBLYODIPSAS.

Peters, Mon. Berl. Ac., 1856, p. 592 ; Bouleng. Cat. Sn. iii. p. 244.

1. AMBLYODIPSAS MICROPHTHALMA.

Calamaria microphthalma, Bianconi, Spec. Zool. Mosamb. p. 94,
pl. xii. fig. 1.

Amblyodipsas microphthalma, Bouleng., *l.c.*

Portuguese East Africa, Zululand.

24. CALAMELAPS.

Günth. Ann. & Mag. N. H. (3) xviii., 1866, p. 26; Bouleng. Cat.
Sn. iii. p. 245.

Two Species in South Africa.

Scales in 19 rows; ventrals 161-174 *C. warreni*.
Scales in 17 rows; ventrals 133-134 *C. concolor*

1. CALAMELAPS WARRENI, Bouleng. Ann. Natal Mus. i., 1908,
p. 234, fig.
Zululand, Basutoland.
Sesheke, Basutoland (Jalle).
2. CALAMELAPS CONCOLOR.
Choristodon concolor, Smith, Ill., Rept., App. p. 18.
Calamelaps concolor, Bouleng. Cat. Sn. iii. p. 246.
Calamelaps mironi, Mocquard, Bull. Mus. Paris, 1905, p. 77.
Caffraria, Natal.

25. MACRELAPS.

Bouleng. Cat. Sn. iii. p. 255.

1. MACRELAPS MICROLEPIDOTUS.
Uricchis microlepidotus, Günth. Ann. & Mag. N. H. (3) v., 1860,
p. 168, pl. ix.
Macrelaps microlepidotus, Bouleng., *l.c.*
Natal, Eastern parts of Cape Colony.
Cape Colony: Port St. Johns (Kannemeyer).
Natal: Durban (Bowker).

26. APARALLACTUS.

Smith, Ill., Rept., App. p. 15; Bouleng. Cat. Sn. iii. p. 255.

Two Species in South Africa.

Nasal divided; ventrals 153-180 *A. guentheri*.
Nasal entire; ventrals 138-166 *A. capensis*.

1. APARALLACTUS GUENTHERI, Bouleng. Ann. & Mag. N. H. (6) xvi.,
1895, p. 172, and *t.c.*, p. 259, pl. xi. fig. 2.
East and Central Africa, Angola, Southern Rhodesia.
2. APARALLACTUS CAPENSIS, Smith, *op. c.*, p. 16; Bouleng., *t.c.*,
p. 259.
South and East Africa.
Cape Colony: East London (Londt); Burghersdorp (Kannemeyer).
Transvaal: Leydenburg (Kilgour); Modderfontein (Haagner).

C.—OPISTHOGLYPHÆ.

27. HYDRUS.

Schneid. Hist. Amph. i. p. 233; Bouleng. Cat. Sn. iii. p. 266.

1. HYDRUS PLATURUS.

Anguis platurus, Linn. S. N. i. p. 391.

Hydrus platurus, Bouleng., *t.c.*, p. 267.

Indian Ocean and Tropical Pacific; coast of Cape Colony.

Table Bay and False Bay (Stockdale, Fisk); George; Cape Agulhas (J. van Breda).

28. NAIA.

Laurenti, Syn. Rept. p. 90; Bouleng. Cat Sn. iii. p. 372.

Four Species in South Africa.

I. Suboculars separate the eye from the upper labials.

21 or 23 scales across neck, 19 to 21 across middle of body *N. haie*.

17 scales across neck as well as across body *N. anchietae*.

II. Third or third and fourth upper labials entering the eye.

Sixth upper labial largest and in contact with postoculars; 23 scales

across neck *N. flava*.

Third upper labial deepest, sixth not in contact with postoculars;

23 to 29 scales across neck *N. nigricollis*.

1. NAIA HAIE.

Coluber haie, Linn. S. N. i. p. 387.

Naia haie, Bouleng., *t.c.*, p. 374.

Southern Palestine, North and East Africa, Southern Rhodesia, Zululand, Transvaal.

Portuguese East Africa: Delagoa Bay (De Coster).

Southern Rhodesia: Hunyani River (Thomas, Darling); Salisbury (Darling).

2. NAIA ANCHIETÆ, Bocage, Jorn. Sc. Lisb. vii. 1879, p. 89;

Bouleng., *t.c.*, p. 387.

Angola and German South-West Africa, North-West Rhodesia.

Livingstone, North-West Rhodesia (Sykes).

3. NAIA FLAVA.

Vipera flava, Merrem, Tent. Syst. Amph. p. 154.

Naia flava, Bouleng., *t.c.*, p. 376.

Cape Colony, German South-West Africa.

Cape Town (Fairbridge); Worcester (Le Fèvre); Burghersdorp (Kannemeyer); Douglas (Orpen); Caledon; Riversdale; Knysna; Port Elizabeth (Moorhouse); &c.

4. *NAIA NIGRICOLLIS*, Reinh. Vid. Selsk. Skrift. x. 1843, p. 269, pl. iii. figs. 5-7; Bouleng. *t.c.*, p. 378.

From Senegambia and Upper Egypt to Angola, German South-West Africa, Little Namaqualand, Southern Rhodesia, the Transvaal, and Natal.

Cape Colony: Little Namaqualand (Schlechter).

Natal: Victoria County (Bowker).

Transvaal: Barberton (Rendall); Modderfontein (Haagner).

Southern Rhodesia: Mazoe (Darling).

German South-West Africa: Damaraland (Hutchinson).

29. SEPEDON.

Merrem, Tent. Syst. Amph. 146; Bouleng. Cat. Sn. iii. p. 388.

1. *SEPEDON HÆMACHATES*.

Coluber hæmachata, Lacep. Hist. Serp. ii. p. 121.

Sepedon hæmachates, Bouleng., *t.c.*, p. 389.

Cape Colony, Natal, Orange River Colony, Transvaal, German South-West Africa.

Cape Colony: Cape Peninsula (Bishop, Howes, Turley, Carr); Tulbagh (Kleinschmidt); Tsomo, Transkei (Watermeyer); Beaufort West (Rice); George (Leipoldt).

Basutoland: Morija (Dyke).

Transvaal: Johannesburg (Fry); Krugersdorp (Watson); Modderfontein (Haagner).

30. ASPIDELAPS.

Smith, Ill., Rept., App.; Bouleng. Cat. Sn. iii. p. 390.

Two Species.

Internasals in contact behind the rostral; third and fourth upper labials entering the eye; scales all smooth; ventrals 146-176 .. *A. lubricus*.
Internasals separated by the rostral; fourth upper labial entering the eye; scales on posterior part of body keeled; ventrals 115-135 .. *A. scutatus*.

1. *ASPIDELAPS LUBRICUS*.

Natrix lubrica, Laurenti, Syn. Rept. p. 80.

Aspidelaps lubricus, Bouleng., *l.c.*

Cape Colony, German South-West Africa, Rhodesia.

Cape Colony : Cape Town (Layard); Durbanville (Schabort); Malmesbury (Gird & Lightfoot); Robertson (Hodges); Burghersdorp (Kannemeyer); Clanwilliam (Leipoldt, Smolke, Lightfoot); Middelburg (Piers); Upington; Hanover (Schreiner); Port Nolloth (Howard); Namaqualand (Péringuey).

Zambesi (Chapman).

2. ASPIDELAPS SCUTATUS.

Cyrtophis scutatus, Smith, Ill., Rept., App. p. 22.

Aspidelaps scutatus, Bouleng., t.c., p. 391.

Natal, Portuguese East Africa, Southern Rhodesia.

Portuguese East Africa : Delagoa Bay (De Coster).

31. ELAPECHIS.

Bouleng. Cat. Sn. iii. p. 358.

Three Species in South Africa.

Portion of rostral visible from above not half as long as its distance from the frontal, which shield is a little shorter than the parietals; diameter of eye less than its distance from the nostril in the adult

E. guentheri.

Portion of rostral visible from above at least half as long as its distance from the frontal, which shield is much shorter than the parietals; diameter of eye less than its distance from the nostril in the adult

E. sundevallii.

Portion of nostral visible from above at least half as long as its distance from the frontal, which shield is much shorter than the parietals; diameter of eye equal to its distance from the nostril..

E. decosteri.

1. ELAPECHIS GUENTHERI.

Elapsoidea guentheri, Bocage, Journ. Sc. Lisb. i., 1866, p. 70, pl. i. fig. 3.

Elapechis guentheri, Bouleng., t.c., p. 359.

Tropical Africa, Transvaal.

2. ELAPECHIS SUNDEVALLII.

Elaps sundevalli, Smith, Ill., Rept. pl. lxvi.

Elapechis sundevallii, Bouleng., t.c., p. 360.

Natal.

Estcourt.

3. ELAPECHIS DECOSTERI.

Elapsoidea decosteri, Bouleng., Ann. & Mag. N. H. (6) ii., 1888, p. 141.

Elapechis decosteri, Bouleng., t.c., p. 360.

Portuguese East Africa, Zululand.
Delagoa Bay (De Coster).—Type.

32. HOMORELAPS.

Jan, Rev. et Mag. Zool., 1858, p. 518; Bouleng. Cat. Sn. iii. p. 408.

Two Species.

Ventrals 160-215.. *H. lacteus*.
Ventrals 219-244.. *H. dorsalis*.

1. HOMORELAPS LACTEUS.

Coluber lacteus, Linn. S. N. i. p. 381.

Homorelaps lacteus, Bouleng., *t.c.*, p. 409.

Cape Colony, Natal, Orange River Colony.

Cape Colony: Cape Peninsula (Southey); Worcester (Lycett);
Robertson (Hodges); George (Frere); Piquetburg (Water-
meyer); Caledon (Burgess); Port Elizabeth (Matcham);
Kimberley (French).

Natal (Ellman).

Transvaal: Ermelo (Watermeyer).

2. HOMORELAPS DORSALIS.

Elaps dorsalis, Smith, Ill., Rept., App. p. 21.

Homorelaps dorsalis, Bouleng., *t.c.*, p. 410.

Eastern parts of Cape Colony, Natal, Orange River Colony.

Orange River Colony: Brandfort (Haagner); Smithfield (Kanne-
meyer).

33. DENDRASPIS.

Schleg. Versl. Zool. Gen. Amsterd. 1848; Bouleng., Cat. Sn. iii.
p. 434.

Two Species in South Africa.

Scales in 19 to 23 rows in the middle of the body; 8 upper labials;

upper anterior temporal not longer than the lower.. . . . *D. angusticeps*.

Scales in 25 rows; 9 upper labials; upper anterior temporal twice

as long as the lower *D. mamba*.

1. DENDRASPIS AUGUSTICEPS.

Naja angusticeps, Smith, Ill., Rept. pl. lxx.

Dendraspis angusticeps, Bouleng., *t.c.*, p. 437.

Natal, Zululand, Transvaal, Southern Rhodesia, East and Central
Africa.

Natal: Durban (Butler); Zululand (Jones).

2. DENDRASPIIS MAMBA, Gough, Ann. Transv. Mus. i., 1908, p. 37,
fig.
Transvaal.

FAMILY VIPERIDÆ.

Synopsis of the South African Genera.

Eye moderate, with round pupil; head covered with large symmetrical shields; loreal present	<i>Causus.</i>
Eye moderate or small, with vertical pupil; head covered with scales	<i>Bitis.</i>
Eye minute, with round pupil; head small, covered with large symmetrical shields; loreal absent	<i>Atractaspis.</i>

1. CAUSUS.

Wagler, Syst. Amph. p. 172; Bouleng. Cat. Sn. iii. p. 465.

Two Species in South Africa.

Snout obtuse, more or less prominent; ventrals 120-155	<i>C. rhombeatus.</i>
Snout pointed, prominent, more or less turned up at the end; ventrals 113-125	<i>C. defilippii.</i>

1. CAUSUS RHOMBEATUS.

Sepedon rhombeatus, Lichtenst. Verz. Doubl. Mus. Berl. p. 106.

Causus rhombeatus, Bouleng., *t.c.*, p. 467.

Tropical and South Africa.

Cape Colony: Cape Peninsula (Tinley); Knysna (Oakley);
Burghersdorp (Kannemeyer); Tsomo, Transkei (Watermeyer);
George (Leipoldt); Port St. Johns (Shortridge); Kimberley
(French).

Basutoland: Morija (Dyke).

Natal: Durban (Bowker).

Transvaal: Barberton (Rendall); Krugersdorp (Watson).

Southern Rhodesia: Salisbury (Marshall); Mazoe (Darling).

2. CAUSUS DEFILIPPIL.

Heterodon defilippii, Jan, Arch. Zool. Anat. Phys. ii. 1862,
p. 225.

Causus defilippii, Bouleng., *t.c.*, p. 469.

Natal, Transvaal, Southern Rhodesia, Central and East Africa.

Natal: Pinetown (Bowker).

Transvaal: Barberton (Rendall).

Rhodesia: Salisbury (Thomas); Livingstone (Sykes).

2. BITIS.

Gray, Zool. Miscell. p. 69; Bouleng. Cat. Sn. iii. p. 492.

Six Species in South Africa.

- I. Nostrils directed upwards; scales in 31 to 41 rows *B. arietans*.
 II. Nostrils directed upwards and outwards; scales in 21 to 31 rows.
 A. Supraocular region not raised, without horn-like scales; subcaudals well developed and smooth in both sexes.
 Outer row of scales smooth *B. peringueyi*.
 Outer row of scales keeled *B. atropos*.
 B. Supraocular region raised, without horn-like scales; subcaudals well developed and smooth in both sexes. *B. inornata*.
 C. Supraocular region usually with horn-like scales; subcaudals, in females, small and scale-like, more or less distinctly keeled.
 Several supraorbital horns *B. cornuta*.
 Supraorbital horn, if present, single *B. caudalis*.

1. BITIS ARIETANS.

Vipera arietans, Merrem, Tent. Syst. Amph. p. 152.

Bitis arietans, Bouleng., *t.c.*, p. 493.

Tropical and South Africa, Arabia.

Cape Colony: Cape Peninsula (Oakley); Paarl (Hugo); Port St. Johns (Shortridge); Port Elizabeth (Moorhouse); Little Namaqualand (Péringuey).

Basutoland: Morija (Dyke).

Natal: Victoria County (Bowker).

Southern Rhodesia: Mazoe (Darling); Hunyani River (Thomas); Salisbury (Thomas).

German South-West Africa: Damaraland (Fairbridge).

2. BITIS PERINGUEYI.

Vipera peringueyi, Bouleng. Ann. & Mag. N. H. (2) ii., 1888, p. 141.

Bitis peringueyi, Bouleng., *t.c.*, p. 495.

German South-West Africa, Kalahari, Angola.

Walfisch Bay territory (Nightingale), *type*.

3. BITIS ATROPOS.

Coluber atropos, Linn. S. N. i. p. 375.

Bitis atropos, Bouleng., *t.c.*, p. 495.

Cape Colony, Transvaal.

Cape Colony: Cape Peninsula (Fairbridge, Layard, Lightfoot); Knysna (Oakley); East London (Wood); Port Elizabeth (Drege, Moorhouse).

Transvaal: Lydenburg (Kilgour).

4. BITIS INORNATA.

Echidna inornata, Smith, Ill., Rept. pl. iv.

Bitis inornata, Bouleng., t.c., 496.

Cape Colony.

5. BITIS CORNUTA.

Vipera cornuta, Daud. Hist. Rept. vi. p. 188.

Bitis cornuta, Bouleng., t.c., p. 497.

Cape Colony, German South-West Africa.

Cape Colony: Cape Peninsula (Oakley, Ogilvie); Calvinia, Clanwilliam (Schlechter); Worcester (Le Fèvre, Paynter); Serowe, Bechuanaland (Schönland); Little Namaqualand (Turle); Tulbagh (Kleinschmidt).

6. BITIS CAUDALIS.

Vipera caudalis, Smith, Ill., Rept. pl. vii.

Bitis caudalis, Bouleng., t.c., p. 498.

Angola to the north part of Cape Colony and Southern Rhodesia.

Cape Colony: Little Namaqualand (Hirsch, Scully, Thomas, Turle); Victoria West (Piers); Serowe, Bechuanaland (Blackbeard).

Southern Rhodesia: Insiza (French).

3. ATRACTASPIS.

Smith, Ill., Rept.; Bouleng. Cat. Sn. iii. p. 510.

Two Species in South Africa.

Ventrals 221-260 *A. bibronii*.
 Ventral 199 *A. duerdeni*.

1. ATRACTASPIS BIBRONII, Smith, op. c. pl. lxxi.; Bouleng., t.c., p. 515.

Cape Colony, Natal, Zululand, Transvaal, Portuguese East Africa, German South-West Africa, Angola.

Natal: Durban (Bowker).

Transvaal: Barberton (Kolbe).

Portuguese East Africa: Delagoa Bay (De Coster).

2. ATRACTASPIS DUERDENI, Gough, Albany Mus. Rec., ii., 1907, p. 178, fig.

North-East Kalahari.

DESCRIPTION OF NEW SPECIES.

GLAUCONIA GRACILIOR.

Snout rounded; supraocular present, not much larger than the frontal, a little broader than long; rostral about one-third the width of the head, hardly twice the width of the nasal, not extending posteriorly beyond the level of the eyes, in contact behind with the frontal and the supraoculars; nasal completely divided into two; ocular bordering the lip, between two labials, the anterior of which is very small. Body very slender, its diameter 90 to 110 times in the total length. 14 scales round the body. Length of tail 10 to 15 times in total length. Uniform blackish brown. Total length, 230 mm.

Numerous specimens from various localities in Cape Colony (Van Rynsdorp, Robertson, Clanwilliam, Matjesfontein).

PART III.—BATRACHIA.

ECAUDATA.

Five Families in South Africa.

I. Tongue present; eustachian tubes separated; movable eyelids (*PhaneroGLOSSA*).

A. Pectoral arch without arched epicoracoid cartilage (*Firmisternia*).

Upper jaw toothed; tongue extensively free behind *Ranidæ*.

No teeth; tongue extensively free behind *Engystomatidæ*.

B. Præcoracoid connected with the coracoid on the median line by an arched epicoracoid cartilage overlapping its fellow (*Arcifera*).

Upper jaw toothed; tongue disk-shaped and slightly free behind *Cystignathidæ*.

No teeth; tongue extensively free behind *Bufonidæ*.

II. Tongue absent; eustachian tubes united in a single opening; no eyelids (*Aglossa* *Pipidæ*).

FAMILY RANIDÆ.

Nine Genera in South Africa.

I. Pupil horizontal.

A. Tips of fingers and toes not dilated into large disks.

1. Vomerine teeth present; tongue without a free papilla in the middle.

Outer metatarsals separated by web; inner metatarsal tubercle small, soft *Rana*.

Outer metatarsals bound together; inner metatarsal tubercle large, hard, compressed *Pyxicephalus*.

2. Vomerine teeth absent.

Outer metatarsals separated by web; toes webbed; tongue deeply notched behind *Phrynobatrachus*.

Outer metatarsals bound together; toes free or nearly so; tongue feebly notched *Arthroleptis*.

B. Tips of fingers and toes dilated into large disks.

Outer metatarsals separated by web; vomerine teeth present; two inner fingers opposable to two outer *Chiromantis*.

Outer metatarsals bound together; vomerine teeth absent *Rappia*.

II. Pupil vertical; outer metatarsals bound together.

A. Tips of fingers and toes dilated into large disks; toes webbed.

Vomerine teeth absent *Megalixalus*.

Vomerine teeth present *Hylambates*.

B. Tips of fingers and toes not dilated; toes free or with a rudiment of web

Cassina.

1. RANA.

Linn. S.N. i. p. 354; Bouleng. Cat. Batr. p. 6.

Eight Species in South Africa.

I. Vomerine teeth in two oblique groups or short transverse series between or just behind the level of the choanæ.

A. Eyes supero-lateral, interorbital space much narrower than the upper eyelid; toes at least two-thirds webbed; hind limbs with more or less regular dark transverse spots or cross-bars; males with internal vocal sacs.

Tibio-tarsal articulation not reaching, or barely reaching, the tip of the snout, the leg (tibia) not more than half length of head and body *R. fuscigula*.

Tibio-tarsal articulation reaching beyond tip of snout, the leg more than half length of head and body *R. delalandii*.

B. Eyes lateral, interorbital space nearly as broad as the upper eyelid; toes about half, or barely two-thirds webbed; skin perfectly smooth on the back; leg not more than half length of head and body; hind limbs without dark transverse spots or cross-bars; males with external vocal sacs.

Vomerine teeth between the choanæ; tibio-tarsal articulation not reaching beyond the eye *R. galamensis*.

Vomerine teeth behind the level of the choanæ; tibio-tarsal articulation reaching between the eye and the tip of the snout *R. darlingi*.

II. Vomerine teeth in two short, straight or oblique series touching the inner front edge of the choanæ; males with external vocal sacs.

Toes about half-webbed; leg one-half to two-thirds the length of head and body *R. mascareniensis*.

Toes nearly entirely webbed (to the tips of the third and fourth); leg at least two-thirds the length of head and body *R. oxyrhynchus*.

III. Vomerine teeth in two long, straight, or slightly oblique series on a level with the front border of the choanæ; web between the toes very short or rudimentary; males with internal vocal sacs.

Foot not two-thirds the length of head and body *R. grayi*.

Foot more than two-thirds the length of head and body *R. fasciata*.

1. RANA FUSCIGULA, Dum. & Bibr. Erp. Gén. viii. p. 386; Bouleng., *op. cit.*, p. 50.

Rana queketti, Bouleng. P.Z.S., 1894, p. 643, pl. xxxix. fig. 1.

South Africa, British Central Africa, West Africa.

Cape Colony: Cape Peninsula (Oakley, Lightfoot, Purcell); Cape Town (Trimen, Oakley, Werth); Stellenbosch (Purcell); Caledon (Purcell); Paarl (Sclater); Tulbach (Purcell); Clanwilliam (Leipoldt); Calvinia (French); Worcester Division (Paynter, Purcell); Ceres (Purcell); Laingsberg Division (Purcell); Robertson (Keit); Port Elizabeth (Moorhouse).

Orange River Colony: Smithfield (Kannemeyer).

2. RANA DELALANDII, Dum. & Bibr., *t.c.*, p. 388.

Rana angolensis (Bocage), Bouleng., *op. cit.*, p. 50.

South Africa, Angola, British Central Africa.

Cape Colony: Port Elizabeth (Moorhouse); Calvinia (French) Bedford Division (Sclater).

Natal (no history).

Orange River Colony: Smithfield (Kannemeyer).

Transvaal: Johannesburg (Elleman, Ross).

Southern Rhodesia: Salisbury (ff. Darling).

3. RANA GALAMENSIS, Dum. & Bibr., *t.c.*, p. 367; Bouleng., *op. cit.*, p. 61.

Tropical Africa to Beira.

4. RANA DARLINGI, Bouleng. P.Z.S., 1902, ii. p. 15, pl. iii. fig. 1.

Mashonaland.

5. *RANA MASCARENIENSIS*, Dum. & Bibr., *t.c.*, p. 350; Bouleng. Cat., p. 52.
Egypt and Tropical Africa to Southern Rhodesia and Zululand.
Southern Rhodesia: Salisbury (Marshall).
6. *RANA OXYRHYNCHUS*, Smith, Ill., Rept. pl. lxxvii. fig. 2; Bouleng., *op. cit.*, p. 51.
Tropical and South Africa.
Southern Rhodesia: Salisbury (Marshall).
North-West Rhodesia: Livingstone (Drury).
7. *RANA GRAYI*, Smith, Ill., Rept. pl. lxxvii. fig. 2; Bouleng., *op. cit.*, p. 53.
Cape Colony, Natal, Zululand.
Cape Colony: Cape Peninsula (Oakley, Sclater, Purcell, de Souza); Caledon Division (Purcell, Lightfoot); Paarl Division (Sclater); Ceres (Purcell); Clanwilliam Division (Leipoldt, Lightfoot); Port Elizabeth (Drege, Moorhouse); Swellendam (Purcell); Port St. Johns (Shortridge); Touw's River, Worcester Division (Paynter); Little Namaqualand (Péringuey).
Natal: Durban (Bowker); Umvoti (Fry).
8. *RANA FASCIATA*.
Strongylopus fasciatus, Tschudi, Class. Batr., p. 79.
Rana fasciata, Bouleng., *op. cit.*, p. 54.
Cape Colony, Natal, Zululand, British Central Africa.
Cape Colony: Cape Peninsula (Layard, Butler, Oakley, Purcell); Caledon Division (Purcell); Clanwilliam (Lightfoot); King William's Town (Sclater); George (Leipoldt).

2. PYXICEPHALUS.

Tschudi, Class. Batr. p. 83.

Four Species in South Africa.

I. Male with internal vocal sacs.

- Leg (tibia) about $\frac{1}{3}$ length of head and body; tarso-metatarsal articulation reaching tympanum or eye; back usually with elongate warts or glandular longitudinal folds; head large and rough in adult *P. adspersus*.
Leg about $\frac{2}{3}$ length of head and body; tarso-metatarsal articulation reaching eye or a little beyond; back with rounded warts *P. delalandii*.
Leg about $\frac{1}{2}$ length of head and body; tarso-metatarsal articulation nearly reaching end of snout; back smooth *P. natalensis*.

II. Male with external vocal sacs.

Leg about $\frac{2}{3}$ length of head and body; tarso-metatarsal articulation reaching eye; back with flat warts and a very indistinct dorso-lateral fold *P. ruddi*.

1. PYXICEPHALUS ADSPERSUS, Tschudi, *op. cit.*, p. 84.
Rana adspersa, Bouleng. Cat. p. 33.
 Tropical Africa to German South-West Africa, Southern Rhodesia, Transvaal, Orange River Colony, Eastern parts of Cape Colony. Cape Colony: Albany Division (Schönland); Port St. Johns (Shortridge).
 Orange River Colony: Smithfield (Kannemeyer); Vredefort Road (Barrett-Hamilton).
 Southern Rhodesia: Mazoe (ff. Darling).
2. PYXICEPHALUS DELALANDII, Tschudi, *l.c.*
Rana delalandii, Bouleng., *t.c.*, p. 31.
 Tropical and South Africa.
 Cape Colony: Cape Division (Butler, de Souza, Sclater); Bedford Division (Stephenson); Burghersdorp (Kannemeyer); Hanover (Shortridge); Port Elizabeth (Drege); Clanwilliam (Leipoldt); Little Namaqualand (Péringuey).
 Orange River Colony: Smithfield (Kannemeyer).
 Southern Rhodesia: Matoppo Hills (Pillans).
3. PYXICEPHALUS NATALENSIS, Smith, Ill., Rept. App. p. 23.
Rana natalensis, Bouleng., *t.c.*, p. 30.
 Natal, Zululand, Transvaal.
 Durban (Bowker).
4. PYXICEPHALUS RUDDI.
Rana ruddi, Bouleng. P.Z.S., 1907, p. 480, pl. xxii. fig. 1.
 Portuguese East Africa (Beira).

3. PHRYNOBATRACHUS.

Günth. P.Z.S., 1862, p. 190; Bouleng. Cat. p. 111.

Three Species in South Africa.

Tympanum very indistinct or hidden; tarso-metatarsal articulation reaching tip of snout or a little beyond	<i>P. natalensis</i> .
Tympanum distinct; tarso-metatarsal articulation reaching far beyond tip of snout.	<i>P. ranoides</i> .
Tympanum distinct; tarso-metatarsal articulation reaching the eye	<i>P. capensis</i> .

1. PHRYNOBATRACHUS NATALENSIS. .
Stenorhynchus natalensis, Smith, Ill., Rept. App. p. 23.
Phrynobatrachus natalensis, Bouleng., *op. cit.*, p. 112.
Natal, Zululand, Transvaal, Orange River Colony, Southern Rhodesia, Angola, Central and East Africa.
Southern Rhodesia : Mazoe, Mashonaland (ff. Darling).
British Central Africa : Fwanbo.
2. PHRYNOBATRACHUS RANOIDES, Bouleng. P.Z.S., 1894, p. 644,
pl. xxxix. fig. 2.
Natal.
3. PHRYNOBATRACHUS CAPENSIS, sp. n.
Cape Colony : Cape Division (Purcell).

4. ARTHROLEPTIS.

Smith, Ill., Rept. App. p. 24 ; Bouleng. Cat. p. 116.

Three Species in South Africa.

- I. First finger as long as second.
Inner metatarsal tubercle much shorter than inner toe *A. wahlbergii*.
Inner metatarsal tubercle as long as inner toe *A. whytii*.
II. First finger shorter than second *A. lightfooti*.

1. ARTHROLEPTIS WAHLBERGII, Smith, *l.c.* ; Bouleng., *op. c.*, p. 117.
Cape Colony, Natal, Zululand.
Cape Colony : Port St. Johns (Shortridge).
2. ARTHROLEPTIS WHYTII, Bouleng. P.Z.S., 1897, p. 802, pl. xlvi.
fig. 3.
Portuguese East Africa, British Central Africa.
3. ARTHROLEPTIS LIGHTFOOTI, sp. n.
Cape Colony : Newlands, Cape Division (Lightfoot).

5. CHIROMANTIS.

Peters, Arch. f. Naturg., 1855, p. 56 ; Bouleng. Cat. p. 92.

A Single Species in South Africa.

1. CHIROMANTIS XERAMPELINA, Peters, *l.c.*, p. 56 ; Bouleng., *op. c.*,
p. 93.
East Africa, Rhodesia, Transvaal.

Transvaal : Lydenburg (Fry).

Southern Rhodesia : Palapye (Selater).

North-Western Rhodesia : Livingstone (Stephenson).

6. RAPPIA.

Günth, Zool. Rec. i., 1865, p. 130; Bouleng. Cat. p. 119.

Seven Species in South Africa.

- I. Snout scarcely projecting beyond mouth.
- A. Snout obtusely pointed; tibio-tarsal articulation reaching between eye and tip of snout; back smooth *R. horstockii*.
- B. Snout rounded; tibio-tarsal articulation not reaching beyond eye.
1. Back smooth.
- A strong fold across chest *R. marmorata*.
- No strong fold across chest.. .. . *R. argus*.
2. Back more or less warty.
- Fingers one-third webbed *R. undulata*.
- Fingers not one-third webbed *R. cinctiventris*.
- C. Snout rounded; tibio-tarsal articulation reaching tip of snout; tongue with two projecting papillæ in front *R. tuberilinguis*.
- II. Snout very pointed, strongly projecting beyond mouth *R. sugillata*.

1. RAPPIA HORSTOCKII.

Hyla horstockii, Schleg. Abbild. p. 24.

Rappia horstockii, Bouleng., *op. c.*, p. 120.

Cape Colony.

Cape Peninsula (French); Cape Flats (Fry, de Souza, Treleaver, Duncan); Knysna (Goldburg).

2. RAPPIA MARMORATA.

Hyperolius marmoratus, Rapp, Arch. f. Naturg., 1842, p. 289, pl. vi.

Rappia marmorata, Bouleng., *t.c.*, p. 121.

Tropical and South Africa.

Cape Colony : Cape Peninsula (de Souza); Port St. Johns (Short-ridge); Kentani (Kolbe, Pegler).

Southern Rhodesia : Salisbury (Marshall).

Portuguese East Africa : Delagoa Bay (De Coster).

German South-West Africa : Otjimbora (Eriksson).

3. RAPPIA ARGUS.

Hyperolius argus, Peters, Arch. f. Naturg., 1855, p. 57.

Rappia argus, Bouleng., *op. c.*, p. 132.
Central and East Africa, Zululand.

4. **RAPPIA UNDULATA**, Bouleng. Ann. Mus. Congo, ii. 1902, p. 4, pl. ii.
fig. 2.

East and Central Africa, Natal, Cape Colony.
Cape Colony: Cape Division; Port Elizabeth (Bairston).

5. **RAPPIA CINCTIVENTRIS**.

Hyperolius cinctiventris, Cope, Proc. Ac. Philad., 1862, p. 342.

Rappia cinctiventris, Bouleng. Cat. p. 126.

Tropical and South Africa.

Cape Colony: East London (Wood).

Southern Rhodesia (J. R. Ward).

6. **RAPPIA TUBERILINGUIS**.

Hyperolius tuberilinguis, Smith, Ill., Rept. App. p. 26.

Rappia tuberilinguis, Bouleng., *op. c.*, p. 125.

Caffraria.

7. **RAPPIA SUGILLATA**.

Hyperolius sugillatus, Cope, Proc. Ac. Philad., 1862, p. 342.

Natal, German South-West Africa, Angola.

German South-West Africa: Otjimborá, Damaraland (Eriksson).

7. MEGALIXALUS.

Günth. P.Z.S., 1868, p. 485; Bouleng. Cat. p. 128.

Two Species in South Africa.

Fingers one-third webbed *M. fornasinii*.
Fingers with a rudiment of web; vertex and snout with spinose
horny tubercles *M. spinifrons*.

1. **MEGALIXALUS FORNASINII**.

Eucnemis fornasinii, Bianc. Spec. Zool. Mossamb., Rept. pl. v.

fig. 1.

Megalixalus fornasinii, Bouleng., *op. c.*, p. 130.

Tropical Africa, Portuguese East Africa.

2. **MEGALIXALUS SPINIFRONS**.

Hyperolius spinifrons, Cope, Proc. Ac. Philad., 1862, p. 372.

Megalixalus spinifrons, Bouleng., *op. c.*, p. 130.

Cape Colony, Natal.

Cape Colony: Cape Division (de Souza).

8. HYLAMBATES.

A. Dum. Ann. Sc. Nat. (3) xix., 1853, p. 162; Bouleng. Cat. p. 132.

A Single Species in South Africa.

1. HYLAMBATES NATALENSIS.

Polypedates natalensis, Smith, Ill., Rept. App. p. 25.

Hylambates natalensis, Bouleng., *op. c.*, p. 135.

Cape Colony, Natal.

Cape Colony: Port St. Johns (Shortridge, Weisbecker).

Natal: Durban (Bowker); Pinetown (Cregoe); Umvoti (Fry).

9. CASSINA.

Girard, Proc. Ac. Philad., 1853, p. 421; Bouleng. Cat. p. 131.

Two Species, which may have to be united.

Toes quite free *C. senegalensis*.

Toes with a distinct rudiment of web *C. wealii*.

1. CASSINA SENEGALENSIS.

Cystignathus senegalensis, Dum. & Bibr. Erp. Gén. viii. p. 418.

Cassina senegalensis, Bouleng., *l.c.*

Tropical Africa, Cape Colony, Natal, Southern Rhodesia.

2. CASSINA WEALII, Bouleng., *l.c.*, pl. xi., fig. 7.

Cape Colony, Natal.

Cape Colony: Cape Division (de Souza).

FAMILY ENGYSTOMATIDÆ.

Four Genera in South Africa.

Tips of fingers and toes dilated *Phrynomantis*.

Tips of fingers and toes not dilated; limbs moderately developed,
not adapted for burrowing; mouth moderately large *Cacosternum*.

Tips of fingers and toes not dilated; limbs very short, the hind
pair adapted for burrowing; mouth very small, snout very short *Breviceps*.

Tips of fingers and toes not dilated; limbs very short, the front
pair adapted for burrowing; mouth very small, snout rather long
and pointed *Hemisus*.

1. PHRYNOMANTIS.

Peters, Mon. Berl. Ac. 1867, p. 35; Bouleng. Cat. p. 172.

Two Species in South Africa.

Inner metatarsal tubercle very small; black above, with orange or red markings *P. bifasciata*.
Inner metatarsal tubercle larger; grey above, with black markings *P. annectens*.

1. PHRYNOMANTIS BIFASCIATA.

Brachymerus bifasciatus, Smith, Ill., Rept. pl. lxiii.

Phrynomantis bifasciata, Bouleng., l.c.

East and Central Africa and Angola to the northern parts of Cape Colony and Natal.

Cape Colony: Kimberley (Gain).

Bechuanaland: Palapye (Blackbeard).

Nyassaland: Shiré Valley.

2. PHRYNOMANTIS ANNECTENS, Werner, Jen. Zeitschr. xvi. 1910, p. 294.

Cape Colony, Aar River.

2. CACOSTERNUM.

Bouleng. Ann. & Mag. N. H. (5) xx., 1887, p. 51.

1. CACOSTERNUM BOETTGERI.

Arthroleptis boettgeri, Bouleng. Cat. p. 118, pl. xi. fig. 6.

Cacosternum nanum, Bouleng. Ann. & Mag. N. H. (5) xx., 1887, p. 51.

Cacosternum namaquense, Werner, Jen. Zeitschr. xvi., 1910, p. 294, fig.

South and East Africa.

Cape Colony: Cape Town (Lightfoot); Table Mountain (Schlatter); Wynberg (Purcell); Caledon (Purcell); Beaufort West (Purcell); Montague (Purcell); Calvinia (Leipoldt); Graaff-Reinet (Paynter); Little Namaqualand (Turle).

Orange River Colony: Smithfield (Kannemeyer); Vredefort Road (Barrett-Hamilton).

North-Western Rhodesia: Livingstone (Drury).

3. BREVICEPS.

Merrem, Tent. p. 178: Bouleng. Cat. p. 176.

Synopsis of the Species.

- I. Fourth finger nearly as long as or a little shorter than second; tubercles under fingers and toes quite distinct.
 Diameter of eye 10 to 15 times in distance from end of snout to vent. *B. gibbosus.*
 Diameter of eye 8 times in distance from end of snout to vent .. *B. adspersus.*
- II. Fourth finger much shorter than second.
 Diameter of eye 8 to 10 times in distance from end of snout to vent; tubercles under fingers and toes feebly prominent or quite distinct *B. mossambicus.*
 Diameter of eye $6\frac{1}{2}$ to 8 times in distance from end of snout to vent; tubercles very small under the fingers, wholly absent under the toes *B. macrops.*

1. BREVICEPS GIBBOSUS.

Rana gibbosa, Linn. S. N. i. p. 355.*Breviceps gibbosus*, Bouleng., *op. cit.*, p. 176.*Breviceps verrucosus* (Rapp), Bouleng., *op. c.*, p. 177.*Breviceps pentheri*, Werner, Zool. Anz. 1899, p. 116.

South Africa, British Central Africa.

Cape Colony: Cape Peninsula (Purcell, Selater, Oakley, Fisk, Spratt); Robertson Division (Keit); Swellendam Division (Barry); Bathurst Division (Becker); George (Wilman); Port St. Johns (Shortridge).

Natal: Durban (Bowker).

Transvaal: Barberton (Cregoe).

2. BREVICEPS ADSPERSUS, Peters, Reise Mossamb. iii. p. 177.

Cape Colony, Transvaal, German South-West Africa.

Cape Colony: Port Nolloth (Scully).

3. BREVICEPS MOSSAMBICUS, Peters, Arch. f. Naturg., 1855, p. 58;

Bouleng., *op. c.*, p. 177.

Natal, Zululand, Transvaal, Portuguese East Africa, Rhodesia, German South-West Africa, Angola, British Central Africa.

Natal: Durban (Bowker).

Transvaal: Barberton (Rendall); Pietersburg (Daneel); Johannesburg (Fry).

Southern Rhodesia: Salisbury (ff. Darling); Mazoe (ff. Darling).

Portuguese East Africa: Delagoa Bay (De Coster).

4. BREVICEPS MACROPS, Bouleng. Ann. & Mag. N. H. (7) xx., 1907, p. 46, pl. ii.

Cape Colony.

Cape Colony: Little Namaqualand (Kolbe), *types*.

4. HEMISUS.

Günth. Cat. p. 47; Bouleng. Cat. p. 178.

Two Species.

Toes free, without subarticular tubercles; inner metatarsal tubercle small *H. guttatum*.
 Toes with a rudiment of web, with more or less distinct subarticular tubercles; inner metatarsal tubercle large, compressed *H. marmoratum*.

1. HEMISUS GUTTATUM.

Engystoma guttatum, Rapp, Arch. f. Naturg., 1842, p. 290, pl. vi. figs. 3 and 4.

Hemismus guttatum, Bouleng., *l.c.*

Eastern parts of Cape Colony, Natal, Zululand.

Natal coast (Quekett).

2. HEMISUS MARMORATUM.

Engystoma marmoratum, Peters, Arch. f. Naturg., 1855, p. 58.

Hemismus sudanense, Bouleng., *l.c.*

Tropical Africa southwards to Angola, Mashonaland, and Beira.

FAMILY CYSTIGNATHIDÆ.

*A Single Genus in Africa.**

1. HELEOPHRYNE.

W. Selater, Ann. S. Afr. Mus. i., 1895, p. 110; Hewitt, Ann. Transv. Mus., 1909, p. 45.

Two Species.

Toes entirely webbed *H. purcelli*.
 Toes half-webbed *H. regis*.

1. HELEOPHRYNE PURCELLI, W. Selater, *t.c.*, p. 111, pl. —, fig. 3.

Cape Colony.

Stellenbosch Division (Purcell), *type*.

2. HELEOPHRYNE REGIS, Hewitt, *l.c.*

Cape Colony (Knysna).

* An examination of the pectoral arch of the type of *Heleophryne* enables me to confirm Mr. J. Hewitt's very interesting discovery that this genus belongs to the Cystignathidæ.

FAMILY BUFONIDÆ.

A Single Genus in South Africa.

1. BUFO.

Laurenti, Syn. Rept. p. 25; Bouleng. Cat. p. 281.

Seven Species in South Africa.

I. Tympanum distinct.*

A. Parotoid glands distinct.

First finger much longer than second; tympanum at least $\frac{2}{3}$ diameter of eye in adult; tarso-metatarsal articulation reaching tympanum or beyond *B. regularis.*

Fingers blunt, first not extending, or extending but little beyond second; tympanum $\frac{1}{2}$ to $\frac{3}{4}$ diameter of eye; tarso-metatarsal articulation not reaching beyond tympanum *B. granti.*

Fingers rather pointed, first not extending beyond second; tympanum $\frac{1}{3}$ to $\frac{1}{2}$ diameter of eye; tarso-metatarsal articulation not extending beyond centre of eye; greater part of belly smooth *B. angusticeps.*

B. No distinct parotoid glands; tympanum large and close to the eye.

A glandular lateral fold from behind the eye *B. carens.*

No glandular lateral fold *B. vertebralis.*

II. Tympanum absent.

Snout rounded; parotoid glands rather small, narrow *B. taitanus.*

Snout pointed; parotoid glands large, extending down the sides. *B. anotis.*

1. BUFO REGULARIS, Reuss, Mus. Senck. i. p. 60; Bouleng. Cat. p. 298.

Egypt and Tropical and South Africa.

Cape Colony: Cape Division (Oakley, Duncan); Port Elizabeth (Cregoe); Ceres (Purcell); Tulbagh (Purcell); Paarl (Purcell); George (Leipoldt); Caledon (Purcell); Swellendam (Purcell); Burghersdorp (Kannemeyer); &c.

Orange River Colony: Smithfield (Kannemeyer).

Transvaal: Barberton (Rendall); Johannesburg (Cregoe, Ross); Krugersdorp (Watson).

Southern Rhodesia: Salisbury (Marshall, ff. Darling, Thomas).

2. BUFO GRANTI, Bouleng. Ann. & Mag. N. H. (7) xii., 1903, p. 215, pl. xvi.

Cape Colony, Natal, Orange River Colony.

Cape Colony: Hanover (Schreiner, Shortridge); Graaff-Reinet (Paynter); Beaufort West (Purcell); Lingsburg, Worcester Division (Purcell); Little Namaqualand, (Péringuey, Turle).

* Except in very young specimens.

Natal: Mt. aux Souces (Bulus).

Orange River Colony: Smithfield (Kannemeyer).

3. *BUFO ANGSTICEPS*, Smith, Ill., Rept., pl. lxxix. fig. 1; Bouleng. Cat. p. 300.

Cape Colony, Natal.

Cape Colony: Cape Peninsula (Lightfoot, de Souza, Purcell, Southey, French); Caledon (Purcell); Worcester Division (Purcell, Paynter).

4. *BUFO CARENS*, Smith, *op. cit.*, pl. lxxviii. fig. 1; Bouleng., *op. c.*, p. 301.

Natal, Transvaal, Rhodesia, Portuguese East Africa.

Transvaal: Barberton (Rendall).

Southern Rhodesia: Salisbury (Thomas); Matoppos Hills (Pillans).

5. *BUFO VERTEBRALIS*, Smith, *op. cit.*, pl. lxxviii. fig. 2.

Cape Colony, Orange River Colony.

Cape Colony: Cape Kentany (Pegler).

Orange River Colony: Smithfield (Kannemeyer); Vredefort Road (Hamilton).

6. *BUFO TAITANUS*, Peters, Mon. Berl. Ac., 1878, p. 208, pl. ii. fig. 9.
East and Central Africa: Portuguese East Africa (Beira).

7. *BUFO ANOTIS*, Bouleng. Ann. & Mag. N. H. (7) xx., 1907, p. 48, pl. iii.

Chirinda Forest, Mashonaland.

FAMILY PIPIDÆ.

A Single Genus in South Africa.

1. XENOPUS.

Wagler, Isis, 1827, p. 726; Bouleng. Cat. p. 456.

1. *XENOPUS LÆVIS*.

Pipa lævis, Daud. Hist. Rain. Gren. Crap. p. 85, pl. xxx. fig. 1.

Xenopus lævis, Bouleng., *l c.*

South Africa, Angola, East Africa.

Cape Colony: Cape Division (R. Trimen); Robertson (Keit); Worcester (Purcell); Clanwilliam (Leipoldt); Prince Albert (Purcell); Burghersdorp (Kannemeyer); Calvinia (Leipoldt); Bedford (Selater); Port St. Johns (Shortridge).

DESCRIPTIONS OF NEW SPECIES.

PHRYNOBATRACHUS CAPENSIS.

Tongue without median papilla. Head as long as broad; snout rounded, hardly as long as the orbit; no canthus rostralis; interorbital space broader than the upper eyelid; tympanum hidden. Fingers and toes obtuse, the tips not dilated; first finger slightly shorter than second; toes one-third webbed, the web deeply notched but continued as a fringe to the last or penultimate phalanx; subarticular tubercles small, feebly prominent; a very small inner metatarsal tubercle; no tarsal tubercle. Tarso-metatarsal articulation reaching the eye; tibia a little shorter than the foot, nearly $\frac{2}{3}$ length of head and body. Skin smooth. Dark brown above, speckled with darker; a light band along each side; a dark bar between the eyes, divided by a narrow light vertebral line; lower parts brown, belly spotted with white.

From snout to vent 15 mm.

A single specimen from the Cape Flats (Coll. Dr. Purcell).

ARTHROLEPTIS LIGHTFOOTI.

Tongue without median papilla. Head as long as broad; snout rounded, as long as the orbit; canthus rostralis feeble; interorbital space broader than the upper eyelid; tympanum distinct, barely half the diameter of the eye. Fingers and toes with swollen tips; first finger shorter than second; toes with an almost imperceptible rudiment of web; subarticular tubercles small, feebly prominent; a very small inner metatarsal tubercle; no tarsal tubercle. Tarso-metatarsal articulation reaching the eye; tibia slightly shorter than the foot, $\frac{2}{3}$ length of head and body. Greyish brown above, snout and flanks lighter; a blackish brown streak from the nostril to above the root of the arm, passing through the eye and broader on the temple; dark brown spots on the upper lip; lower parts white, sides of belly and hind limbs marbled with dark brown.

From snout to vent 16 mm.

A single specimen from Newlands, near Cape Town (Coll. Lightfoot).

ADDITION.

BITIS, *Gray*.

BITIS GABONICA.

Echidna gabonica, Dum. & Bebr. Erpet. Génér. vii., p. 1428, pl. lxxx. b.

Bitis gabonica, Boul. Cat. Sn. iii., p. 499.

Tropical Africa (West Africa, from Liberia to Damaraland). Zanzibar.

Portuguese East Africa. Natal. Tonga land (W. E. Jones). Portuguese East Africa (Massi Kessi) (J. Krige).

INDEX.

	PAGE		PAGE
A			
Ablabophis	501, 503	<i>atra</i> (Agama)	464, 465
Ablepharus	482, 486	Atractaspis	521, 523
Acontias	482, 489	<i>atricollis</i> (Agama).....	464, 466
<i>aculeata</i> (Agama)	464, 465	<i>atropos</i> (Bitis)	522
<i>acutilabris</i> (Mabuia)	483, 485	<i>aulicus</i> (Chamæ tortus)	511
<i>adpersus</i> (Breviceps)	534	<i>aurantiacus</i> (Typhlosaurus)	490
<i>adpersus</i> (Pyxicephalus) ..	527, 528	<i>auritus</i> (Gerrhosaurus)	480
<i>ænea</i> (Chamæsauro)	470	<i>aurora</i> (Lamprophis)	503, 504
<i>afer</i> (Rhoptropus)	463	B	
<i>affinis</i> (Pachydaetylus).....	460, 461	BATRACHIA	524
<i>africana</i> (Edura)	458	<i>bergeri</i> (Prosymna)	508, 509
<i>africanus</i> (Tetradaetylus)	481	<i>bibronii</i> (Atractaspis)	521, 523
Agama	464	<i>bibronii</i> (Pachydaetylus) ..	459, 460
AGAMIDÆ	455, 463	<i>bibronii</i> (Typhlops)	497, 498
AGLYPHÆ	502	<i>bicolor</i> (Scelotes)	487, 488
<i>albigularis</i> (Varanus)	471	<i>bifasciata</i> (Phrynomantis) ..	532, 533
<i>ambigua</i> (Prosymna)	508, 509	<i>bipes</i> (Scelotes)	487
Amblyodipsas	502, 515	Bitis	521, 522
<i>amœnus</i> (Pachydaetylus) ..	460, 462	<i>bocagii</i> (Psammophis)	512, 514
Amphisbæna	471	<i>bœttgeri</i> (Cacosternum)	533
AMPHISBÆNIDÆ	455, 471	BOIDÆ	496, 500
Amplorhinus	502, 511	Boodon	501, 504
<i>anchietæ</i> (Aporosaura)	479	<i>brachyura</i> (Agama)	464
<i>anchietæ</i> (Naia)	517	<i>braconnieri</i> (Rhoptropus)	463
<i>anchietæ</i> (Typhlops)	497, 498	Breviceps	532, 534
<i>angolensis</i> (Psammophis) ..	513, 514	<i>brevirostris</i> (Psammophis) ..	513, 514
<i>anguina</i> (Chamæsauro)	470	<i>breyeri</i> (Tetradaetylus)	481
<i>anguina</i> (Herpetosaura)	488	Bucephalus	515
<i>angulifer</i> (Chondrodactylus) ..	456	<i>Bufo</i>	536
<i>angusticeps</i> (Bufo)	536, 537	BUFONIDÆ	524
<i>angusticeps</i> (Dendraspis)	520	<i>burchelli</i> (Eremias)	476, 477
<i>annectens</i> (Phrynomantis) ..	533	C	
<i>anotis</i> (Bufo)	536, 537	<i>Cacosternum</i>	532, 533
Aparallactus	502, 516	<i>cæcus</i> (Typhlosaurus)	490
Aporosaura	473, 479	<i>caffer</i> (Chamæleon)	491, 493
<i>arenicola</i> (Herpetosaura)	488	<i>caffer</i> (Scelotes)	487
<i>argus</i> (Rappia)	530	<i>calaharica</i> (Mabuia)	484
<i>arietans</i> (Bitis)	522		
armata (Agama)	465		
Arthroleptis	525, 529		
Aspidelaps	502, 518		

	PAGE
Calamelaps	516
cana (Pseudaspis)	506
capense (Lycophidium)	505
capensis (<i>Amphisbena</i>)	472
capensis (Aparallactus)	516
capensis (Eremias)	476, 477
capensis (Ichnotropis)	475, 476
capensis (<i>Lygodactylus</i>)	458
capensis (Monopeltis)	472
capensis (<i>Pachydactylus</i>) ..	459, 461
capensis (<i>Phrynobatrachus</i>) ..	528, 529
capensis (<i>Platysaurus</i>)	469, 538
capensis (<i>Scelotes</i>)	487
capensis (<i>Simocephalus</i>)	506
capensis (<i>Zonurus</i>)	467, 469
carens (<i>Bufo</i>)	536, 537
carinata (<i>Pythonodipsas</i>)	510
Cassina	525, 532
cataphractus (<i>Zonurus</i>)	467, 468
caudalis (<i>Bitis</i>)	522, 523
Causus	521
Chamæleon	491
CHAMELEONTIDÆ	491
Chamæsauro	467, 470
Chamæortus	502, 511
Chirindia	471, 472
Chiromantis	525, 529
Chlorophis	501, 507
Chondrodactylus	455, 456
cinctiventris (<i>Rappia</i>)	530, 531
colobura (<i>Monopeltis</i>) ..	472, 473, 495
Colopus	463
COLUBRIDÆ	496, 501
concolor (<i>Glaucania</i>)	499, 500
Cordylus	479, 482
cordylus (<i>Zonurus</i>)	467, 468
cornuta (<i>Bitis</i>)	522, 523
cregoi (<i>Typhlosaurus</i>)	490
crucifer (<i>Psammophis</i>)	513, 514
ctenodactyla (<i>Scaptira</i>) ..	478, 479
cuneirostris (<i>Scaptira</i>)	478, 479
CYSTIGNATHIDÆ	524, 525

D

Dactylchilikon	463
damaranus (<i>Chamæleon</i>)	491, 493
darlingi (<i>Rana</i>)	526
Dasyptelis	501, 509
decosteri (<i>Elapechis</i>)	519
decosteri (<i>Monopeltis</i>)	472, 495
defilippii (<i>Causus</i>)	521
delalandii (<i>Nucras</i>)	473
delalandii (<i>Pyxicephalus</i>) ..	527, 528
delalandii (<i>Rana</i>)	525, 526
delalandii (<i>Typhlops</i>)	497, 498
Dendraspis	502, 520
depressa (<i>Scaptira</i>)	478
dilepis (<i>Chamæleon</i>)	491, 492

	PAGE
dinga (<i>Typhlops</i>)	497, 498
Dispholidus	502, 515
distanti (<i>Agama</i>)	464, 465
distanti (<i>Glaucania</i>)	499, 500
dorsalis (<i>Homorelaps</i>)	520
duerdeni (<i>Atractaspis</i>)	523

E

Elapechis	502, 519
Elasmodactylus	457, 459
elegans (<i>Nucras</i>)	474
ENGYSTOMATIDÆ	524, 532
Eremias	473, 476
Eumece	486

F

fasciata (<i>Rana</i>)	526, 527
fasciatus (<i>Pachydactylus</i>) ..	459, 461
fiskii (<i>Lamprophis</i>)	503, 504
flava (<i>Naia</i>)	517
flavularis (<i>Gerrhosaurus</i>) ..	480
formosus (<i>Pachydactylus</i>) ..	460, 461
fornasinii (<i>Megalixalus</i>)	531
fornasinii (<i>Typhlops</i>)	497
frontalis (<i>Prosymna</i>)	508
furcatus (<i>Psammophis</i>)	512, 513
fuscigula (<i>Rana</i>)	525, 526
fuscus (<i>Lamprophis</i>)	503, 504

G

galamensis (<i>Rana</i>)	526
garrulus (<i>Ptenopus</i>)	456
GECKONIDÆ	455
GERRHOSAURIDÆ	455, 479
Gerrhosaurus	479, 480
gibbosus (<i>Breviceps</i>)	534
giganteus (<i>Zonurus</i>)	467
Glaucania	499
GLAUCONIDÆ	496, 499
gracilior (<i>Glaucania</i>) ..	499, 500, 524
grammica (<i>Sepsina</i>)	488, 489
grandis (<i>Gerrhosaurus</i>)	480
granti (<i>Bufo</i>)	536
granti (<i>Monopeltis</i>)	472, 473
GRAYIA	503
<i>grayi</i> (<i>Acontias</i>)	489
grayi (<i>Rana</i>)	526, 527
gronovii (<i>Scelotes</i>)	487, 488
gruetzneri (<i>Mabuia</i>)	483, 484
guentheri (<i>Aparallactus</i>) ..	516
guentheri (<i>Elapechis</i>)	519
guentheri (<i>Scelotes</i>)	487, 488
guttatum (<i>Hemisus</i>)	535
guttatum (<i>Boodon</i>)	504, 505
guttatus (<i>Platysaurus</i>)	469
gutturalis (<i>Chamæleon</i>)	491, 492

	PAGE
H	
hæmachates (Sepedon)	518
haie (Naia)	517
Helicophryne	535
Hemidactylus	456, 458
Hemismus	532, 535
Herpetosaura	482, 488
Heterolepis	506
hildebrandti (Mabuia)	483, 485
hispida (Agama)	464
holubi (Agama)	465
homalocephala (Mabuia) ..	483, 484
Homalosoma	501, 509
Homopholis	456, 459
<i>Homorelaps</i>	502, 520
hoplogaster (Chlorophis)	507
horstockii (Rappia)	530
hotambœia (Leptodira)	510
Hydrus	502, 517

I

Ichnotropis	473, 475
infernalis (Boodon)	504
inornata (Bitis)	522, 523
inornata (Eremias)	476, 477
inornata (Lamprophis)	503, 504
inornatus (Scelotes)	487, 488
irregularis (Chlorophis)	507, 508

J

jallæ (Psammophis)	513, 514
jani (Prosymna)	508, 509
jonesii (Zonurus)	467, 468

K

kirkii (Agama)	464, 466
kirtlandii (Psammophis)	515
knoxii (Scaptira)	478

L

labialis (Glauconia)	499, 500
LACERTIDÆ	473
LACERTILIA	455
lacteus (Homorelaps)	520
lævigatus (Pachydactylus) ..	459, 460
lævissimus (Tropidonotus) ..	502, 503
lalandii (Nuera)	475
latifrons (Glauconia)	500
Lamprophis	501, 503
leightoni (Psammophis)	513
leonhardi (Monopeltis)	472, 473
Leptodira	502, 510
lightfooti (Arthroleptis)	529, 538
lineatus (Acontias)	489
lineatus (Boodon)	504, 505
lineatus (Phyllodactylus)	457

	PAGE
lineatus (Typhlosaurus)	490
lineo-ocellata (Eremias)	476, 477
livida (Nuera)	474
<i>longementalis</i> (<i>Trimerorhinus</i>) ..	511
longipes (Ichnotropis)	475, 476
lubrica (Tropidonotus)	503
lubrica (Aspidelaps)	518
lugubris (Eremias)	476, 477
lutrix (Homalosoma)	509
Lycophidium	501, 505
Lygodactylus	456, 458
Lygosoma	482, 486

M

mabouia (Hemidactylus)	458
Mabuia	481, 482
Macrelaps	502, 516
macrolepis (Chamæsaura)	470
macrolepis (Homopholis)	459
macropholis (Zonurus)	467, 468, 494
macrops (Breviceps)	534
maculatus (Pachydactylus) ..	460, 462
mamba (Dendraspis)	520
mariquensis (Pachydactylus) ..	460, 462
marmorata (Rappia)	530
marmoratum (Hemismus)	535
marshalli (Rhampholeon)	493
mascareniensis (Rana)	526, 527
Megalixalus	525, 531
melanocephalus (Chamæleon) ..	491, 492
meleagris (Acontias)	489
mentalis (Boodon)	504, 505
<i>mentomarginatus</i> (<i>Pachydactylus</i>) ..	461
meyeri (Typhlosaurus)	490
microlepidotus (Macrelaps)	516
microlepidotus (Pseudocordylus) ..	469
micropholis (Agama)	465
microphthalmia (Amblyodipsas) ..	515
microterolepis (Agama)	465
mira (Herpetosaura)	488
ironi (Calamelaps)	516
Monopeltis	471, 472
montana (Tropidosaura)	475
mossambica (Agama)	464, 466
mossambicus (Breviceps)	534
mossambicus (Typhlops)	497, 498
mucroso (Typhlops)	497, 498
multimaculatus (Amplorhinus) ..	511
multimaculatus (Rhamphiophis) ..	512

N

Naia	502, 517
<i>namaquense</i> (<i>Cacosternum</i>)	533
namaquensis (Chamæleon)	491, 493
namaquensis (Elasmodactylus) ..	459
namaquensis (Eremias)	476, 477
nanum (Cacosternum)	533

	PAGE
natalensis (Chlorophis)	507
natalensis (Hylambates)	532
natalensis (Phrynobatrachus) ..	528, 529
natalensis (Pyxicephalus) ..	527, 528
neglectus (Chlorophis)	507
nigricans (Gluconia)	499
nigricollis (Naia)	517, 518
nigrolineatus (Gerrhosaurus) ..	480
niloticus (Varanus)	471
notostictus (Psammophis) ..	512, 513
Nucras	473
nyassæ (Simocephalus)	506

O

obscurus (Pachydactylus)	461
occidentalis (Mabuia)	483, 485
ocellatus (Lygodactylus)	460, 462
ocellatus (Rhopropus)	463
Oedura	456, 458
olivaceus (Tropidonotus)	502, 503
OPHIDIA	496
OPISTHOGLYPHE	510
oxyrhynchus (Rana)	526, 527

P

Pachydactylus	457, 459
Pachyrhynchus	479
parvilibus (Chamaeleon)	491, 492
Pelmatogeko	456, 457
peringueyi (Bitis)	522
peringueyi (Mabuia)	483, 484
peringueyi (Phyllodactylus) ..	457, 493
Philothamnus	501, 508
Phrynobatrachus	525, 528
Phrynomantis	532, 533
Phyllodactylus	456, 457
PIPIDÆ	524, 537
planiceps (Agama)	464, 466
platurus (Hydrus)	502, 517
Platysaurus	467, 469
plumbeus (Acontias)	489
polyzonus (Zonurus)	467, 469
porphyreus (Phyllodactylus) ..	457
Prosymna	501, 508
Psammophis	502, 511, 512
Pseudaspis	501, 506
Pseudocordylus	467, 469
Ptenopus	455, 456
pulchella (Agama)	465
pulchella (Eremias)	476, 477
pumilus (Chamaeleon)	491, 492
punctatus (Pachydactylus) ..	460, 462
purcelli (Heleophryne)	535
purcelli (Pachydactylus) ..	460, 463, 494
pustulatus (Zonurus)	467, 469
Python	500
Pythonodipsas	501, 510
Pyxicephalus	526, 527

Q

quadrifrons (Amphisbæna) ..	471, 472
quadriscutata (Monopeltis) ..	472, 473
quilensis (Chamaeleon)	491, 492
quinquetæniata (Mabuia) ..	483, 484

R

Rana	525
rangei (Pelmatogeko)	457
RANIDÆ	524, 525
ranoides (Phrynobatrachus) ..	528, 529
Rappia	525, 530
regis (Heleophryne)	535
regularis (Bufo)	536
Rhamphiophis	502, 512
Rhampholeon	491
RHIPTOGLOSSA	455, 491
rhombeatus (Causus)	521
rhombeatus (Trimerorhinus) ..	511
Rhopropus	463
ruddi (Pyxicephalus)	527, 528
rufulus (Ablabophis)	503
rugosus (Pachydactylus)	460, 462

S

scabra (Dasypeltis)	509
Scaptira	473, 478
Scelotes	482, 487
schinzi (Typhlops)	497, 499
schlegelii (Typhlops)	497, 499
schultzei (Pelmatogeko)	457
SCINCIDÆ	482
scutatus (Aspidelaps)	518, 519
scutifrons (Gluconia)	499, 500
sebæ (Python)	500
semiannulatus (Tarbophis)	510
semiannulus (Lycophidium) ..	505, 506
semivariiegatus (Philothamnus)	501, 508
senegalensis (Cassina)	532
Sepedon	502, 518
seps (Tetradactylus)	481
Sepsina	482, 488
serripes (Scaptira)	478, 479
serval (Pachydactylus)	460, 463
shiranum (Homalosoma)	509
sibilans (Psammophis)	512, 514
Simocephalus	501, 506
spinifrons (Megalixalus)	531
squamulosa (Ichnotropis) ..	475, 476
striata (Mabuia)	483, 485
suborbitalis (Scaptira)	478
subtessellatus (Cordylusaurus) ..	482
sudanense (Hemiusus)	535
sugillata (Rappia)	530, 531
sulcata (Mabuia)	483, 485
sundevallii (Elapechis)	519
sundevallii (Lygosoma)	486

	PAGE
sundevallii (Prosymna)	508
swynnertoni (Chirindia)	472

T

tæniobronchus (Chamæleon) 491, 492	
teniolata (Nucras)	474
Tarbophis	501, 510
tessellata (Nucras)	473, 474
Tetradactylus	479, 481
tetradactylus (Tetradactylus) ..	481
Thelotornis	502, 515
thomasi (Psammophis)	514
transvaaliensis (Psammophis) ..	513
tridactylus (Scelotes)	487
trigrammus (Psammophis)	513
Trimerorhinus	502, 511
tritæniatus (Trimerorhinus) 511, 512	
trivittata (Mabuia)	483, 484
trivittatus (Cordylosaurus) ...	482
tropidogaster (Zonurus) 467, 468, 495	
Tropidonotus	501, 502
Tropidosaura	473, 475
tuberilinguis (Rappia)	530, 531
TYPHLOPIDEÆ	496
Typhlops	497
Typhlosaurus	490
typicus (Gerrhosaurus)	480
typus (Dispholidus)	502, 515

U

undata (Eremias)	476, 477
undulata (Rappia)	530, 531

V

	PAGE
validus (Gerrhosaurus)	480
VARANIDÆ	455, 470
Varanus	470
varia (Mabuia)	483, 485
variegatum (Homalosoma)	509
ventralis (Chamæleon)	491, 492
vermis (Typhlosaurus)	490
vertebralis (Bufo)	536, 537
verticalis (Typhlops)	497
violacea (Amphisbæna)	471, 472
<i>Vipera</i>	517
VIPERIDÆ	496, 521
vittifer (Zonurus)	468

W

wahlbergii (Ablepharus)	486
wahlbergii (Arthroleptis)	529
wahlbergii (Colopus)	463
wahlbergii (Homopholis)	459
wahlbergii (Mabuia)	485
warreni (Zonurus)	467, 468
warreni (Calamelaps)	516
wealii (Cassina)	532
weberi (Pachydactylus)	460, 461
weberi (Sepsina)	488, 489
whytii (Arthroleptis)	529

Z

ZONURIDÆ	455, 466
Zonurus	467

INDEX TO NEW SOUTH AFRICAN MICRO-LEPIDOPTERA

A	PAGE	D	PAGE
ADELIDÆ	417	Depressaria	355
ædifica (Melanaria)	364	Diocosma	352
africana (Tortrix)	412	dissoluta (Melasina)	416
Agdistis	347	divitella (Stagmatophora)	357
albogrisea (Chelaria)	371		
amphiloga (Platyptilia)	365	E	
Amydria	362, 417	ELASCHITIDÆ	357
Anacampsis	351	Encolpotis	352
antichorda (Cosmopteryx)	357	epicentra (Gelechia)	370
antiphracta (Tinea)	362	ethelella (Monopis)	361
aplana (Depressaria)	365	Eucosma?	367
arctocephala (Amydria)	363	EUCOSMIDÆ	367, 412
Aristotelia	369		
astragulotes (Pselnophorus)	366	F	
athleta (Scyrotis)	377	fuscipunctella (Tinea)	361
B		G	
balanopis (Plutella)	376	Gelechia	351, 370, 414
Barbaroscardia	416	GELECHIADÆ	350, 369, 413
basanistis (Stagmatophora)	358	glebata (Hapsifera)	417
Batrachedra	359	Glyphipteryx	375
BLASTOBASIDÆ	372	goochi (Tiquadra)	364
Blastobasis	372	Gracillaria	374
brachyctenis (Melasina)	364	GRACILLARIADÆ	374
		granella (Tinea)	361
C.		Gymnogramma	374, 415
Cacœcia	349, 368	Gyposaris	375
callichroa (Diocosma)	353		
capensana (Tortrix)	349	H	
ceramitis (Diocosma)	353	hæmatella (Hypercallia)	355
cerealella (Litotroga)	351	Hapsifera	417
chalinæa (Pitharca)	416	Harpella	354
chalinitis (Philobota)	355	heliospis (Cacœcia)	349
Chelaria	371	hemicopa (Thranitica)	416
chelonaæ (Criticonoma)	415	Hieroxestis	361
chersophila (Gedechia)	351	Hypercallia	355
chloræma (Scythis)	358		
circophora (Melasina)	364, 379	I	
citrella (Phyllocnistes)	360	incultella (Mesopherna)	365
Coleophora	360	insolens (Eucosma)	367
coniata (Gyposaris)	375	ionephella (Proselena)	350
Coptoproctis	359	Isocrita	372
Cosmopteryx	357	isomima (Parexaula)	356
cotifraga (Lyonetia)	360		
cretifera (Agdistis)	367		
crisecephala (Agdistis)	349		
Criticonoma	415		
crocicapitella (Monopis)	361		
cryphias (Symbatica)	413		

L	PAGE
<i>languida</i> (Coptoproctis).....	359
Laspeyresia	412
<i>leucastis</i> (Tineola).....	361
<i>liberata</i> (Gelechia).....	414
Lyonetia	360

M	PAGE
Megacraspedus	369
<i>megaloptila</i> (Coleophora).....	360
<i>melanastracta</i> (Paltodora).....	413
Melasina	364, 378
Mesopherna	364
<i>metaphracta</i> (Odites).....	354
Monopis	361

N	PAGE
Nemophora	417

O	PAGE
<i>ocnogramma</i> (Laspeyresia)....	412
Odites	354
ECOPHORIDÆ.....	354, 372
<i>œmias</i> (Coptoproctis).....	359
Oinophila	360
<i>oinoscopa</i> (Hieroxestis).....	361
<i>operculella</i> (Phthorimæa).....	352
Opogana	376
<i>oxyspila</i> (Anacamptis).....	351

P	PAGE
Paltodora	413
<i>panaula</i> (Gelechia).....	370
Parexaula	356
<i>pelionella</i> (Tinea).....	361
<i>perietta</i> (Platyptilia).....	411
Phalionadæ	368
Pharmacis	368
<i>phelotris</i> (Gelechia).....	371
Philobota	355, 373
Phyllocnitis	360
Pitharca	416
Platyptilia	365, 411
Plutella	376
PLUTELLIDÆ.....	358, 374, 415
<i>poliodes</i> (Amydria).....	362
Polychrosis	367
<i>prosticta</i> (Gracillaria).....	374
Pselnophorus	366
PTEROPHORIDÆ.....	349, 365
Pterophorus	366
<i>ptilastis</i> (Aristotellia).....	369
<i>purpurea</i> (Tineola).....	377, 416

Q	PAGE
<i>quinqueflava</i> (Oinophila).....	360

R	PAGE
<i>rapida</i> (Amydria).....	363
Rhæoptera	373
<i>rhodoneura</i> (Gymnogramma) ..	374
<i>rutella</i> (Setomorpha).....	362

S	PAGE
<i>scaphopis</i> (Opogana).....	376
<i>scenites</i> (Ypsolophus).....	371
<i>sceptica</i> (Barbaroscardia).....	416
<i>scolopistis</i> (Harpella).....	354
Scyrotis	377
Scythris	358
<i>serica</i> (Megacraspedus).....	369
<i>serpens</i> (Pterophorus).....	366
<i>scsquitertia</i> (Tinea).....	361
Setomorpha	362
<i>sistrophora</i> (Yponomeuta).....	358
Sitotroga	350
<i>spissana</i> (Polychrosis).....	367
Stagmatophora	357
<i>stelucha</i> (Glyphipteryx).....	375
STENOMIDÆ.....	356
Stenoptilia	411
<i>stibarodes</i> (Melasina).....	378
<i>stigmatica</i> (Pharmacis).....	369
<i>stolarcha</i> (Isocrita).....	372
Symbatica	413
<i>symplecta</i> (Tortrix).....	412

T	PAGE
<i>taricheuta</i> (Blastobasis).....	372
<i>tectifera</i> (Chilobota).....	373
Thranitica	416
Tinea	361
TINEIDÆ.....	360, 376
<i>Tineola</i>	361, 377
Tiquadra	364
TORTRICIDÆ.....	349, 368, 412
Tortrix	350, 412
<i>trimeni</i> (Pharmacis).....	368
<i>trisinis</i> (Gelechia).....	351
<i>trophias</i> (Amydria).....	364, 417
<i>turpis</i> (Nemophora).....	417

X	PAGE
<i>xanthoria</i> (Encolpotis).....	352
XYLORYCTIDÆ.....	354

Y	PAGE
Yponomeuta	358
Ypsolophus	371

Z	PAGE
<i>zophodactyla</i> (Stenoptilia)....	411

INDEX OF GENERA.

A		PAGE
Ablabophis, <i>Boul.</i>	503	
Ablepharus, <i>Fitz.</i>	486	
Acanthaclisis, <i>Ramb.</i>	442	
Acanthobracon, <i>Kriechb.</i>	78	
Acontias, <i>Cur.</i>	489	
Acupalpus, <i>Latr.</i>	283	
Agama, <i>Daud.</i>	464	
Agathis, <i>Latr.</i>	37	
Agdistis, <i>Hüb.</i>	367, 349	
Agrilus, <i>Steph.</i>	311	
Alitha, <i>Cam.</i>	28	
Allothea, <i>Cam.</i>	103	
Amblyodipsas, <i>Pet.</i>	515	
Amphisbæna, <i>Linn.</i>	471	
Amplorrhinus, <i>Sm.</i>	511	
Amorphosoma, <i>Cast.</i>	302	
Amydria, <i>Clem.</i>	362, 417	
Anacampsis, <i>Steph.</i>	351	
Anadora, <i>Kerr.</i>	308	
Anaulacus, <i>MacLeay.</i>	289	
Anisodactylus, <i>Dej.</i>	277	
Anisojoppa, <i>Cam.</i>	168	
Anthothrips, <i>Uz.</i>	425	
Antliarrhinus, <i>Sch.</i>	325	
Apanteles, <i>Först.</i>	203	
Aparallactus, <i>Sm.</i>	516	
Aphanisticus, <i>Latr.</i>	314	
Apion, <i>Herbst.</i>	429	
Apopemsis, <i>Sch.</i>	202	
Aporosaura, <i>Boul.</i>	479	
Aristotelia, <i>Hüb.</i>	369	
Arthroleptis, <i>Sm.</i>	529	
Articerodes, <i>Raffr.</i>	421	
Arotes, <i>Gravenh.</i>	130	
Aspidelaps, <i>Sm.</i>	518	
Atractaspis, <i>Sm.</i>	523	
B		
Bacuma, <i>Cam.</i>	68	
Barbaroscardia, <i>Wals.</i>	416	
C		
Bascanus, <i>Péring.</i>	290	
Bassus, <i>Fabr.</i>	131	
Batrachedra, <i>Staint.</i>	359	
Bitis, <i>Gray</i>	522	
Blastobasis, <i>Zeller.</i>	372	
Blepisanis, <i>Thoms.</i>	330	
Boodon, <i>Dum. & Bib.</i>	504	
Brachycerus, <i>Oliv.</i>	315	
Bracon, <i>Fabr.</i>	58	
Bufo, <i>Laur.</i>	536	
C		
Cacoecia, <i>Hüb.</i>	349, 368	
Cacosternum, <i>Boul.</i>	533	
Calamelaps, <i>Günth.</i>	516	
Callispa, <i>Bal.</i>	3	
Caloecus, <i>Péring.</i>	320	
Campoplex, <i>Grav.</i>	93	
Casnonia, <i>Latr.</i>	273	
Cassina, <i>Gir.</i>	532	
Causus, <i>Wagl.</i>	521	
Chalcis, <i>Linn.</i>	205	
Chamæleon, <i>Laur.</i>	491	
Chamæsauro, <i>Sohn.</i>	470	
Chamæstortus, <i>Günth.</i>	511	
Charops, <i>Hölmgr.</i>	92	
Chelaria, <i>Hawarth.</i>	371	
Chelonus, <i>Jur.</i>	33	
Chirindia, <i>Boul.</i>	472	
Chiromantis, <i>Pet.</i>	529	
Chlænienus, <i>Bonell.</i>	285	
Chlorophis, <i>Hall.</i>	507	
Chondrodactylus, <i>Pet.</i>	456	
Cimbus, <i>Sch.</i>	319	
Clytanthus, <i>Thoms.</i>	329	
Coleophora, <i>Hüb.</i>	360	
Colopus, <i>Pet.</i>	463	
Coptoproctis, <i>Zeil.</i>	359	
Coræbus, <i>Cast. & Gor.</i>	301	
Cordylosaurus, <i>Gray.</i>	482	
Coscinia, <i>Dej.</i>	276	

	PAGE
Cosmema, <i>Boh.</i>	271
Cosmopimpla, <i>Cam.</i>	116
Cosmopteryx	357
Costateridus, <i>Péring.</i>	324
Costaterophasis, <i>Péring.</i>	323
Cratocentrus, <i>Cam.</i>	215
Cratognathus, <i>Dej.</i>	280
Creagris, <i>Hag.</i>	445
Criticonoma, <i>Meyr.</i>	415
Croce, <i>McLach.</i>	453
Cryptaulax, <i>Cam.</i>	150
Cryptoblepharus	486
Cryptus, <i>Fab.</i>	136
Crytea, <i>Cam.</i>	171
Ctenochares, <i>Först.</i>	177
Ctenotoma, <i>Cam.</i>	127

D

Dactylispa, <i>Weis.</i>	336
Dasylabris, <i>Radoszk.</i>	387
Dasypteltis, <i>Wagl.</i>	509
Delaulax, <i>Cam.</i>	111
Demostis, <i>Kerr.</i>	305
Dendraspis, <i>Schl.</i>	520
Depressaria, <i>Haw.</i>	355
Diclidispa, <i>Gestr.</i>	337
Diocosma, <i>Meyr.</i>	352
Diorche, <i>MacLeay.</i>	282
Disophrys, <i>Först.</i>	38
Dispholidus, <i>Duv.</i>	515
Distolaca, <i>Bal.</i>	336
Dorcatispa, <i>Weis.</i>	341
Dromica (<i>Dej.</i>)	271

E

Echthromorpha, <i>Holmgr.</i>	110
Elapechis, <i>Boul.</i>	519
Elasmodactylus, <i>Boul.</i>	459
Encolpotis, <i>Meyr.</i>	352
Encyopsidius, <i>Péring.</i>	450
Eremias, <i>Wieg.</i>	476
Eristicus, <i>Westm.</i>	181
Erythrophion, <i>Cam.</i>	87
Erythrosuchus, <i>Broom.</i>	187
Esenga, <i>Cam.</i>	36
Eucosma, <i>Hüb.</i>	367
Eurycentrus, <i>Cam.</i>	218
Euryophion, <i>Cam.</i>	83
Eurytoma, <i>Illig.</i>	222
Evania, <i>Linn.</i>	19
Exephanes, <i>Wesm.</i>	161
Exetastes, <i>Gravenh.</i>	101
Exochus, <i>Gravenh.</i>	131
Exothecus, <i>Wesm.</i>	72

F

Foenatopus, <i>Sm.</i>	18
Fustigerodes, <i>Reit.</i>	422

G

	PAGE
Gasteruption, <i>Latr.</i>	21
Gasthrotheca, <i>Guer.</i>	35
Gelechia, <i>Hüb.</i>	351, 370
Gerrhosaurus, <i>Wieg.</i>	480
Glauconia, <i>Gray.</i>	499
Glyphipteryx, <i>Zell.</i>	375
Glypta, <i>Gravenh.</i>	117
Gonioprymnus, <i>Cam.</i>	126
Gracilaria, <i>Haw.</i>	374
Gymnogramma	374, 415
Gyponyx, <i>Gorh.</i>	197
Gypsosaris, <i>Meyr.</i>	375

H

Hapsifera, <i>Zell.</i>	417
Harpella, <i>Schrank.</i>	354
Heleophryne, <i>Scl.</i>	535
Hemidactylus, <i>Gray.</i>	458
Hemisus, <i>Günth.</i>	535
Henicophatnus, <i>Kriechb.</i>	166
Henicospilus, <i>Steph.</i>	81
Herpetosaura, <i>Pet.</i>	488
Hieroxestis, <i>Meyr.</i>	361
Holcopimpla, <i>Cam.</i>	112
Homalosoma, <i>Wagl.</i>	509
Homophilis, <i>Boul.</i>	459
Homorelaps, <i>Jan.</i>	520
Hydrus, <i>Schn.</i>	517
Hylambates, <i>Dun. & Beb.</i>	532
Hypercallia, <i>Steph.</i>	355
Hypolithus, <i>Dej.</i>	277
Hypsolophus, <i>Hüb.</i>	371

I

Ichneumon, <i>Linn.</i>	159
Ichnotropis, <i>Pet.</i>	475
Ichthyurus, <i>Westw.</i>	314
Iphiaulax, <i>Foer.</i>	40
Isocrita, <i>Meyr.</i>	372

K

Kamosia, <i>Kerr.</i>	313
Kerremansia, <i>Péring.</i>	309

L

Lachnæa, <i>Lac.</i>	332
Lamprophis, <i>Sm.</i>	503
Larpeletes, <i>Cam.</i>	154
Laspeyresia, <i>Hüb.</i>	412
Latana, <i>Cam.</i>	77
Lebia, <i>Latr.</i>	273
Leptispa, <i>Bal.</i>	332
Leptodira, <i>Günth.</i>	510
Leptophatnus, <i>Cam.</i>	165

	PAGE
<i>Leucospis, Fabr.</i>	204
<i>Lienella, Cam.</i>	155
<i>Limnerium, Ashm.</i>	96
<i>Lissonota, Gravenh.</i>	118
<i>Lycophidium, Dum. & Bebr.</i> ..	505
<i>Lygodactylus, Gray.</i>	458
<i>Lygosoma, Gray.</i>	486
<i>Lyonetia, Hübn.</i>	360

M

<i>Mabuia, Fitzing.</i>	483
<i>Macrelaps, Boul.</i>	516
<i>Macrocentrus, Cam.</i>	30
<i>Macrogaster, Brull.</i>	224
<i>Macrophatnus, Cam.</i>	174
<i>Mastigus, Latr.</i>	297
<i>Megacraspedus, Zell.</i>	369
<i>Megalixalus, Günth.</i>	531
<i>Melanodes, Chd.</i>	289
<i>Melasina, Boisd.</i>	364, 378, 416
<i>Melibæus, Deyr.</i>	302
<i>Mesitomorphus, Péring.</i>	328
<i>Mesopherna, Meyr.</i>	364
<i>Mesostenus, Gravenh.</i>	145
<i>Metaxys, Chd.</i>	290
<i>Methoca, Latr.</i>	409
<i>Metopius, Panz.</i>	132
<i>Minanga, Camer.</i>	30
<i>Monopeltis, Sm.</i>	472
<i>Monopis, Hübn.</i>	361
<i>Mutilla, Fabr.</i>	385
<i>Myrmeleon, Linn.</i>	443
<i>Myrmilla, Wesm.</i>	389

N

<i>Naia, Laur.</i>	517
<i>Nemophora, Hoffm.</i>	417
<i>Nemoptera, Latr.</i>	451
<i>Neotrimorus, D. Torr.</i>	223
<i>Nephoneura, McLachl.</i>	449
<i>Nesiotès, Woll.</i>	321
<i>Nothris, Hübn.</i>	414
<i>Nucras, Gray.</i>	474

O

<i>Œdichirus, Erichs.</i>	297
<i>Œdura, Gray.</i>	458
<i>Odesia, Cam.</i>	79
<i>Oditès, Wals.</i>	354
<i>Odontagrypon, Cam.</i>	90
<i>Odontomutilla, Andr.</i>	391
<i>Oinophila, Steph.</i>	360
<i>Omostropus, Péring.</i>	281
<i>Oneilella, Cam.</i>	141
<i>Onochalcis, Cam.</i>	211
<i>Oodes, Bon.</i>	287
<i>Ophioneura, Cam.</i>	85

<i>Opogona, Zell.</i>	376
<i>Ormyrus, West.</i>	222
<i>Orropygia, Raff.</i>	419
<i>Orycteropus, Geof.</i>	381
<i>Osprynchotus, Spin.</i>	142
<i>Oxyjoppa, Cam.</i>	169

P

<i>Pachydactylus, Wieg.</i>	459
<i>Palpares, Ramb.</i>	433
<i>Palparidius, Péring.</i>	440
<i>Paltodora, Meyr.</i>	413
<i>Panicus, Schr.</i>	101
<i>Panurothrips, Bagn.</i>	427
<i>Paracollyria, Cam.</i>	106
<i>Paradora, Kerr.</i>	304
<i>Parexaula, Meyr.</i>	356
<i>Pelmatogeocho, Aud.</i>	457
<i>Pentarthrophasis, Péring.</i>	326
<i>Pentarthrum, Woll.</i>	327
<i>Perilitus, Nees.</i>	29
<i>Perithous, Holmgr.</i>	109
<i>Phaisura, Cam.</i>	170
<i>Pharmacis, Hübn.</i>	368
<i>Phasganophora, Westrv.</i>	218
<i>Philobota, Meyr.</i>	355, 373, 414
<i>Philothamnus, Sm.</i>	508
<i>Philotymma, Först.</i>	131
<i>Phlocteis, Kerr.</i>	306
<i>Phrynobatrachus, Günth.</i>	528
<i>Phrynomantis, Pet.</i>	533
<i>Phthorimæa, Foerst.</i>	352
<i>Phyllocnistis, Zell.</i>	360
<i>Phyllodactylus, Gray.</i>	457
<i>Pimpla, Fabr.</i>	114
<i>Pimplomorpha, Cam.</i>	95
<i>Pitharca</i>	416
<i>Platylabus, Westm.</i>	177
<i>Platyptilia, Hübn.</i>	365, 411
<i>Platysaurus, Sm.</i>	469
<i>Plesioexochus, Cam.</i>	131
<i>Pleuroneurophion</i>	82
<i>Plutella, Schrank.</i>	376
<i>Pœcilomorpha, Westw.</i>	331
<i>Polyaulacus, Chd.</i>	275
<i>Polychrosis, Rag.</i>	367
<i>Polyhirma, Chd.</i>	275
<i>Proselena, Meyr.</i>	350
<i>Prosymna, Gray.</i>	508
<i>Psammophis, Bois.</i>	512
<i>Psammotherma, Latr.</i>	385
<i>Pselnophorus, Wallgr.</i>	366
<i>Pseudamblyteles, Ashm.</i>	164
<i>Pseudaspis, Cop.</i>	506
<i>Pseudispella, Kraatz.</i>	341
<i>Pseudocordylus, Sm.</i>	469
<i>Ptenopus, Gray.</i>	456
<i>Pterophorus, Geof.</i>	366
<i>Pycnostigmus, Cam.</i>	17

	PAGE
<i>Python, Daud.</i>	500
<i>Pythonodipsas, Günth.</i>	510
<i>Pyxicephalus, Isch.</i>	527

R

<i>Rana, Linn.</i>	525
<i>Rappia, Günth.</i>	530
<i>Rhamphiophis, Pet.</i>	512
<i>Rhampholeon, Günth.</i>	493
<i>Rhinapion, Béq.</i>	431
<i>Rhæoptera, Meyr.</i>	373
<i>Rhogas, Nees.</i>	71
<i>Rhoophilus, Mayr.</i>	17
<i>Rhopalomutilla, Andr.</i>	386
<i>Rhoptropus, Pet.</i>	463
<i>Rhynchexetastes, Cam.</i>	102
<i>Rhynchotrevoria, Cam.</i>	125
<i>Ricrena, Cam.</i>	104
<i>Rossella, Cam.</i>	176

S

<i>Scaptira, Wieg.</i>	478
<i>Scelotes, Fitz.</i>	487
<i>Schizobracon, Cam.</i>	70
<i>Schonlandella, Cam.</i>	39
<i>Seyrotis, Meyr.</i>	377
<i>Seythris, Hübn.</i>	358
<i>Sepedon, Merrem.</i>	518
<i>Sepsina, Bocag.</i>	488
<i>Setomorpha, Zell.</i>	362
<i>Simocephalus, Günth.</i>	506
<i>Sitotroga, Hein.</i>	350
<i>Skeatia, Cam.</i>	153
<i>Somatodes, Sch.</i>	321
<i>Spilochalcis, Thoms.</i>	211
<i>Spilopimpla, Cam.</i>	114
<i>Stagmatophora, H. Sch.</i>	357
<i>Staphylinus, Linn.</i>	296
<i>Stenaulax, Cam.</i>	143
<i>Stenolophus, Dej.</i>	282
<i>Stenomeris, Cam.</i>	154
<i>Stenoptilia, Hübn.</i>	411
<i>Stibulaspis, Cam.</i>	220
<i>Stictophion, Cam.</i>	85
<i>Stigmatium, Gray.</i>	201
<i>Stomatoceras, Kirb.</i>	212
<i>Strophosmus, Sch.</i>	318

	PAGE
<i>Symbatica, Meyr.</i>	413
<i>Systolocranium, Chd.</i>	288

T

<i>Tachys, Sch.</i>	292
<i>Tarbophis, Fleisch.</i>	510
<i>Tefflus, Latr.</i>	284
<i>Telerda, Cam.</i>	75
<i>Telescopus</i>	510
<i>Tetradactylus, Merrem.</i>	481
<i>Thanasimus, Latr.</i>	200
<i>Thelotornis, Sm.</i>	515
<i>Thorictus, Germ.</i>	300
<i>Thranitica</i>	416
<i>Tinea, Fabr.</i>	361
<i>Tineola, H. Sch.</i>	361, 377, 416
<i>Tiquadra, Walk.</i>	364
<i>Tlepolemus, Thoms.</i>	329
<i>Tortrix, Linn.</i>	350, 412
<i>Trechus, Clairv.</i>	291
<i>Trichisia, Mots.</i>	285
<i>Tricholabiodes, Andr.</i>	385
<i>Trichomma, Wesm.</i>	88
<i>Trigastrotheca, Cam.</i>	32
<i>Trimerorhinus, Sm.</i>	511
<i>Tropidonotus, Kuhl.</i>	502
<i>Tropidosaura, Fitz.</i>	475
<i>Typhlops, Schn.</i>	497
<i>Typhlosaurus, Wieg.</i>	490

V

<i>Varanus, Merrem.</i>	470
<i>Vipio, Latr.</i>	59

X

<i>Xanthepialtes, Cam.</i>	118
<i>Xanthepimpla, Sauss.</i>	110
<i>Xenolytus, Först.</i>	154
<i>Xenopus, Wagl.</i>	537

Y

<i>Yponomeuta, Latr.</i>	358
--------------------------------	-----

Z

<i>Zonurus, Merrem.</i>	467
-------------------------------	-----

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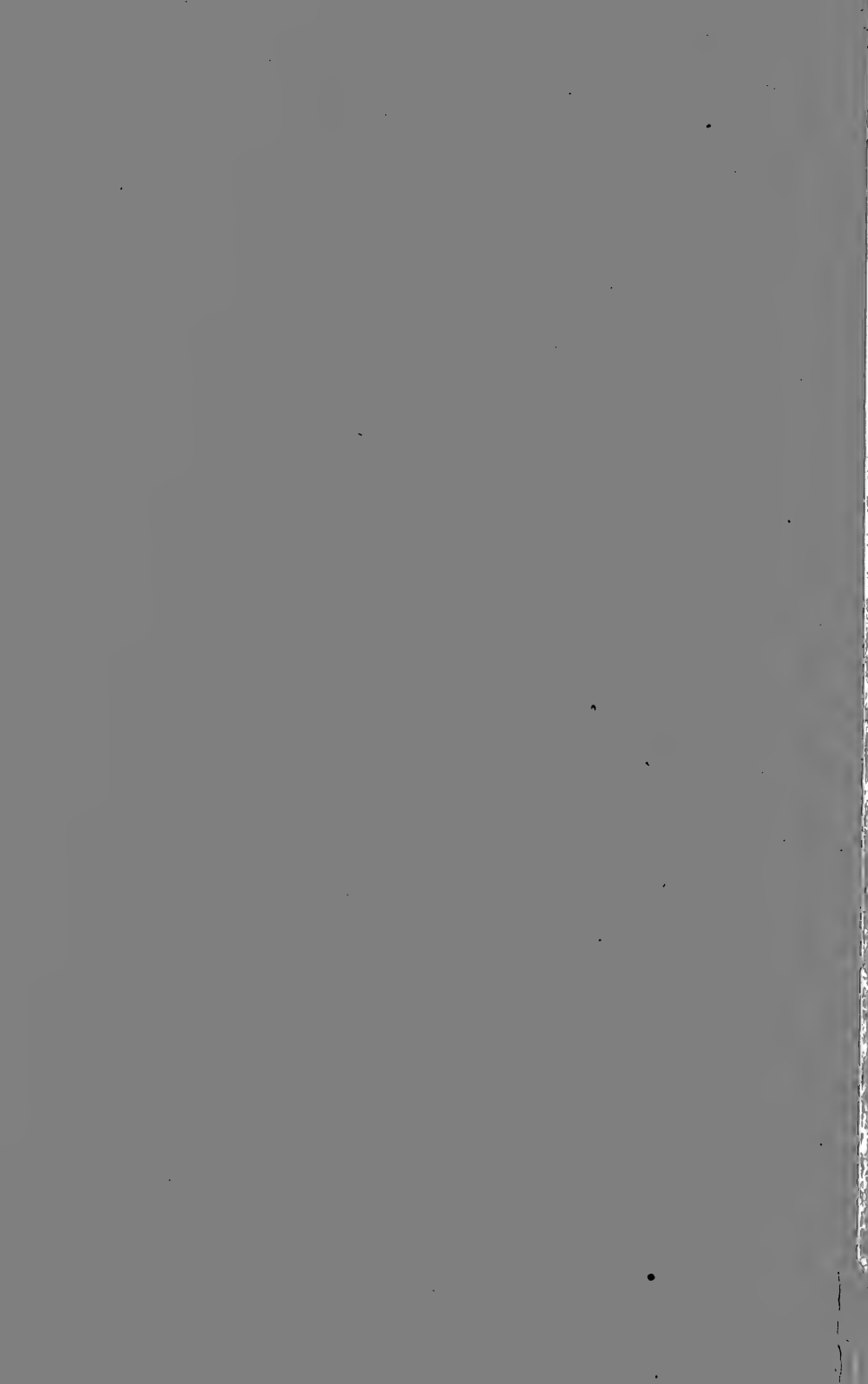
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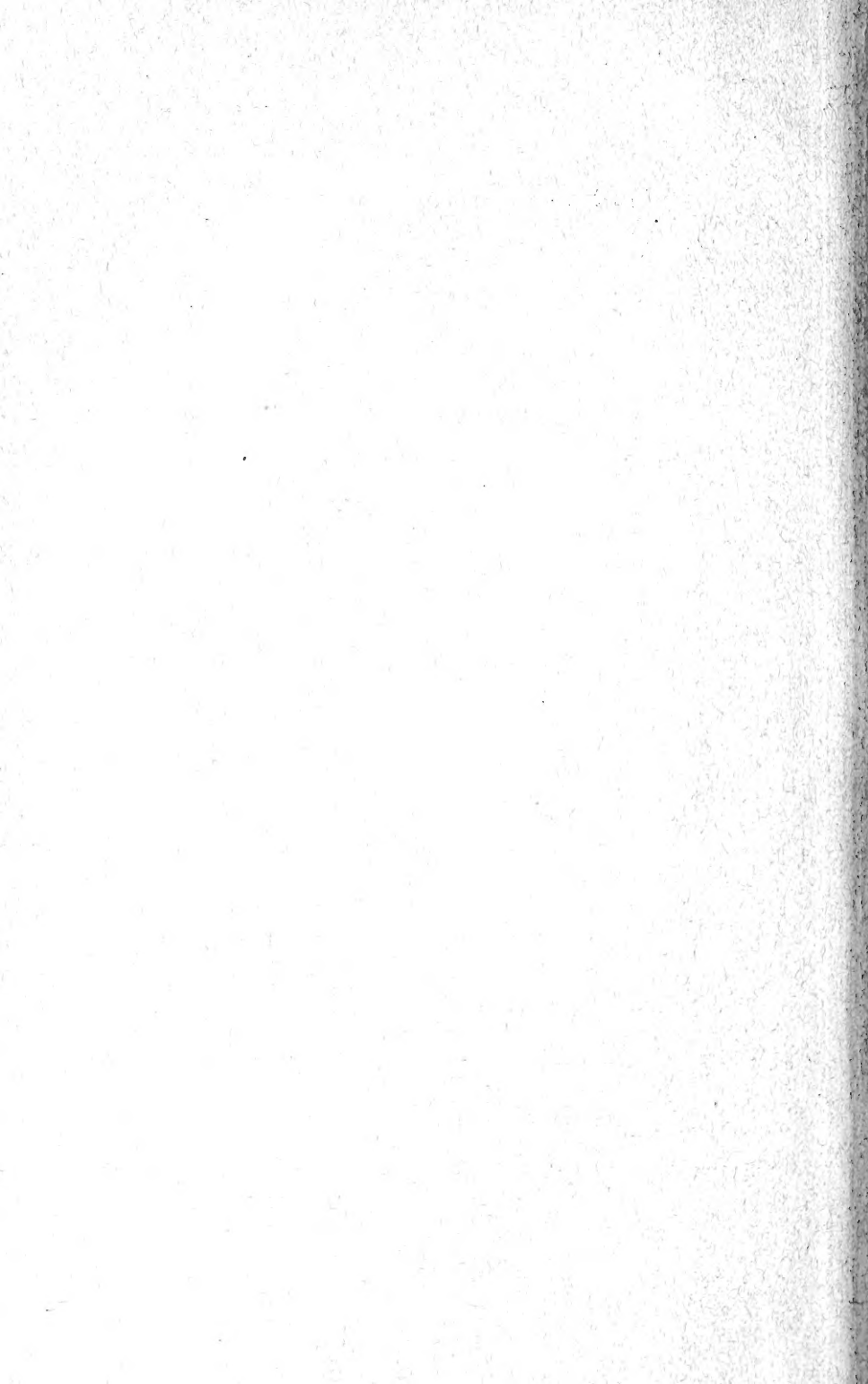
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