

THE SPHEGIDAE OF SOUTH AFRICA

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PART VIII

With 45 Text-figures

THE genus *Belomicroides* was founded by Kohl on a species from Algeria (*Schmiedeknechti*), and was subsequently reduced by the same author to the rank of a subgenus of *Belomicrus*, mainly on the similarity of the venation. This step appears to me to have been erroneous, for apart from the venation there are several other characters, indicated in two new species as well as in the type of the genus, which show that *Belomicroides* is not very closely allied to *Belomicrus*. It is in fact, as is sufficiently indicated by the diagnosis of the generic characters, a genus annectant between the Thyreopinae and the Oxybelinae. The new subgenus of *Belomicrus*, *Brimocelus*, connects it remotely with the Oxybelinae.

As a matter of convenience it has been included in the key to the genera of Oxybelinae on p. 59, but it should be understood that it is distinctly separated from that group.

Genus *BELOMICROIDES* Kohl.

Ann. K.K.N.H. Mus. Wien, XIV, p. 312. 1899.

Konowia, II, Heft 3, 4, p. 180. 1923.

CHARACTERS. Face flat and wide, without prominences or excavations, not wider above than below, the inner orbits of the eyes subparallel, slightly divergent above and below, the facets of equal size. Mandibles acute at the apex, with a blunt angle at about the middle of the inner margin and excised at the middle of the outer margin. Maxillary palpi 6-, labial palpi 4-jointed. Lateral sclerites of the clypeus well developed, not short and almost linear as in *Belomicrus*. Antennae 13-jointed in the ♂, 12-jointed in the ♀; the first joint of the flagellum as long as, or a little longer than the second, the scape not longitudinally carinate in front. Thorax broad and stout. The pronotal

collar short, not sunk far below the level of the mesonotum. Mesothorax with a distinct epicnemium in front, the episternal suture clearly defined. The suture between the mesonotum and scutellum is not dilated laterally. Median portion of the metanotum raised, forming a transverse torus which is concave from side to side, the concavity sloping downwards anteriorly, the lateral edges trenchant. Dorsum of the epinotum without an enclosed median area. Abdomen subovate, the first segment broad, not petiolate or clavate, the tergites without lateral teeth in the ♂, such as are present in *Oxybelus*. The first two tergites are subcarinate along the edge of the dorso-ventral fold, but not sharply flexed as in *Belomicrus*; second to fourth, or only the third and fourth tergites sometimes with transverse grooves at the base, which are villose in the ♂. Pygidial area clearly defined, more or less triangular in the ♀, trapezoidal in the ♂. The sixth sternite or ventral valve of the pygidium in the ♀ is laterally compressed to form a high carina or lamella which is free and rounded at its apex (this character is exhibited in our two species, but may be absent in *Schmiedeknechti* since it is not mentioned in the description of that species). Tibiae spinose, the last tarsal joint not enlarged. Venation similar to that of *Belomicrus*, but the distal portion of the cubital vein and the first recurrent vein are continuous, *i.e.* they form no angle at their junction. The single cubital cell, which really represents two cubital cells merged into one, is separated from the first discoidal only by a very faint *vena spuria*. The radial cell is not appendiculate.

Type of genus, *B. Schmiedeknechti* Kohl.

B. pictus n.sp. (figs. 1, 1a and b).

♂. 5 mm. long. Black; apex of the mandibles ferruginous, the rest ochreous. Anterior tibiae and tarsi, the apices of the femora, extreme base of the middle and hind tibiae, pronotal tubercles and the tegulae, pale yellow. Middle tibiae reddish yellow, darker basally; the apex of the hind tibiae and the middle and hind tarsi more or less pale ferruginous, the metatarsi brown. Face with a short and dull silvery pubescence, the rest of the body with a sparse, short and whitish pubescence, nowhere conspicuous and almost absent from the dorsum of the epinotum. Median area of the clypeus slightly shining, sparsely punctured in front, more finely so behind, moderately convex, somewhat produced, its anterior margin convex, slightly thickened, the anterior angles rectangular. Face dull, densely and finely punctured, the vertex a little more strongly and less closely punctured and slightly shining, the temples closely, finely and shallowly punctured.

A shallow impressed line extends from the posterior ocelli almost to the margin of the eyes. Sides of pronotum feebly rugulose and shining, the rest of the thorax dull. Collar of pronotum and the mesothorax closely and fairly finely punctured, the mesonotum with traces of longitudinal striae between the punctures. Dorsum of epinotum very finely reticulate-punctate, with longitudinal rugae superimposed; these radiate outwards from the base and fade out before reaching the lateral and posterior margins. Brow of the declivity rounded; the declivity is vertical, very closely and finely punctured and also transversely rugulose. It is marginate at the sides, the margin being continued upwards as a raised line which separates the dorsum of the epinotum sharply from its vertical

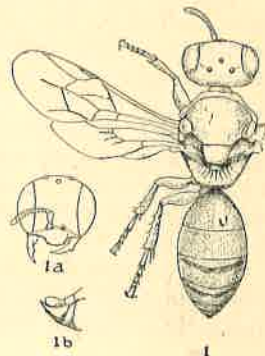


Fig. 1. *Belomicroides pictus*, ♂, a, head; b, apex of abdomen.

sides. The latter are almost microscopically and closely reticulate-punctate. Metapleurae transversely striate. Tergites 1-5 almost dull, the first two shallowly, closely and finely punctured, but on the remaining tergites the sculpture becomes gradually shallower towards the fifth tergite, with the punctures wide apart. Sixth tergite sparsely and coarsely punctured; pygidial area shining, sparsely and shallowly punctured. The third and fourth tergites, just a little beyond the base, are deeply and transversely grooved, the grooves slightly interrupted in the middle and covered with a dense, brown and velvety pile. The grooves do not reach the lateral margins of the tergites. Sternites shining, the first finely and not closely punctured, the rest more coarsely and more sparsely punctured, chiefly on their apical halves.

Median area of clypeus about as long as wide. The mandibles have several long hairs on their outer margin. Scapes short, twice as long as wide at the apex and twice as long as the first joint of the flagellum. The latter is as long as wide and nearly twice as long as the second joint. The second to eleventh joints wider than long, the last joint rounded apically and half as long again as wide at the base.

Face fairly flat, about as wide above as below, the inner orbits of the eyes slightly divergent above and below. The ocelli are arranged in a low isosceles triangle, the posterior pair twice as far from each other as they are from the eyes and from the anterior ocellus. Temples, when viewed from the side, about as wide as the eyes. Pronotal collar a little lower than the mesonotum, the anterior corners widely rounded. Mesonotum twice as long as the scutellum, the latter moderately narrowed posteriorly. The median area of the metanotum is raised, transversely excavated, the surface sloping forwards, forming a more or less saddle-shaped tubercle or torus which is vertical posteriorly and slopes outwards at the sides. The dorsum of the epinotum is short, about two and a half times wider at the apex than long in the middle. Middle and hind tibiae with two rows of whitish spines on the outer margin. Middle tibiae with a strong spur, half as long as the metatarsus; hind tibiae with two spurs, the inner one two-thirds as long as the metatarsus. Wings hyaline; stigma and veins pale brown. Radial cell narrowly truncate at the apex; the second abscissa of the radius is about two and a half times longer than the first. The anterior coxae are angularly dilated outwardly at the base. Mesopleurae without a transverse ridge in front of the middle pair of coxae.

♀. 5 mm. long. The colour in this sex is doubtless very variable; the following is the description of the type, which differs noticeably in colour from two ♀ specimens from Rhodesia, described farther on.

Mandibles excepting their ferruginous apices, median area of the clypeus and the scapes, pale yellow; the flagellum blackish above and ochreous below; the rest of the head black. Pronotal collar and tubercles, a spot on the inside of the tegulae, and disc of the metanotum, pale lemon yellow, the rest of the thorax black. Abdomen ferruginous. Anterior and middle coxae, trochanters, femora and tibiae lemon yellow, the femora with a blackish streak behind, the tibiae somewhat ochreous apically. Anterior tarsi pale ochreous, middle and hind tarsi pale fusco-ferruginous with the apical joint paler. Posterior coxae black, yellow at the apex, the trochanters black, the femora blackish with a yellow streak over the apical two-thirds of the outside. Posterior tibiae fusco-ferruginous, dirty yellow outwardly. Wings milky hyaline, the veins and stigma pale ochreous, the costa and radius slightly darker. The sculpture is like that of the ♂, but a shade shallower and closer, especially on the head and abdomen; the median area of the clypeus, however, is smooth and shining, and the sternites are almost impunctate, except the second which is very finely and fairly distantly punctured. The pubescence is like that of

the other sex, but the margin between the temples and ventral surface of the head has a row of long, exserted and whitish hairs. The tergites are simple, the third and fourth lacking the transverse villose grooves which are present in the ♂. The inner margins of the eyes are parallel for the greater part, only the lower fifth being slightly divergent. Second joint of the flagellum a little longer than wide at the apex, the third as long as wide, the fourth to tenth wider than long, the apical joint a little longer than wide. Sixth sternite with a median longitudinal carina which rises posteriorly to form a strong lamella, rounded and free at its apex. Pygidial area shining, sparsely and coarsely punctured, slightly narrowed in its apical third, longer than wide at the base, the apex narrowly truncate. The anterior metatarsi have their lower apical angle produced forwards, and the outer margin has a row of six long hairs, with a few shorter ones in between. Otherwise like the ♂.

Two ♀♀ taken at Sawmills, S.R., differ from the type as follows. Femora and tibiae yellow, with a reddish longitudinal streak on the inner side. The posterior coxae black only over the basal fourth. Pronotum lemon yellow, black only in the middle of the neck and of the anterior face of the collar; prosterna yellowish behind. Mesonotum with an elongate triangular yellow mark at the anterior angles. The scutellum, except its anterior margin, lemon yellow. Mesopleurae entirely lemon yellow in front of the episternal suture, behind it yellow in the middle with the upper and lower fourth black. The extreme apical margins of tergites 1-5 depressed and hyaline, behind which the apical third of the segments is chrome yellow, the rest ferruginous and the first three irregularly suffused with black in the middle. Sternites 1-3 blackish, their apical thirds yellow, the remaining sternites ferruginous. The epinotal dorsum has shorter rugae than in the type, barely reaching the middle of the segment.

Apart from sexual differences, the structure of the ♂ and ♀ shows the closest resemblance. The colour, however, is totally different and I would have hesitated on that account in uniting the two under one species in view of the fact that they were taken in localities as far apart as Ceres and Willowmore. However, the occurrence of the two sexes at Sawmills, S.R., in situations not more than half a mile apart, seems to justify the association. 1 ♂, Willowmore, December, type in coll. Dr H. Brauns; 1 ♀, Ceres, December (R. E. Turner), type in Brit. Mus. coll.; 8 ♂♂, Sawmills, December (G. Arnold), flying round a small tuft of grass, and 2 ♀♀, Sawmills, January (R. H. R. Stevenson).

(R.M. and T.M. colls.)

B. Marleyi n.sp.

♀. 6.8 mm. long. Black; scapes, pronotal collar excepting the lateral angles posteriorly, pronotal tubercles, tegulae, scutellum and disc of the metanotum excepting their lateral and anterior margins, ochreous. Flagellum brown above, ochreous below. Anterior tibiae brownish ochreous, somewhat darker below. Anterior femora at the base and apex and a spot underneath near the apex, the middle femora excepting the base on the under side, the extreme base of the middle tibiae, a streak on the upper margin of the hind tibiae and a spot on the under side of the hind femora near the apex, reddish ochreous. Otherwise the tibiae and femora are very dark brown. Tarsi brownish, with the apical joints ochreous. Spines on the legs whitish, the calcaria ochreous. Wings hyaline, veins and stigma brownish yellow. Pygidial area fusco-ferruginous on the apical half. Clypeus and lower half of the face with a fairly dense yellowish pubescence. Vertex, occiput and temples with a scantier pubescence of yellowish grey colour, the lower margin of the temples

and of the mandibles with a row of long, exerted and yellowish hairs. Mesothorax, legs and abdomen with yellowish grey pubescence, the apical margins of the sternites and the sides of the pygidium with longer and outstanding hairs. Head and pro-mesothorax dull, closely and finely punctured, the median area of the clypeus somewhat shining and with the puncturation obliterated. Sides of epinotum dull, closely transversely striolate, the declivity transversely rugose, the dorsum strongly rugose from the base to the brow of the declivity, the rugae divergent from the base, the spaces between them microscopically coriaceous. The scutellum is not more strongly punctured than the mesonotum, but it shows a faint longitudinal striation in addition, the punctures lying between the striae. Abdomen moderately shining, the first two tergites microscopically and transversely rugulose, the third and fourth sparsely and finely punctured, the fifth a little more strongly punctured, the pygidium strongly and closely punctured, subtriangular, the apex truncate, the sides concave over the apical two-thirds. The ventral valve of the pygidium is laterally compressed and raised into a high lamella which is rounded at its apex; it is not quite so strongly compressed as in *B. pictus*. The second and third tergites are transversely grooved at the base, the grooves widened in the middle, smooth and without pubescence. Clypeus similar to that of *B. pictus*, but the median area is less produced, so that the lateral sclerites are almost as long as the median. First three joints of the flagellum subequal, a little longer than wide, the apical joint as long as the two preceding united, the other joints a little wider than long. The structure of the thorax and legs is like that of *B. pictus* ♀, but the anterior femora are very thick and acutely triangular in cross-section over the basal half. The anterior metatarsi have nine long and short spines on the outer margin.

Durban, December (W. H. Bell-Marley), 1 ♀. Type in Durban Museum.

Subfamily OXYBELINAE

GENERAL CHARACTERS. Radial cell with a small accessory cell, or none at all. The cubital cell is confluent with the discoidal cell, being separated from it only by a barely visible portion of the cubital vein (*vena spuria*). The angle formed by the junction of the transverse cubital vein with the cubitus is acute or rectangular. Face only slightly excavated or not at all. Middle tibiae with one spur. A tarsal comb on the fore legs usually present in the ♀, and sometimes a feeble one in the ♂. Pygidial area distinct in both sexes. Metanotum usually with lateral membranous squamae and the epinotum always with a process in the middle of the dorsum, excepting the genus *Anoxybelus* from Baluchistan.

KEY TO THE GENERA AND SUBGENERA OF OXYBELINAE, INCLUDING *BELOMICROIDES*

- (8) 1. Last tarsal joint not swollen; accessory cell of forewing, if present, very small, so that the radial cell appears lanceolate or acute at the apex. ♂♂ without lateral spines on the tergites.
- (5) 2. Tergites 1-5 (and 6 in the ♂) abruptly folded under at the sides, so that the ventral and dorsal portions of the tergites form a sharp edge at their junction: the sternites are flat. Disc of metanotum nearly always with lateral squamae, the dorsum of the epinotum armed with a median process. A tarsal comb usually present in the ♀ but absent in the ♂.
- (4) 3. Flagellum short, the joints, excepting the first two and last, as wide as, or wider than long; mandibles edentate on the inner margin or with a dentiform angle at about the middle, the upper margin not dilated

- outwardly in the middle. Surface of body usually dull, the puncturation fairly fine. genus *Belomicrus* s.lat. Ach. Costa
- (3) 4. Flagellum long, the first five or six and the apical joints longer than wide, the rest as long as wide. Mandibles with a very large tooth at the basal third of the inner margin; the outer margin dilated above at about the middle and the basal third arcuately emarginate. Puncturation sparse and coarse, the surface shining. *Belomicrus*, subgenus *Nototis* Arnold
- (2) 5. Tergites not sharply folded under at the sides, the sternites not flat. No distinct tarsal comb present in either sex.
- (7) 6. Disc of metanotum large, subquadrangular, concave transversely, the lateral margins and the posterior angles raised but not furnished with distinct squamae; epinotum with a mucro, the dorsum of the epinotum strongly sculptured. *Belomicrus*, subgenus *Brimocelus* Arnold
- (6) 7. Disc of metanotum small, forming a small segment of a circle, its lateral margins raised, somewhat saddle-shaped; epinotum without a process of any sort, the dorsum feebly sculptured (♀ with a high and lamelliform carina on the sixth sternite; ♂ with transverse villose grooves near the base of the third and fourth tergites). genus *Belomicroides* Kohl
- (1) 8. Last tarsal joint swollen (third to sixth tergites simple, not sharply folded under at the sides, the sternites not flat). Second to sixth tergites in the ♂ with lateral spines. A tarsal comb present in both sexes. Accessory cell of forewing wider, so that the radial cell is not acute at the apex. Abdomen obconical or cordate. genus *Oxybelus*, s.lat. Latr.

Genus *BELOMICRUS* Ach. Costa.

Ann. Mus. Zool. Napoli, vi, p. 80. 1866.

Oxybeloides Radoszkowski, in Fedtschenko, *Reise in Turkestan*, II, p. 68. 1877.
Oxybelomorpha Brauns, *Ann. K.K.N.H. Mus. Wien*, XI, p. 475. 1896.

CHARACTERS. Head as wide as, or wider than the thorax, rarely narrower. Face wide. The eyes reach the base of the mandibles, or very nearly so; they are either regularly elongate-oval or somewhat widened below, in the latter case the facets in the widened portion are larger than the rest. Ocelli arranged in a low isosceles triangle, the posterior pair always nearer to the eyes than they are to each other. An oblique impression between them and the eyes is usually present. As a rule the mandibles are not excised on the outer margin, and their apices are acute; the inner margin edentate or with an angular projection near the middle. Median area of the clypeus more or less produced, in the ♂ without teeth on the anterior margin such as are present in *Oxybelus*. Antennae 13-jointed in the ♂, 12-jointed in the ♀, inserted close to the posterior margin of the clypeus and fairly far apart or at least not contiguous. The joints of the flagellum, excepting the first and last, are at least as wide as long. Pronotum short, the collar not linear, not much lower than the mesonotum. A well-defined epicnemium is present on the mesopleurae, and the episternal suture is distinct. Scutellum usually without a median longitudinal carina, sometimes with angular posterior corners. The postscutellum or metanotum is always produced on the hind margin into a membranous lamella or into lamelliform teeth at the posterior lateral angles. Dorsum of epinotum with a mucro or median process at the base. Pygidial area defined in both sexes, triangular in the ♀, more or less trapezoidal in the ♂.

Forewing. Pterostigma distinct. The transverse cubital vein meets the radius before its middle. The large cubital cell is separated from the discoidal only by a *vena spuria*. Similarly, the second discoidal cell appears to be

obsolete, its boundaries being indicated only by faint traces of veins. The first submedial cell is much longer than the second and ends before the origin of the basal vein.

Hindwing. Radial vein very short, perpendicular to the costa. The retinaculum consists of five to eight hooks. Submedial cell short, ending well before the origin of the cubitus. Basal lobe oval.

Legs spinose; middle coxae far apart and sunk into the sternum. Claws unarmed. Puncturation usually much finer than in *Oxybelus*. In the ♂ there are seven visible sternites.

Nothing appears to be known about the life history of these insects, but it is probable that it is similar to that of *Oxybelus*.

Distribution: Palaearctic, Nearctic and Ethiopian Regions.

KEY TO THE SPECIES OF *BELOMICRUS* s.lat.

- (16) 1. Tergites 1-5, or 1-6 in the ♂, abruptly folded under at the sides, so that the ventral and dorsal portions of the tergites form a sharp edge at their junction; sternites flat.
- (15) 2. Flagellum short, all the joints excepting the first, second and last, as wide as, or wider than long. Mandibles edentate on the inner margin or with a dentiform angle at about the middle, the upper margin not dilated outwardly in the middle. Puncturation fairly fine and close, the surface usually dull.
- (4) 3. Pronotal collar with a subquadrangular median portion which is twice as wide as long and projects far beyond the almost linear side pieces. mirificus Kohl
- (3) 4. Pronotal collar of the usual shape.
- (12) 5. Mandibles excised on the outer margin. species-group *Oxybelomorpha* Brauns
- (11) 6. Epinotal process mucronate.
- (8) 7. Metanotal disc longitudinally carinate in the middle, without freely projecting posterior lobes, the posterior margin minutely excised in the middle. Tergites shining, not closely or finely punctured, the first two ferruginous. Kohli Brauns
- (7) 8. Metanotal disc not carinate in the middle, the lateral squamae projecting posteriorly as free rostriform or pyriform lobes. All the tergites black, or only the apex of the pygidium ferruginous.
- (10) 9. Shoulders of pronotal collar rectangular and almost dentate; pronotal tubercles pale yellow; metanotum between the squamae almost smooth. rhodesianus Arnold
- (9) 10. Shoulders of pronotal collar rounded; pronotal tubercles black; metanotum between the squamae clearly punctured. Turneri Arnold
- (6) 11. Epinotal process trapezoidal, wider at the apex than at the base, the apical margin very obtusely angularly emarginate (first five tergites in the ♀ fusco-ferruginous, with the sides and apical margins ferruginous; black in the ♂). Braunsi Kohl
- (5) 12. Mandibles not excised below on the outer margin. subgenus *Belomicrus* Ach. Costa, s.str.
- (14) 13. Epinotal process mucronate; scutellum as long as wide; metanotal squamae semicircular. Ferrieri Kohl
- (13) 14. Epinotal process canaliculate, the apical margin transverse and wider than the base; scutellum twice as wide as long; metanotal squamae bilobate posteriorly, the outer lobe rostrate. sordidus Arnold
- (2) 15. Flagellum long, the first six and the apical joints longer than wide, the rest as long as wide. Mandibles with a very large tooth at the basal third of the inner margin, the outer margin dilated above at about the middle, the basal third arcuately excised. Puncturation

sparse and coarse, the surface shining. Metanotal squamae large and ovate, epinotum with a short and acute mucro; median area of the clypeus bicornuate near the base.

- (1) 16. Tergites not sharply folded under at the sides, the sternites not flat. Disc of metanotum subquadrangular, concave transversely and without lateral squamae; epinotum with a mucro.

subgenus *Brimocelus* Arnold, *radiatus* Arnold

Genus *BELOMICRUS*, subgenus *BRIMOCELUS* subgen. nov.
(anagram, *Belomicrus*).

CHARACTERS. Eyes not widened below, the facets all equal in the ♀, slightly larger on the lower inner half in the ♂. Sculpture very delicate except on the epinotum. Median area of clypeus very much produced. Pronotal collar sunk considerably below the level of the mesonotum. Tergites not constricted at the base, without a sharp edge at the ventral fold. Sternites not flat. Epinotum without a distinctly defined median dorsal area. (Mandibles excised on the outer margin; metanotum with dilated lateral margins but without distinct and free squamae; epinotum with a small mucro.) Otherwise like *Belomicrus*. Type of subgenus, *B. radiatus* Arnold.

B. (Brimocelus) radiatus n.sp. (figs. 2 and 2 a-c).

♀. 3.5 mm. long. Black; first joint of the flagellum brownish above, its lower surface and the whole of the remaining joints ivory white. Tibiae and apices of the femora very pale yellow, the tarsi whitish, the pulvillus black. Apical third of the median area of the clypeus and the mandibles ochreous, the mandibles becoming reddish towards the black apex. Tegulae yellowish white. Wings milky hyaline, the veins pale ochreous. Apical margins of the second and third tergites at the sides, and the whole of the apical margins of the fourth and fifth tergites whitish, and sparsely covered with a white pubescence. Pygidial area blackish basally, flavo-ferruginous over the apical half (in another specimen it is entirely straw-yellow). Clypeus, lower half of the face, lower half of the temples and the mesopleurae with a very scanty, short and whitish pubescence. Otherwise glabrous, excepting the pubescence on the tergites. Head, pro-mesonotum, scutellum and disc of postscutellum shining, almost smooth, the sculpture consisting of a very superficial and microscopic rugulosity, which is chiefly longitudinal. Towards the posterior margin of the mesonotum it is somewhat stronger, forming short striae. The upper half of the head and the mesonotum have a few very shallow and minute punctures. Mesopleurae dull, transversely rugulose, the episternal suture deep; a transverse groove extends from the upper third of the episternal suture almost to the meso-metapleural suture. Metapleurae transversely striate; sides and declivity of the epinotum dull, very finely transversely rugulose and microscopically reticulate-punctate in between the rugae. Lateral portions of the metanotum dull and coriaceous, with a deep fovea on each side

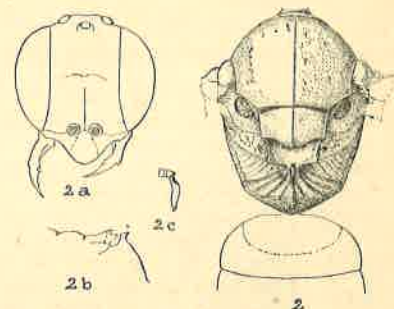


Fig. 2. *Brimocelus radiatus*, ♀, a, head; b, lateral view of posterior half of thorax; c, scape of ♂.

close to the disc. Dorsum of epinotum in greater part dull, finely reticulate, with oblique rugae on the basal part; the apical portion has a high median carina continued from the base of the mucro and four equally strong carinae on each side which radiate fan-wise to a little below the brow of the declivity. The space between the carinae is slightly shining. Tergites almost dull, microscopically alutaceous, also very finely and not closely punctured. Sternites shining, finely rugulose.

Head as long as wide. Inner orbits of the eyes almost parallel, only slightly divergent below. Mandibles excised near the middle of the outer margin, the inner margin with two small teeth near the middle, the apex acute.

Median area of the clypeus much produced, its anterior margin strongly convex; in the middle it has a flattened triangular area the apex of which is continued into a low carina which extends to a little beyond the middle of the face; the lower half of the face feebly concave. Scapes fully half as long as the flagellum; the first joint of the latter subglobose, the second as long as wide, all the rest, excepting the apical joint, longer than wide. Ocellar area raised, the anterior ocellus sunken into a shallow pit. The posterior ocelli are three and a half times as far from each other as they are from the eyes, and twice as far as from the anterior ocellus. Pronotal collar low and short, only just visible when the insect is looked at from above. Mesonotum strongly convex in front. Mesonotum and scutellum with a median longitudinal carina, not easily visible except from a lateral aspect, owing to the polished surface. The suture between the mesonotum and scutellum is widened laterally. Lateral margins of the scutellum slightly convergent behind, ending there in a blunt angle; the hind margin convex. Metanotal disc large, concave transversely, raised upwards towards the posterior lateral angles which are rectangular; the posterior margin is curved obliquely towards the middle, where it is slightly projecting, bluntly bidentate and semicircularly excised between the teeth. Epinotal mucro acute, about one-quarter the length of the scutellum and not reaching the brow of the epinotal declivity. First tergite short, its declivous anterior face deeply hollowed out. Abdomen ovate, widest across the second tergite, the ventral folds of the tergites not sharp at the edge, the sternites convex transversely. Tibiae with fine whitish spines, the anterior metatarsus with irregular long spines which do not form a distinct comb.

♂. 3 mm. long. The yellow colour on the legs darker than in the ♀, and more extensive on the apical part of the femora; the posterior tibiae blackish below and at the sides, the last two or three joints of the tarsi smoky white. Mandibles fusco-flavous, black at the base and apex. Scapes blackish brown, dirty yellow on the inside of the apical third; flagellum blackish above, dirty white below. Tegulae testaceous on the margins, blackish inwardly, the axillary sclerite black.

Apical abdominal segment entirely black. The upper face, vertex and anterior half of the mesonotum have a shallow and sparse puncturation, but nevertheless much less sparse than in the ♀. The temples and sides of the epinotum are very finely reticulate-punctate, and the tergites are more deeply and a little more plentifully punctured than in the ♀. Clypeus less produced in the middle than in the ♀; inner orbits not parallel, slightly divergent above and below. Pygidial area triangular, wider at the base than long, the apex rounded. Otherwise like the ♀.

1 ♀, type, Ceres, C.P., November; 1 ♀, December; 1 ♂, type, Montagu, C.P., October; 1 ♂, Aliwal North, December (R. E. Turner).

Types in Brit. Mus. coll.

Genus *BELOMICRUS*, subgenus *NOTOTIS* subgen. nov.
(*νῶτον* back, *ὠτός* (ὀὶς) ear).

CHARACTERS. Mandibles with a large and acute tooth on the inner margin at about the basal third, the outer margin arcuately excised near the base and dilated outwardly above in the middle. Flagellum long, first six and the apical joints longer than wide. Punctuation sparse and fairly coarse, the surface shining. Metanotal squamae large, auriculate or ovate (shaped like a *Haliotis* shell). Abdomen very flat.

B. (Nototis) bicornutus n.sp. (figs. 3, 3 a and b).

♀. 4.2 mm. long. Black. Mandibles piceous, the middle third reddish yellow. A small transverse streak on the shoulders of the pronotum ivory white, the pronotal tubercles brownish ochreous. Tibiae brownish ochreous at the base, apex and on the outer side, elsewhere brown. Tarsi and extreme apices of the femora brownish ochreous. Metanotal squamae translucent and smoky white, their thickened edges and the apical third of the epinotal mucro, pale straw yellow. Wings hyaline, the veins brown. Clypeus and lower half of the face with a few silvery hairs; vertex, collar of pronotum, scutellum and margins of the metanotal squamae with a scanty, long and brownish yellow pilosity. The lower margins of the femora with a fringe of long thin hairs. Tergites with a scanty, pale brown and outstanding pubescence. The whole body, excepting the dorsum and declivity of the epinotum, is shining.

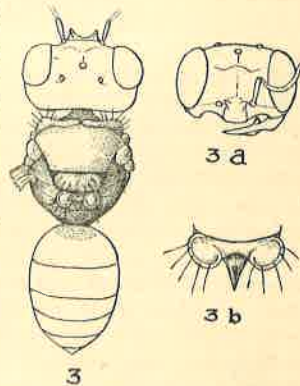


Fig. 3. *Nototis bicornutus*, ♀, a, head; b, metanotum and mucro, more highly magnified.

Sides of the clypeus and of the lower half of the face finely, shallowly and not closely punctured, the median parts smooth and impunctate. Upper half of the face, vertex and occiput coarsely and sparsely punctured, the punctures separated by many times their own diameter and largest near the inner margins of the eyes. Pronotal collar with a few large punctures. Mesonotum and scutellum polished, more sparsely punctured than the vertex, the scutellum shallowly impressed lengthwise in the middle. Mesopleurae almost impunctate. Lower half of the metapleurae and sides of the epinotum obliquely striolate. Dorsum and declivity of the epinotum irregularly rugose, the declivity somewhat reticulate rugose, with a median, shining and triangular fovea. Tergites very sparsely and irregularly punctured, the punctures of unequal size and not coarser on the first tergite than on the rest. Sternites smooth and impunctate. Head large, wider than long, somewhat wider than the thorax; the occiput and temples are well developed, the latter, viewed from the side, almost as wide as the eyes. Median area of the clypeus slightly produced, subquadrate, raised, the anterior margin transverse, armed on each side a little behind the middle with a transversely compressed, triangular and porrect horn. They are divergent and blunt at the apex. Scapes fairly long, as long as the first four joints of the flagellum, the first six joints and the apical joint longer than wide. Inner orbits slightly divergent above and below, the facets of the eyes of equal size. Ocelli arranged in a low isosceles triangle, the posterior pair twice as far from the anterior ocellus as they are from the eyes, their distance from the latter being equal to about one and a

half times their own diameter. Pronotal collar slightly below the level of the mesonotum, longer at the shoulders than in the middle, where it is impressed; the shoulders are rounded. Pronotal tubercles very prominent. Mesonotum twice as wide across the tegulae as long in the middle, and twice as long as the scutellum; the latter without raised lateral margins, impressed lengthwise in the middle. Metanotal squamae raised outwardly. Epinotal mucro short, acute, deeply excavated, directed obliquely upwards. Dorsum of epinotum not clearly delimited from the declivity. Tergites 1-5 much wider than long. Pygidial area triangular. Legs thin, the tibiae with thin spines on the upper surface, the anterior metatarsi feebly spinose and pubescent, but without a comb.

Thirty-eight miles east of Ceres, Little Karroo, November, 1 ♀ (R. E. Turner).

Type in the Brit. Mus. coll.

B. (Oxybelomorpha) rhodesianus n.sp. (figs. 4 and 4 a).

♀. 4.5 mm. long. Black; the following parts very pale yellow or yellowish white: the scapes excepting a brownish spot behind below the middle, the mandibles excepting the ferruginous apex, pronotal tubercles, all the tibiae, metatarsi and apices of the fore and middle femora. Tarsi pale brownish. The anterior and lateral margins of the metanotum, margins of the tegulae, a small spot on the metapleurae under the wings, a median longitudinal streak on the otherwise transparent and colourless metanotal squamae, and the epinotal mucro, pale yellow. Apex of the pygidial area dark reddish brown; the apical margins of the abdominal segments narrowly testaceous. First seven or eight joints of the flagellum dirty yellow below, brown above. Anterior margin of the clypeus ochreous. Wings hyaline, the veins dark brown.

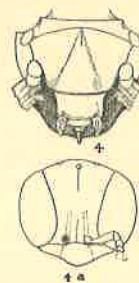


Fig. 4. *Belomicrus rhodesianus*, ♀, thorax; a, head.

Clypeus, face, temples and mesopleurae clothed with a short silvery pubescence; the rest of the head, pro-mesonotum and tergites with a thin whitish pilosity, a little more abundant on the tergites where it forms apical lateral fasciae. Median area of the clypeus smooth and shining. Lower face slightly concave, finely punctured and dull, excepting two longitudinal smooth and shining streaks on each side of the middle. Upper face, temples and vertex deeply and closely punctured, less closely and more strongly on the vertex than elsewhere, the depressed space between the eyes and posterior ocelli shining and sparsely punctured. Pronotal collar dull, finely and closely punctured above, the anterior and nearly vertical face closely striato-punctate. Epicnemium dull, closely and very finely punctured. Mesonotum, mesopleurae and scutellum dull, closely and fairly strongly punctured, the spaces between the punctures about as wide as the punctures and on the scutellum raised into ill-defined longitudinal rugae. Metapleurae finely and transversely striated. Epinotum dull, very finely reticulate-punctate, with a few rugae superimposed on the sides behind, on the dorsum and the declivity. The median portion of the metanotum, between the squamae, smooth and shining. Abdomen strongly and closely punctured above, slightly shining between the punctures, which become a little smaller towards the apex of the abdomen. The ventral surface is smooth and shining, with a few very shallow punctures, the fifth sternite more strongly punctured towards the apical margin. Pygidial area triangular, wider at the base than long, the apex rounded, strongly rugoso-punctate.

Median area of the clypeus wider than long, with a flattened median triangular area the base of which is towards the rounded anterior margin. The face is narrowest well below the middle, at a point a little above the level of the antennal sockets. Scapes three times longer than wide at the apex, the first joint of the flagellum as long as wide at the apex, barely longer than the second which is also as long as wide; the remaining joints, excepting the last, wider than long. Posterior ocelli a little nearer to the eyes than they are to the anterior ocellus, two and a half times farther from each other than they are from the eyes. Temples wide above, rapidly narrowed below. Head a little narrower than the thorax; the latter is very wide across the mesonotum and is a little wider than long. Shoulders of pronotal collar rectangular and almost dentate; the dorsal face of the collar is shortest in the middle. Epinotum very large, its outer margin forming a sharp angle with the rest of the mesopleurae. The pronotal tubercles are flattened in front. Mesonotum two-thirds wider than long, triangularly and shallowly excavated in the middle, the base of the triangle on the hind margin and the apex reaching the anterior margin. Scutellum transverse, not quite twice as wide as long, almost parallel-sided, the posterior corners bluntly dentate, not carinate lengthwise in the middle. Metanotal squamae longer than wide, narrowed apically and incurved, wide apart, the distance between them being equal to the length of the scutellum. Epinotal process gutter-shaped, narrowed towards the blunt apex, the free part being about three times longer than wide at the base. Dorsum of the epinotum shorter than the median process.

First tergite feebly impressed lengthwise just above the declivous base. Second abscissa of the radius of the forewing two-thirds longer than the first.

♂. 3.5-4 mm. long. Scapes entirely pale yellow, tarsi pale straw-yellow, the last two joints slightly brown. Punctuation of the tergites stronger than in the ♀, especially on the sixth and seventh, which are very coarsely punctured; the seventh is trapezoidal, the apical half ferruginous. Otherwise like the ♀.

Sawmills, S.R., April (G. Arnold); 1 ♀, 16 ♂♂. (T.M. and R.M. colls., the types in the latter.)

B. (Oxybelomorpha) Turneri n.sp. (figs. 5 and 5 a).

♀. 4.7 mm. long. Black; mandibles dirty yellow, the apex reddish brown; scapes yellow at the apex in front; anterior and middle tibiae stramineous above, fuscous below, the posterior tibiae black, with the basal third above stramineous. Anterior tarsi brownish yellow, the middle and posterior tarsi brown. Tegulae and apical margins of the abdominal segments fusco-testaceous. Face and clypeus with a sparse silvery pubescence, temples and mesopleurae with a few short white hairs, abdomen above with a very short brownish grey pubescence.

Median area of the clypeus raised, with a flattened and smooth triangular space in the middle, the apex of which reaches to the level of the antennal sockets, the anterior margin moderately convex and having on each side an ill-defined angle. The rest of the clypeus is dull, very finely rugoso-punctate. Lower half of the face smooth and shining, excepting the sides and a triangular area at the base which are finely punctured. Upper part of the face, vertex and temples sharply and fairly closely punctured, the punctures increasing in size and distance apart posteriorly; the spaces between the punctures somewhat shining. A

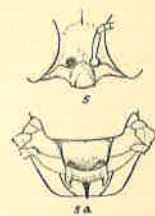


Fig. 5. *Belomicrus Turneri*, ♀, lower half of face; a, posterior half of thorax.

sharply impressed line extends from the anterior ocellus to the top of the smooth median area on the face. Between the posterior ocelli and the eyes the vertex is a little depressed and more sparsely punctured than elsewhere. Collar of pronotum closely and finely punctured, almost dull. The epicnemium has a greasy lustre and is finely punctate-aciculate. Mesonotum and scutellum a little more strongly and more closely punctured than the vertex, moderately shining. Mesopleurae more strongly and much less closely punctured than the mesonotum, the episternal suture shallow; from the base of the latter a shallow groove extends to the base of the metapleurae. The mesopleurae are marginate all round. Metanotum shining, sparsely and very finely punctured. Metapleurae shining, strongly and transversely striate. Sides of epinotum nearly dull, closely and superficially rugoso-striate. Dorsum of epinotum and the declivity finely reticulate-punctate, the lateral areas of the dorsum and the whole of the declivity nitidulous and with transverse rugae superimposed; the median area dull and distinctly marginate. The declivity has a pyriform fovea below the brow. Tergites evenly and fairly closely punctured, rather strongly on the first and second where the puncturation is a little weaker than on the sides of the vertex, more feebly punctured on the three following segments, the pygidial area coarsely and sparsely punctured. The reflected margins of the tergites and the sternites are shining, very shallowly and finely punctured. Eyes divergent above and below, the interocular distance on the vertex equal to the length of the flagellum, and across the middle of the face equal to the length of the first six joints of the flagellum. The first joint of the flagellum is a trifle longer than wide, the second shorter than the first, as long as its apical width and as long as the third, the third to tenth distinctly wider than long. The distance between the posterior ocelli is twice as great as their distance from the eyes. Vertex large, its posterior lateral angles (upper part of the temples) widely rounded, the posterior margin of the head distinctly concave. Seen from the side, the temples at their widest are nearly as wide as the eyes. Pronotal collar very short, convex lengthwise and transversely, the shoulders rounded, impressed in the middle, the impression continued over the anterior third of the mesonotum. The latter is fully half as wide again across the tegulae as long in the middle. Scutellum marginate at the sides, transversely oblong, the posterior angles produced into short triangular teeth, the hind margin convex in the middle and concave on each side near the teeth.

Metanotum with the posterior half strongly declivous, the squamae on each side rostriform, their free apices about one-third of their whole length. Epinotal mucro short, elongate triangular, deeply excavated, subacute at the apex, about as long as the metanotal squamae. Abdomen oblongo-ovate, about half as long again as wide in the middle, the second to fifth segments much wider than long. Pygidial area triangular, as long as wide at the base, the apex rounded. Second abscissa of the radius almost twice as long as the first.

♂. 4.5 mm. long. The yellow spot on the scape larger than in the ♀, and like the yellow on the legs, of a brighter tint (lemon yellow) than in the ♀. Mesonotum and scutellum more strongly punctured than in the ♀. The apex of the mucro is feebly indented. Seventh tergite triangular, the apex widely truncate, the apical ventral valve feebly arcuately emarginate. Otherwise like the ♀.

Ceres, C.P., November (R. E. Turner), 16 ♀♀, 1 ♂. Types in the Brit. Mus. coll.

B. (Oxybelomorpha) Kohli Brauns (figs. 6, 6 a and b). *Ann. K.K.N.H. Mus. Wien*, xi, p. 475 (genus only). 1896. Kohl, *Konowia*, II, p. 184, ♀. 1923.

♀. 8.5 mm. long. Head and thorax black; mandibles excepting their black apices, and the base of the tegulae ferruginous. Pronotal tubercles and the posterior lateral angles of the metanotal disc, pale lemon yellow. First two abdominal segments above dark red, the rest piceous or black, with the apical margins fusco-ferruginous, the ventral surface piceous with brownish red apical margins to the segments. Femora black, the anterior tibiae and tarsi ferruginous, the former with a small flavous spot at the base. Middle and hind tibiae and tarsi reddish brown, the middle tibiae with a small flavous spot at the base, the posterior tibiae with a longitudinal streak of the same colour along the whole outer margin.

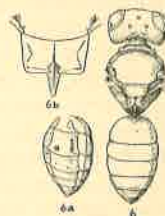


Fig. 6. *Belomicrus Kohli*, ♀; a, ventral view of abdomen; b, metanotum and mucro more highly enlarged.

Clypeus and lower half of the face clothed with short silvery pubescence, excepting a triangular area on the middle of the clypeus and two elongate triangular areas above the antennal sockets which are glabrous and shining.

The rest of the head has a sparse greyish pubescence. The thorax is almost glabrous, and the first five tergites have apical bands of dull silvery pubescence which are widely interrupted in the middle. Head dull, closely and strongly punctured, the punctures becoming larger and wider apart on the vertex and round the ocelli. Pronotum very finely and closely punctured, the wide epicnemium shining and almost smooth, the mesonotum, mesopleurae and scutellum strongly and fairly closely punctured, with faint traces of longitudinal rugae superimposed. Metanotal plate smooth and shining. Epinotum dull and obliquely striato-rugose above, irregularly rugose at the sides. Abdomen nitidulous, strongly and fairly closely punctured, the punctures largest on the basal segment, the apical margins of the segments closely and finely punctured, the pygidial area very coarsely punctured. Sternites slightly shining and punctulate. Outer margin of the mandibles excised near the middle, the inner margin with a very blunt tooth at about the middle. Anterior margin of the clypeus moderately convex, the median area raised posteriorly and with a triangular, smooth and flattened area in the middle. Antennae short, inserted close to the posterior margin of the clypeus, all the joints of the flagellum, excepting the first three and last, wider than long, the others a little longer than, or as long as wide. Eyes divergent above, the interocular distance on the vertex equal to about twice the length of the scape. The face is narrowest below the middle. Posterior ocelli nearly twice as far from each other as they are from the anterior ocellus, and nearly three times as far from each other as they are from the eyes. Vertex, occiput and temples large. Seen from the side the temples are as wide as the eyes at the middle, but are rapidly narrowed below that point. Collar of pronotum vertical in front, almost linear above, the shoulders dentate. Scutellum marginate at the sides, the raised margins ending posteriorly in a small tooth. Metanotal disc quadrangular, twice as wide as long, the sides reflected upwards, the posterior margin deeply excised in the middle, carinate longitudinally from the base to the apex of the excision, and transversely carinate on each side of the excision just in front of its posterior margin.

The epinotum has a short and narrow mucro which is hollowed out above, acute at the apex and twice as long as wide at the base. Abdomen

ovate, moderately convex transversely above; pygidial area wider at the base than long in the middle, rounded at the apex.

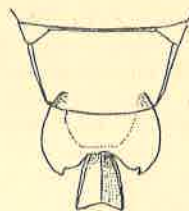
Port Elizabeth (Dr H. Brauns). Type in coll Brauns.

B. (Oxybelomorpha) Braunsi Kohl (fig. 7). *Konowia*, II, p. 186, ♀, ♂. 1923.

♀. 5-6 mm. long. Black; basal half of the mandibles, pronotal tubercles, the inner half or less of the otherwise yellowish hyaline metanotal squamae, pale straw-yellow. Tergites ferruginous, the first five more or less fusco-ferruginous in the middle. Sternites brownish black. Tibiae pale yellow on the outer sides, the first pair reddish ochreous below, the middle and hind pairs fusco-ferruginous below, the extreme apices of the femora reddish ochreous, the tarsi brown. Tegulae testaceous; wings faintly fusco-hyaline, the veins brown. Anterior margin of the median area of the clypeus ferruginous. Sides of the face and of the clypeus with silvery pubescence. Vertex and occiput with a scanty yellowish pubescence. Tergites with sparse silvery pubescence at the sides. Face dull, closely punctured on the lower half of the sides, smooth and shining in the middle; the rest of the face, vertex and occiput strongly but not closely punctured, shining between the punctures. Mesothorax shining, the mesonotum coarsely punctured, chiefly in front and at the sides, the scutellum with a few large punctures on the anterior half and more closely punctured behind medially. Mesopleurae sparsely and coarsely punctured. Metapleurae transversely striate. Epinotum dull, reticulate-punctate, with a few rugae superimposed. Tergites with a deep and open puncturation, shining between the punctures, the first two more strongly punctured than the third to fifth. Pygidial area triangular, dull, closely and coarsely punctured, wider at the base than long, the apex widely rounded. Sternites slightly shining, finely punctate and rugulose. Median area of the clypeus with a shining triangular depression in the middle, the apex directed towards the posterior margin; the anterior margin has a blunt angle on each side.

Mandibles feebly excised on the outer margin near the base, the inner margin with a dentiform angle in the middle. Eyes amplified below, the facets of the enlarged portion larger than those elsewhere; the inner orbits divergent above and below. Posterior ocelli separated from the eyes by a distance equal to one and a half times the diameter of the ocellus; a shallow impression extends from them towards the eyes. The temples are separated from the smooth and shining mentum by a ciliated carina. Pronotal collar short, not much longer at the sides than in the middle. The median fifth of the mesonotum is shallowly and longitudinally impressed; scutellum barely more than one-third the length of the mesonotum, quadrangular, wider than long, not carinate in the middle, the posterior corners bluntly dentate. The metanotal squamae project very slightly behind and are not much raised at the sides. Epinotal process yellowish hyaline, except for an opaque cream-coloured streak in the middle, short, canaliculate, the apex feebly bilobate owing to a shallow and angular median excision. Abdomen oval, the tergites distinctly constricted at the base and strongly convex lengthwise. The upper half of the scape in front is sometimes pale yellow.

♂. 2.5-3 mm. long. Abdomen black, the apical margins of the tergites paler, the last tergite fusco-ferruginous at the apex. Middle and hind tarsi



7.

Fig. 7. *Belomicrus Braunsi*, ♀, scutellum, metanotum and epinotal process.

and hind tibiae, excepting the yellowish base outwardly, blackish brown. Epinotal process parallel-sided, the apical margin only very shallowly arcuate. Otherwise like the ♀.

Willowmore, December (Dr H. Brauns); 38 miles east of Ceres, Little Karroo, November (R. E. Turner).

B. (Oxybelomorpha) mirificus Kohl (figs. 8 and 8 b). *Zeitschr. f. Hymen. und Dipt.* v, p. 225, ♀. 1905. *Konowia*, II, p. 194, ♀. 1923.

“♀. 4-4.5 mm. long. Head large. Occiput relatively very long, fairly deeply emarginate behind, compressed on both sides to a sharp keel. Occipital margin sharp. Mandibles long, almost falcate; the outer margin is not excised but bears an even row of long cilia. The median area of the clypeus is nasiform, carinate in the middle, the apex narrowly produced into a lobe whose anterior margin is feebly excised. The antennal sockets are farther from each other than they are from the eyes. The eyes are approximated below, the least distance between them lying at a point which is only just above the level of the antennal sockets, and is equal to the length of the scape or to nearly half the length of the face (the length of the face being measured from the anterior ocellus to the posterior margin of the clypeus). Scapes long. The median impressed line on the face, compared with other species in which such is present, is deep. The posterior ocelli lie on a line level with the posterior margin of the eyes. The second joint of the flagellum is smaller than the first, about as long as wide. The face and temples are covered with a dense decumbent pubescence. On the temples this pubescence ends abruptly at the line where they turn downwards to the mentum, thereby forming a rectilinear margin which is further emphasised by a row of long, thin and outstanding hairs. The shape of the pronotal collar is highly distinctive. Seen from above, it is formed by an almost cuboid middle piece which falls away vertically at the sides and in front. Posteriorly it extends outwards on each side as a narrow strip towards the pronotal tubercles with which it is fused. The anterior face with its acutely carinate lateral edges falls away obliquely to the sides. Mesonotum finely and fairly closely punctured, slightly shining, covered with a thin tomentum. Scutellum with sharp lateral margins. Mesopleurae clothed with silvery pubescence, the episternal suture nevertheless still visible. Metanotal squamae small, widely separated. Mucro acuminate. The sides of the epinotal dorsum transversely striate, the sides of the segment shining, striolate only above. First and second tergites with unusually fine puncturation, at least not distinguishable with a magnification of 10 diameters. The following tergites, apart from the insertion points of the hairs, are practically impunctate. Owing to the wide and deep impression of their anterior halves the second and third tergites appear strongly constricted. The fourth tergite also shows a trace of such a constriction. The pygidial area is equilaterally triangular and punctured. The lateral edges of the tergites at the folding are sharp, the sternites fairly flat. Metatarsus of the foreleg with a moderately long comb. Wings hyaline. Radial cell of the forewing lanceolate, the accessory cell small and not noticeable. Hindwing with six hooks in the retinaculum.

“Black. The following parts are ivory yellow: the mandibles, clypeus,

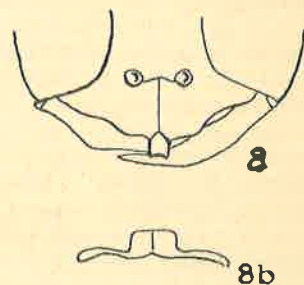


Fig. 8. *Belomicrus mirificus*, ♀, clypeus; a, pronotal collar (after Kohl).

scapes and pedicels, the pronotal collar above and the pronotal tubercles, the tegulae, posterior half of the scutellum, metanotum, epinotal mucro, bands on the tergites which become shorter and narrower towards the apex of the abdomen, the apical segment and the greater part of the legs. The band on the first tergite is very wide, and like the band on the following segment, touches the posterior margin. The band on the fifth tergite is reduced to a median spot near the basal margin. Sternites without yellow markings. A streak at the base of the fore and middle femora and the whole of the posterior femur are black. Calcaria whitish."

Abyssinia. Type in the Vienna Museum.

B. (Belomicrus) sordidus n.sp. (figs. 9, 9 a and b).

♀. 4.6 mm. long. Black. Tibiae pale yellow above, blackish or brown below, their apices and apices of all the femora reddish ochreous. Fore and middle tarsi reddish ochreous, the posterior pair pale brown. Pronotal tubercles, posterior margin of the metanotal squamae and median apical portion of the epinotal process, pale straw-yellow. Mandibles brownish yellow, piceous at the apex. Tegulae testaceous, wings hyaline, the veins brown. Apical margins of the abdominal segments fusco-ferruginous.

Face, temples and mesopleurae with a scanty, short and rather coarse, silvery pubescence. Tergites with a very short, yellowish pubescence, which is not conspicuous. Sides of clypeus dull, closely and finely punctured, the median area smooth and impunctate. Lower face closely punctured at the sides and just behind the middle of the clypeus, smooth and shining in the middle; upper face, vertex and temples strongly punctured, the punctures increasing in size upwards, and separated by spaces fully as wide as the diameter of the largest puncture. The lateral foveae on the vertex are not very distinct, the space between the posterior ocelli and the eyes and also behind the eyes less closely and more coarsely punctured and slightly shining. Pronotal collar dull, closely punctured. Mesonotum and mesopleurae as strongly and as closely punctured as the head and fairly dull. Scutellum longitudinally and shallowly rugose, punctured between the rugae, the punctures larger than those of the mesonotum. Metanotum smooth and shining. Metapleurae transversely rugose. Sides of the epinotum smooth and slightly shining below, dull and rugulose above; the declivity and dorsum dull, reticulate-punctate, with fine oblique rugae superimposed. Tergites 1-5 closely punctured, the first more coarsely than the following, but the punctures are smaller than those on the mesonotum. Second to fifth tergites constricted at the base, the first with a wide and shallow longitudinal impression in the middle of the upper part. Pygidial area subtriangular, about as long as wide at the base, sparsely and coarsely punctured, the apex widely rounded. Sternites shining, microscopically rugulose, the apical sternite with a few punctures at the sides. Prosternum and ventral surface of anterior coxae shining, very sparsely and shallowly punctured. Anterior margin of the clypeus slightly convex in the middle, shallowly concave on each side; the median area has a flattened triangular space. Eyes widened below, their inner margins divergent above and below, the least distance between them lies at the lower third of the face. Mandibles not excised on the outer margin. The posterior ocelli are a little more than twice as far from each other as they are from the eyes, their distance from the latter being equal to one and a half times the diameter of one ocellus. Occiput and temples well developed, the distance from the brow of the face

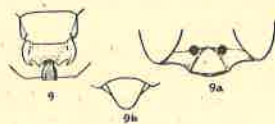


Fig. 9. *Belomicrus sordidus*, ♀, posterior half of thorax; a, clypeus; b, pygidium.

to the posterior ocelli being equal to the distance from the latter to the occipital margin. Pronotal collar impressed transversely in front of its posterior margin, not much shorter in the middle than at the shoulders, which are rectangular. Scutellum oblong and parallel-sided, twice as wide as long, the posterior angles rounded externally, slightly raised to form blunt teeth. Metanotal squamae suberect outwardly, the apex deeply bilobate, the outer lobe more acute than the inner and directed downwards. The outer and posterior margins are pellucid, the inner part adjacent to the black central disc, opaque and pale yellow. Epinotal process shorter than the metanotal disc, gutter-shaped, transversely truncate at the apex and slightly widened from the base to the middle, thence parallel-sided to the apex; its lateral margins are subvertical and the floor has a few fine transverse striae. Anterior femora broad and flattened, anterior metatarsi without a comb. Calcaria and spines on the legs pale ochreous. Second joint of the flagellum as long as the first.

♂. 4 mm. long. Sculpture of the mesonotum less dense and a little coarser than in the ♀. Disc of metanotum with a few transverse rugae. Pygidium trapezoidal, the apical half ferruginous. Otherwise like the ♀.

Aliwal North, C.P., January (R. E. Turner), 1 ♀, 1 ♂. Types in the Brit. Mus. coll.

B. (Belomicrus) Ferrieri Kohl (figs. 10 and 10a). *Konowia*, 11, p. 265, ♀, ♂. 1924.

"A species sufficiently distinguishable by its sculpture and the structure of the scutellum, postscutellum and hind femur."

♀. 4.5 mm. long. Mandibles not excised on the outer margin; in the ♂ (perhaps also in the ♀) with a slight inward curve at the middle of the inner margin, almost giving the appearance of a small tooth. Median area of the clypeus somewhat gibbose, its anterior margin straight, shining, and with distinct lateral angles. The eyes are somewhat amplified below, therefore not regularly oval; the facets on the widened portion somewhat larger than those elsewhere. The least distance between the eyes lies slightly above the antennal sockets and equals four-sevenths of the length of the face. The frons has a median impressed line. The posterior ocelli are nearly three times as far away from each other as they are from the eyes. An oblique impression extends forwards from each of them towards the eyes. Head very closely and finely punctured, and in addition there is an exceedingly fine, fundamental alutaceous sculpture (resolvable under a magnification of 100 diameters). The smooth and shining lower surface of the head is separated from the temples by a ciliated carina. Clypeus and lower face with silvery pubescence, the latter with two smooth glabrous lines to accommodate the scapes. Pedicellus of the scape barely longer, but much thicker than the first joint of the flagellum. The larger median portion of the pronotal collar is clearly defined from the thinner lateral portions by lateral angles and also by its whitish yellow colour. Mesonotum with sparse and relatively large punctures, and like the head,

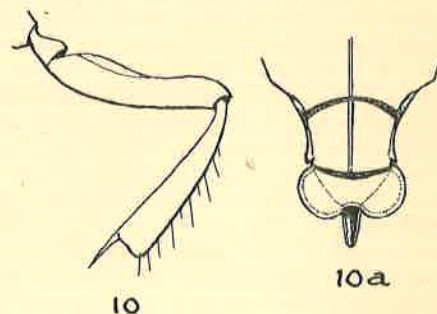


Fig. 10. *Belomicrus Ferrieri*, ♀, hind femur and tibia; a, scutellum, metanotum and mucro.

The posterior ocelli are nearly three times as far away from each other as they are from the eyes. An oblique impression extends forwards from each of them towards the eyes. Head very closely and finely punctured, and in addition there is an exceedingly fine, fundamental alutaceous sculpture (resolvable under a magnification of 100 diameters). The smooth and shining lower surface of the head is separated from the temples by a ciliated carina. Clypeus and lower face with silvery pubescence, the latter with two smooth glabrous lines to accommodate the scapes. Pedicellus of the scape barely longer, but much thicker than the first joint of the flagellum. The larger median portion of the pronotal collar is clearly defined from the thinner lateral portions by lateral angles and also by its whitish yellow colour. Mesonotum with sparse and relatively large punctures, and like the head,

also with a fine fundamental alutaceous sculpture; the mesonotum has a distinct median longitudinal carina over its whole length, and there is also one on the scutellum. The latter has the posterior angles produced into blunt lappets, and its lateral and posterior margins are raised. Postscutellum semicircular, with two large and almost contiguous squamae. The epinotal mucro is fairly large and is narrowed towards the apex. Mesopleurae sculptured like the mesonotum. Episternal suture distinct. There is only a feeble suture between the mesopleurae and the mesosternum. Sides of the epinotum microscopically aciculate, fairly shining, and behind near the carina which separates them from the dorsum, distinctly rugose. Dorsum of epinotum dull, very finely rugose, near the base rugoso-striate. Abdomen oval, the tergites 2-4 constricted at the base. The first tergite is noticeably impressed near the base....Pygidial area triangular. The hind femora are peculiarly shaped, since seen from a certain position they appear to be enlarged at the base, and to a lesser degree also near the apex. Wings hyaline, the retinaculum of the hind wing begins at some distance from the origin of the radius.... The following parts are bright sulphur-yellow: the mandibles in greater part, the scapes and pedicellus, the pronotal collar above, with a slight interruption in the middle, the pronotal tubercles, the posterior halves of the metanotal squamae, the posterior half of the epinotal mucro, the tibiae and the tarsi. The latter are also partially brownish grey, and the tibiae have a brownish streak on the inner side.

"♂. 3.5-4 mm. long. In most examples the ♂ resembles the ♀ in colour and sculpture. The least width of the face is three-fifths of its length. The pronotal collar, unlike that of the ♀, is not remarkable; seen from above it is feebly arcuate."

Sunday River, C.P., December (Dr H. Brauns).

I identify with this species 2 ♀♀ and 4 ♂♂ from Oudtshoorn and Aliwal North (leg. R. E. Turner) in the British Museum collection. They agree so closely with the description given above that there can be no doubt that the identification is correct, but in that case the illustrations in *Konowia* are not very accurate, and I have therefore given new figures of the hindleg and metanotum, based on one of the specimens from Aliwal North.

Genus OXYBELUS Latr.

Préc. car. génér. insect., p. 129. 1796.

Notoglossa, Dahlbom, *Hymen. Eur.* 1, p. 514. 1845.

CHARACTERS. Head as wide as the thorax. Mandibles not excised on the outer margin, the inner margin with an angular projection near the base. The eyes reach the base of the mandibles and are moderately divergent above and below, with the facets all equal. Ocelli arranged in a low isosceles triangle. Maxillary palpi 6-, labial palpi 4-jointed. Clypeus transverse, with a strong median longitudinal carina, which usually does not reach the anterior margin in the ♀, but in the ♂ projects beyond it as a tooth. In the ♂ there is also a distinct tooth on each side of the median one. Antennae 12-jointed in the ♀, 13-jointed in the ♂. The scapes are inserted close to the posterior margin of the clypeus and are about as far from each other as they are from the eyes. The flagellum is short, the joints, excepting the first three and last, always shorter than wide. The face is fairly flat and has two smooth impressions on the lower half to accommodate the scapes when laid back. Temples wide above, rapidly narrowing below. Pronotal collar very short, almost linear in the middle, nearly level with the mesonotum, its anterior face vertical. Mesopleurae strongly developed, very prominent, with a well-developed

epicnemium in front, and a trace of one behind. Episternal suture present. Mesonotum broad, sometimes with a faint median longitudinal carina on the posterior half. Scutellum and metanotum longitudinally carinate in the middle, both with lateral membranous lamellae; they are small on the scutellum but in the metanotum they are large and squamose, more or less rostrate, with the narrower apical portion projecting freely over the base of the epinotum, the apex usually bifid. The dorsum of the epinotum is visible only at the sides since the base of the epinotal process covers the greater part of the median field. The process varies in shape, it is sometimes canaliculate or gutter-shaped, or foliaceous, or mucronate. The declivity and lateral areas of the dorsum are sharply separated from the sides of the epinotum by a continuous and distinct carina. This carina is usually paler in colour and translucent and thereby rendered conspicuous. Abdomen subconical, usually widest across the second segment. The first and second tergites have a short lateral fold, the edge of the fold moderately carinate; the sternites are not flat. In the ♂ the 2nd-6th tergites have a spinous process on each side, and in one species, *acutissimus* Bischoff var. *propinquus*, these are also present in the ♀. Pygidial area triangular in the ♀, trapezoidal in the ♂. Eight ventral plates are visible in the ♂. Wings similar to those of *Belomicrus*, but the radial cell is not so lanceolate, and the indistinct accessory cell is therefore wider. Legs strongly spinose, the middle and hind tibiae with three rows of spines, middle tibiae with one spur, posterior femora slightly narrowed just before the apex and furnished at that point on the outside with one or more very short, thin spines. Middle coxae far apart and sunk into the sternum. A tarsal comb is well developed in the ♀, less so in the ♂. Last joint of all the tarsi swollen, pulvilli large, claws unarmed.

The species of this genus make their nests in sandy soil and provision their larvae with Diptera.

Distribution. Both hemispheres, but absent from the Australian region.

Including the new species described in these pages 23 recognisable species of this genus have been recorded from the Ethiopian region. Of many of them I have been able to examine very large series, and altogether have seen over 750 specimens distributed amongst 21 species. The study of this large amount of material has led to the following conclusions. Our species may be separated into three main groups according to the structure of the epinotal process. The genus exhibits very few plastic characters suitable for the differentiation of species, but of these the structure of the epinotal process is certainly one of the most valuable. Next in order of importance comes the shape of the metanotal squamae and then the puncturation of the mesonotum and tergites. However, in the group with a foliaceous epinotal process, the character of the puncturation is in the majority so uniform as to be of very little use for the separation of the species. On the other hand, many of the characters to which Kohl (*Gattungen der Sphegiden*) draws particular attention as being useful for that purpose are valueless in regard to our South African species. Such are, the distance of the posterior ocelli from the eyes, the length of the antennal joints, and for the majority of our species the width of the face in relation to its length. In regard to the first of these, the differences where they exist are too small to be of practical value, and the ratio of the width to length of the face is singularly constant. It is true that at first sight some species appear to have a wider face than others, but this is often due to an absolute greater size, and by measurement it will be seen that the proportions between length and width remain as usual. Likewise the structure of the pronotal collar is as a rule fairly constant, and the shape of the pygidial area in the ♀ is very much the same in most of our species. The character of

the sculpture of the epinotum is fairly uniform in the majority of our species and differences which may be present are generally of too subtle a nature to be made clear by verbal description and could be adequately illustrated only by microphotographs. For this reason no great emphasis has been laid on them in the descriptions which follow. The pattern of the pale spots and bands on the thorax and abdomen does vary to a moderate extent within each species, but within the genus it is far more constant than in many other genera of the Sphegidae, and the actual tint itself is also very constant. The colour of the axillary sclerite, which covers the extreme base of the costa and lies underneath the tegula, is very constant for the species, and at least

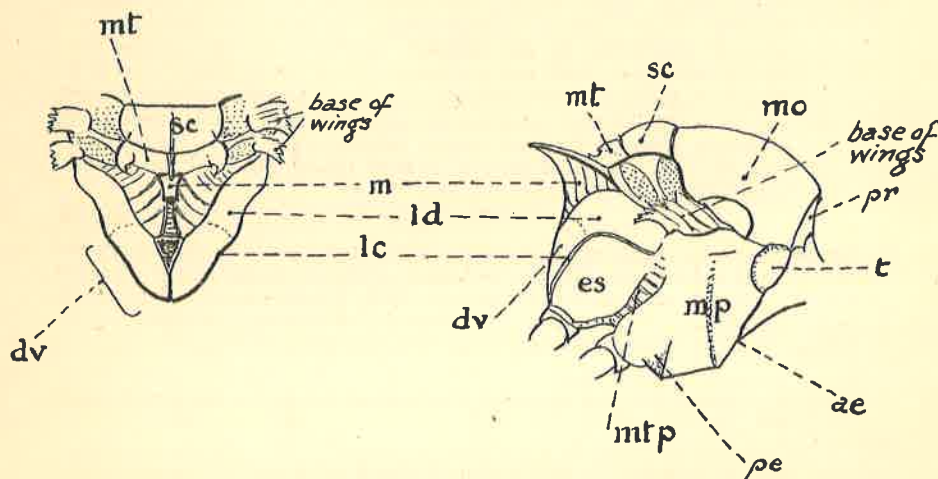


Fig 11. Thorax of *Oxybelus*, slightly schematic. The figure on the left represents the posterior end of the thorax seen direct from behind, that on the right is the lateral view.

pr, pronotum; *t*, pronotal tubercle; *mo*, mesonotum; *ae*, anterior epinemium; *pe*, posterior epinemium; *sc*, scutellum; *mp*, mesopleurae; *mtp*, metapleurae; *mt*, metanotum or postscutellum; *m*, mucro of the epinotum, much foreshortened in the figure on the left; *ld*, lateral areas of the dorsum of the epinotum; *lc*, lateral carina of the epinotum; *es*, sides of the epinotum; *dv*, declivity of the epinotum, the upper limits of which are usually not clearly delimited by carinae or rugae from the lateral areas of the dorsum of the epinotum.

The central and more or less triangular space, obliquely striated, on each side of and below the mucro, represents the median area of the epinotal dorsum; it is continuous below with a sunken triangular area which is merely an enlargement of the median vertical groove of the declivity seen in other Sphegids.

in the group having a foliaceous epinotal process provides a diagnostic character which is fairly reliable. It should be noted that there are certain characters, which being generic and not specific, have not been considered in the following descriptions. These are, the striation or rugosity, intermixed with puncturation, which is to be seen on the occipital and temporal regions of the head, the fine reticulate-punctate sculpture of the depressed apical margins of the tergites, which are always of a paler colour than the rest of the segment, and bear a row of short and fine setae, and the minute excision at the apex of the pygidial area in the ♀. In the ♂ the apical margin of the pygidium is usually feebly concave, rarely quite straight.

KEY TO THE SPECIES OF *OXYBELUS*, ♀♀

A. Epinotal process mucronate, *i.e.* spiniform, with the upper surface hollowed out.

- (2) 1. Large species, 11 mm. long or more. *imperialis* Gerst.
- (1) 2. Smaller species, less than 9 mm. long.
- (4) 3. Mucro very short, triangular, only slightly longer than wide at the base; sternites 1-4 yellow; 8 mm. long. *flaviventris* Arnold
- (3) 4. Mucro at least one and a half times longer than wide at the base; sternites black.
- (6) 5. Punctuation sparse, surface of mesonotum, scutellum and tergites shining; tergites without lateral spines, the first only shallowly impressed lengthwise in the middle; punctures on the mesonotum widely separated; head and abdomen with a brassy tinge; tegulae in front and axillary sclerite yellow. *paucipunctatus* Arnold
- (5) 6. Punctuation closer, mesonotum and scutellum dull; head and abdomen without a brassy tinge; tergites with lateral spines; the punctures of the mesonotum almost contiguous; tegulae fusco-testaceous, axillary sclerite blackish. *acutissimus* Bischoff, var. *propinquus* Arnold

B. Epinotal process canaliculate or gutter-shaped, the apex more or less deeply excised and therefore bilobate or bidentate at the apex, the lateral margins always reflected upwards to some extent. (N.B. In some species the process is so wide and shallow that it might be regarded as coming under category C, but in the latter the lateral margins are not reflected upwards.)

- (18) 7. Epinotal process almost parallel-sided or with slightly concave sides, not much wider or narrower just behind the apical excision than at the base.
- (11) 8. Lateral areas of the epinotal dorsum clothed with a dense pubescence which obscures the sculpture. Tergites with distinct apical bands of pubescence.
- (10) 9. Pubescence silvery; head and body almost entirely black, the first four tergites with very narrow preapical bands of yellow, widely interrupted in the middle and often absent from the first and fourth. *matabele* Arnold
- (9) 10. Pubescence golden; pronotal tubercles and spots on the scutellum yellow, first four tergites with conspicuous preapical yellow bands, narrowly interrupted in the middle on the first and second tergites. *Braunsi* Arnold
- (8) 11. Lateral areas of the epinotal dorsum not obscured by dense pubescence; tergites without distinct apical fasciae of pubescence.
- (17) 12. Sixth abdominal segment ferruginous, axillary sclerite ferruginous or reddish ochreous.
- (14) 13. Face as wide at its narrowest point as long in the middle (fifth tergite black, with a yellow transverse band which is narrowed in the middle). *natalensis* Arnold
- (13) 14. Face narrower, distinctly longer than wide.
- (16) 15. Fifth abdominal segment more or less ferruginous. Femora in greater part ferruginous; metanotum, excepting the outer halves of the squamae, pale yellow. *ruficaudis* Cameron
- (15) 16. Fifth abdominal segment black (the sixth sometimes fusco-ferruginous). Femora black excepting the apex; middle part of the metanotum usually black. *ruficaudis* var. *melanarius* Arnold
- (12) 17. Sixth abdominal segment black; axillary sclerites blackish on the inner half, pale yellow on the outer. *Peringueyi* Sauss.
- (7) 18. Epinotal process distinctly widened towards the apex, clearly wider just behind the apical excision than at the base.

- (20) 19. Abdomen shining, finely and sparsely punctured above; pygidium pale yellow; 4.5 mm. long. *limatus* Arnold
- (19) 20. Abdomen dull, closely punctured; pygidium black or fusco-ferruginous.
- (22) 21. 4.3 mm. long. Punctures on the second tergite about as large as those on the first, much larger than those on the third. Pygidial area fusco-ferruginous at the base, paler at the apex; yellow fasciae on the third to fifth tergites narrow, widely interrupted in the middle, and on the fifth confined to the apical fourth of the segment. *flavicornis* Arnold
- (21) 22. 7 mm. long. Punctures on the second tergite smaller than on the first, and not much larger than those of the third; pygidial area black. Yellow bands on the abdomen broad, entire on the third to fifth, and on the fifth covering nearly the whole of the segment. *willowmorensis* Arnold
- C. Epinotal process foliaceous, ovate, ovate-lanceolate or lanceolate, excised at the apex and carinate longitudinally in the middle.
- (24) 23. Median area of the clypeus with a subquadrate nasiform protuberance, extending from the base to about the middle, its upper surface nearly flat, its anterior margin bluntly angular. *nasutus* Bischoff
- (23) 24. Clypeus carinate or tuberculate.
- (26) 25. The carina on the clypeus ends before the middle in a short and acute spine (all the tibiae and tarsi and the pale marks on the thorax and first four tergites pale straw-yellow, the tibiae also with a slightly pink tinge). *pallidus* Arnold
- (25) 26. The carina on the clypeus not ending in a free spine, usually thickened in its middle or at its end to form a blunt tubercle.
- (28) 27. Epinotal process lanceolate, long and narrow, twice as long as its greatest width, the apex angularly emarginate, the apical teeth acute, blackish in the middle basally, ferruginous beyond, with the sides and apex paler and yellowish. *angustus* Saussure
- (27) 28. Epinotal process not lanceolate, much less than twice as long as its greatest width.
- (32) 29. Apical excision of the epinotal process angular, wider than deep, the apical teeth acute. Pygidial area black.
- (31) 30. Middle and hind femora black with yellow markings; abdominal bands pale lemon yellow, on the third to fifth entire, on the fifth rectangular and covering nearly the whole of the tergite; axillary sclerite blackish in the middle and pale yellow marginally. Epinotal process beyond the base fairly flat and nearly parallel-sided. *aethiopicus* Cameron
- (30) 31. Middle and hind femora ferruginous, abdominal bands chrome yellow, all widely interrupted in the middle, the fifth tergite immaculate; axillary sclerite blackish all over. Epinotal process distinctly tumid at about the middle, the sides clearly convex. *curviscutis* Arnold
- (29) 32. Apical excision of the epinotal process more or less semicircular or semi-elliptical, the apical teeth rounded (pygidial area black or ferruginous).
- (34) 33. Abdominal bands cream-coloured; pygidial area black, as long as wide at the base (epinotal process rugose, the rugae coarse and nearly parallel to the median carina). *lingula* Gerst.
- (33) 34. Abdominal bands chrome yellow; pygidial area ferruginous, longer than wide at the base.
- (36) 35. Middle and hind femora black, posterior metatarsi blackish, and fusco-ferruginous apically. Epinotal process unevenly rugose, the rugae oblique, the apical excision deep and angular. Pygidial area hardly more than one-fourth longer than wide at the base, clothed with yellowish white setae. *rubrocaudatus* Arnold

- (35) 36. Middle and hind femora ferruginous or fusco-ferruginous, the posterior metatarsi stramineous. Epinotal process very finely and evenly striate, the apical excision shallow and round. Pygidial area one-third longer than wide at the base, clothed with golden setae.
lepturus Arnold

KEY TO THE SPECIES OF *OXYBELUS*, ♂♂

- A. Epinotal process mucronate, *i.e.* spiniform, with the upper surface hollowed out.
- (2) 1. Mesonotum and last two abdominal segments ferruginous; mucro long and narrow, almost as long as the scutellum and disc of metanotum united. *Stevensoni* Arnold
- (1) 2. Mesonotum black.
- (4) 3. Tergites dull, closely and coarsely punctured. Legs ferruginous in part, scutellum entirely black, axillary sclerite and last abdominal segment ferruginous. *flaviventris* Arnold
- (3) 4. Tergites more or less shining, finely punctured. Legs black and yellow, scutellum with yellow markings, axillary sclerite black with the margins yellow or entirely yellow. Last abdominal segment black.
- (6) 5. Axillary sclerite entirely pale chrome yellow, first three tarsal joints pale yellow; tergites shining, very shallowly and finely punctured, the first only feebly impressed longitudinally in the middle. *paucipunctatus* Arnold
- (5) 6. Axillary sclerite black, its margins pale ochreous, first three tarsal joints brownish or reddish yellow; tergites not noticeably shining, finely but fairly sharply punctured, the first with a deep longitudinal impression. *acutissimus* Bischoff, var. *propinquus* Arnold
- B. Epinotal process canaliculate or gutter-shaped, the apex more or less deeply excised; it is sometimes very shallow but at least the lateral margins are reflected upwards.
- (16) 7. Epinotal process not much wider or narrower just behind the apical excision than at the base.
- (9) 8. Body entirely black, the tergites with apical bands of silvery pubescence, finely and very closely punctured. *matabele* Arnold
- (8) 9. Body with yellow markings, at least the first tergite coarsely punctured.
- (11) 10. Spots and bands on the body pale straw-yellow, almost cream-coloured; anterior margin of the clypeus feebly bidentate on each side of the deep median emargination (scapes black). *solitarius* Arnold
- (10) 11. Markings on the body chrome yellow; anterior margin of the clypeus tridentate.
- (13) 12. Metanotum black, two-thirds as long (in the middle) as the scutellum; the latter subquadrangular, the posterior margin nearly straight, its yellow markings very small. *natalensis* Arnold
- (12) 13. Metanotum yellow, less than half as long in the middle as the scutellum; the latter almost semicircular, with large yellow spots, only the posterior margin and a narrow line in the middle are black.
- (15) 14. Sixth and seventh abdominal segments red; axillary sclerite reddish yellow, scapes yellow. *ruficaudis* Cameron
- (14) 15. Sixth and seventh abdominal segments black; axillary sclerite pale chrome or ochreous yellow, scapes blackish. *Peringueyi* Saussure
- (7) 16. Epinotal process distinctly wider just behind the apex than at the base.
- (18) 17. First and second tergites more finely punctured than the mesonotum; scapes black, flagellum excepting the first joint dark brown above, brownish yellow below; axillary sclerite chrome yellow. *limatus* Arnold
- (17) 18. First and second tergites with punctures as large as, or larger than, those of the mesonotum; scapes bright yellow, flagellum pale ochreous

or pale orange yellow, the basal joints brownish above; axillary sclerite blackish with ochreous margins.

- (20) 19. Posterior femora black basally; apical joint of the flagellum darker than the other joints; scutellum twice as long as the disc of the metanotum; metanotal squamae as long as the epinotal process (measured along the middle); the latter in the middle is as long as its greatest width, which is near the apex. *flavicornis* Arnold
- (19) 20. Posterior femora fusco-ferruginous; flagellum concolorous; scutellum only half as long again as the disc of the metanotum; metanotal squamae only a little more than half as long as the epinotal process; the latter in the middle is a little more than half as long again as its greatest width which is at about the basal third. *flavicornis*, race *nyassae* Arnold
- C. Epinotal process foliaceous, lanceolate or elongate ovate, the apex excised.
- (22) 21. Epinotal process at least three times longer than its greatest width. *angustus* Saussure
- (21) 22. Epinotal process shorter.
- (28) 23. Seventh abdominal segment, and sometimes also the sixth, ferruginous.
- (25) 24. Epinotal process long, three-fourths longer than its greatest width, which is at the basal third, the apex shallowly and roundly excised. *pallidus* Arnold
- (24) 25. Epinotal process shorter, at the most only half as long again as its greatest width, which is at the middle, the apex deeply and angularly excised.
- (27) 26. Hind femora black, their apices yellow; flagellum dark brown above, brownish red below; sternites entirely black. *rubrocaudatus* Arnold
- (26) 27. Hind femora ferruginous; flagellum pale ferruginous; second and third sternites with preapical streaks of yellow on each side. *lepturus* Arnold
- (23) 28. Sixth and seventh abdominal segments black, the apex of the seventh sometimes fusco-ferruginous.
- (32) 29. Epinotal process a little more than twice as long as its greatest width, or nearly so; hind femora black and yellow.
- (31) 30. Median area of the epinotum wide, clearly defined all round by a high raised border, the enclosed space with three or four oblique, widely spaced and strong carinae on each side, the spaces between them shining; tergites closely and rather finely punctured, dull; axillary sclerite blackish; yellow marks on the legs and body pale lemon yellow. *aethiopicus* Cameron
- (30) 31. Median area of the epinotum narrow, less clearly defined than in *aethiopicus*, the enclosed space with feeble rugae fairly close together, the spaces between them not distinctly shining; tergites 1 and 2 coarsely punctured, shining between the punctures, which on the first are not very close together; axillary sclerite pale yellow; markings on the legs and body chrome yellow. *lingula* Gerst.
- (29) 32. Epinotal process distinctly less than twice as long as its greatest width; hind femora ferruginous. *curviscutis* Arnold

O. imperialis Gerstaecker (figs. 12 and 12 a). *Zeitschr. f. d. ges. Naturw.* xxx, p. 24, nota, ♀. 1867.

♀. 11.5 mm. long. One of the largest species in the genus. Black; scapes fusco-ferruginous below, a small spot of yellow on the front of the tegulae. First four tergites with subquadrangular chrome yellow maculae on each side, extending from the base to just in front of the narrowly depressed apical margins; their transverse extent is such that only a quarter of the width of the tergites is black in the middle. The fifth tergite has a small spot of yellow on each side close to the lateral margin. Inner side of the anterior tibiae and

apical joints of all the tarsi ferruginous. Wings hyaline, the veins black. Clypeus, vertex, mesonotum and apical margin of the fifth tergite with a very short black pubescence, the face with silvery pubescence which ends a little below the anterior ocellus.

Clypeus dull and punctured at the sides, the middle with a broad tubercle at the base, below which the surface is concave, smooth and shining; the anterior margin of the median area transverse and with a feebly angular prominence at the middle. Upper part of the head, from the margin of the

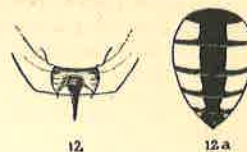


Fig. 12. *Oxybelus imperialis*,
♀, posterior half of thorax;
a, abdomen.

pubescent area to the posterior ocelli, closely punctured and dull, beyond the posterior ocelli the punctures are larger and more widely separated, the spaces between them shining. Occiput and temples moderately shining and striate-punctate. Mesonotum, mesopleurae and scutellum strongly punctured, shining between the punctures, the scutellum more coarsely and less closely punctured than the mesonotum. The latter, however, is somewhat less closely punctured on each side of the middle towards the base, and has a median longitudinal carina extending over the posterior fourth. Scutellum strongly carinate lengthwise in the middle, two and a half times wider than long. Metapleurae and sides of the epinotum finely and transversely striate, moderately shining. Metanotal squamae thick, almost triangular, the apex incurved and acute, the margins raised, with a few transverse carinae. Epinotum armed with a narrow and acute mucro, excavated at the base, two and a half times longer than wide at the base. Tergites 1-5 shining, the first irregularly and fairly coarsely punctured, the punctures hardly as large as those of the mesonotum. The second to fourth tergites sparsely and coarsely punctured on the yellow areas, more finely and more closely punctured on the median black area, the depressed apical margins of all the tergites closely and finely punctured. Fifth tergite closely and finely punctured at the base, sparsely and coarsely on the apical half. Pygidial area triangular, longer than wide at the base, longitudinally striate. Fine black hairs arise from the punctures on the tergites, and the pygidial area is covered with brownish black setae. Sternites shining, the second sparsely and coarsely punctured. Face almost as wide in the middle as long (measured from anterior ocellus to the posterior margin of the clypeus). Anterior metatarsi with six spines on the outer margin. Spines on the legs black.

Lady Grey, C.P., February (R. I. Nel), 1 ♀.

The type of this species in the Berlin Museum was collected by Drège, and with the exception of this single specimen from Lady Grey, C.P., does not appear to have been taken by any other collector during the last 59 years. Considering its size and distinctive colouring, on account of which it has been so aptly named by Gerstaecker, this striking insect can hardly have been overlooked, and the absence of records is no doubt due to its rarity.

O. flaviventris n.sp. (figs. 13 and 13 a-e).

♀. 8 mm. long. Black; anterior margin of the median area of the clypeus, femora and tibiae ferruginous, the posterior femora slightly blackish below. The following parts are chrome yellow: collar of pronotum including the upper fourth of its vertical face, pronotal tubercles, metanotum, middle and hind coxae, trochanters and an oblong spot at the base of the middle femora below, the upper side of the posterior tibiae, lateral spots on the first five tergites, the first four sternites excepting their brownish apical margins, a lateral mark on the first, and the apical margin of the fifth sternite. Pygidium

fusco-ferruginous. Antennae excepting a yellow streak on the front of the scapes, the tarsi and tegulae pale flavo-ferruginous, some of the tarsal joints paler at the base. Metanotal squamae nearly colourless and translucent, traversed by four opaque streaks. Calcaria and spines on the legs ferruginous. Wings hyaline, veins and stigma dark brown. Face and temples with a short silvery pubescence; elsewhere there is a fine greyish pubescence, scanty, but somewhat denser on the abdomen, lateral areas of the epinotal dorsum and lateral trabeculae of the scutellum, nowhere very conspicuous. Head and mesothorax dull, closely and fairly strongly punctured. Metanotum coarsely punctured, the squamae broad, upturned at the base, the apex produced into a fine point and not bifid. Scutellum and metanotum longitudinally and feebly carinate in the middle. Epinotum with a fundamental and very fine reticulate puncturation, the lateral areas of the dorsum and of the declivity dull, the former with a few irregular rugae superimposed; the median area of the dorsum is slightly shining, obliquely rugose on each side and reticulate rugose below the mucro. Sides of epinotum dull, finely and transversely rugose. The mucro is shaped like a deeply hollowed-out half-cone, and is a little longer than wide at the base, fairly short, or about two-thirds the length of the scutellum. First tergite strongly punctured, the punctures separated by spaces which are about twice as large as the largest puncture. Second tergite more closely punctured, the largest puncture hardly half as large as those on the first, shining between the punctures. Third and fourth tergites more finely, the fifth more coarsely punctured than the second, the fifth sparsely covered with long, yellowish setae; pygidial area clothed with reddish golden hairs, elongate triangular, about one-sixth longer than wide at the base. Second sternite shallowly and fairly strongly punctured, the third to fifth on the basal halves and the sixth on the apical half sparsely and very coarsely punctured. Clypeus with a high cariniform tubercle at the base, the anterior margin slightly produced in the middle and with a low tooth on each side some distance from the middle. Face wide, narrowest in the middle, at which point it is as wide as long. Second and third joints of the flagellum longer than wide, and of equal length. Posterior ocelli separated from the eyes by a distance equal to one and a half times their own diameter. Pronotal collar very short, hardly longer at the blunt lateral angles than in the middle. Mesonotum one-third wider in front than long in the middle, a trifle more than twice as long as the scutellum. Yellow maculae on the first four tergites not large, and on the first three confined to the outer thirds of the segments. Anterior metatarsi with six spines on the outer margin.

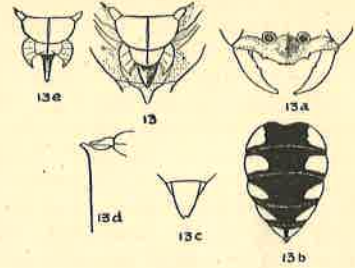


Fig. 13. *Oxybelus flaviventris*, ♀, posterior half of thorax; a, clypeus; b, abdomen; c, pygidium; d, lateral view of epinotum; e, scutellum, etc., of ♂.

♂. 6.3 mm. long. The median area of the clypeus has the anterior margin ferruginous only in the middle, in the space between the teeth. Flagellum brownish red above, darker basally, pale reddish ochreous below, the whole of the apical joint black. Anterior tibiae ferruginous, with a pale yellow streak over the whole upper surface. Hind tibiae ferruginous inwardly, with a small yellow spot at the base above, the outer side blackish. Yellow markings on the tergites smaller than in the ♀.

The first tergite with a subtriangular spot on each side, the second to fifth with pre-apical transverse bands attenuated medially and very widely

interrupted in the middle. These bands become thinner on each succeeding segment so that on the fifth the yellow is barely visible. Sixth tergite entirely black, the seventh ferruginous. The second to sixth sternites with very narrow apical bands of pale dull yellow. The tergites have no lateral teeth. Coxae and trochanters black, middle femora without a yellow streak below. Otherwise coloured like the ♀. Punctuation of the tergites stronger than in the ♀, the punctures on the third and fourth not much smaller than on the second; sternites slightly shining, the second shallowly and fairly coarsely punctured, with a longitudinal rounded ridge on each side which ends in a slight boss before the apical margin, the third and following sternites finely and fairly closely punctured. Median area of the clypeus strongly carinate, the anterior margin sharply tridentate, the median tooth being formed by the end of the projecting carina, the margin between it and the lateral teeth deeply concave. Face one-third longer than wide in the middle. Metanotal squamae longer and broader at the base than in the ♀; the epinotal mucro is narrower, longer and more attenuated apically than in the ♀, fully twice as long as wide at the base, the apex narrowly rounded. Pygidial area trapezoidal, the apical margin feebly concave. Otherwise like the ♀.

Bulawayo, November, 1 ♀ (G. Arnold); 1 ♂, December (R. H. R. Stevenson). The type of the ♀ in the R.M. coll., of the ♂ in coll. Stevenson.

O. acutissimus Bischoff. *Ergeb. Deutsch. Zentral Afr. Exped.* III, p. 226, ♀. 1911.

"♀. 4.75 mm. long. Black. The mandibles, excepting their apices, are yellowish brown. The last joints of the antennae are also brown. The following parts are whitish,—a band broken in the middle on the pronotum, the pronotal tubercles, the metanotal squamae, the extreme tip of the mucro, and lateral spots on the first and second tergites; the spots on the third and fourth tergites are bright sulphur-yellow. Two spots on the scutellum and the tegulae are yellowish brown. The anterior tibiae and tarsi are dirty yellowish brown; a white streak of variable extent lies on the inner upper edge of the middle and hind tibiae. The apical spines of the tibiae are also white. The last joints of the tarsi are fairly large and brownish yellow. The pubescence is silvery grey. The clypeus and inner orbits silvery. The pale apical margins of the sternites are fringed with hairs, and there are longer silvery grey hairs in between. The pygidial area is covered fairly densely with yellowish golden hairs. The whole head is evenly, closely and fairly coarsely punctured, and the temples are distinctly marginate. Mandibles of normal form. The clypeus bears several small teeth. The antennae are short and stout, and the joints of the flagellum, excepting the last, are of about equal length. The eyes converge fairly strongly below. The cheeks are very short. The ocelli are arranged in a low triangle. The punctuation of the mesonotum is close and clearly coarser than that of the head, of the mesopleurae coarse, confluent and rugose. The scutellum is sculptured like the mesonotum, and is sharply carinate longitudinally in the middle. This carina is continued over the metanotum which is produced at the sides into two projecting squamae, and thereby appears widely and deeply emarginate, although somewhat produced in the middle by the end of the median carina. The sculpture of the epinotum is very distinct, since all the rugae are much raised and the punctuation of the enclosed spaces is weak. The mucro is deeply excavated above, and drawn to a fine point at the end. It is obliquely curved upwards. The legs are of a normal shape; on the outer edge of the hind tibiae there are six distinct tubercles, from each of which arises a fairly

strong pair of setae. The apical joints of the tarsi are relatively much enlarged. The pulvilli are very large, longer than the claws.... The first to fourth tergites are fairly equally densely punctured. On the basal half of the first tergite the punctures are closer and finer. The first tergite is impressed lengthwise in the middle, but the impression, which is very deep on the horizontal face and the brow of the declivity, is almost obsolete on the declivous anterior face. The impression does not reach the apical margin of the segment. In front of the apical margins of all the segments the puncturation is closer and is also inclined to become rugulose. The fifth tergite is more closely punctured than the preceding tergites and is also somewhat rugose, like the anal segment, in which, however, the punctures are much larger. The first sternite is entirely punctured, the rest only on their posterior halves."

Awakubi, on the Aruwimi, west of Lake Albert, April. Type in the Berlin Museum.

By the courtesy of Dr Bischoff I have had the opportunity to examine the type of this species. The parts which are described as being "whitish" appear to me to have been originally yellow and have been discoloured from some cause or other, probably through immersion in alcohol. I cannot see on the clypeus the several small teeth mentioned in the text, but the ragged edge of the pubescence on that part might suggest the presence of such structures.

O. acutissimus, var. *propinquus* v. nov.

♀. 6 mm. long. Larger than the type of the species, and stouter, the thorax and abdomen relatively wider. The yellow spots on the third and fourth tergites in the type, which do not appear to have lost their original tint, are nevertheless much paler than in this variety, where they are of a bright chrome yellow, like the spots on the rest of the tergites. The fifth tergite has a yellow spot on each side (absent in the type), and all the abdominal markings are larger than in the type. The sculpture is deeper, and on the abdomen somewhat denser. The mucro is longer, less acute than in the type of the species, and resembles that of *O. paucipunctatus* Arn. The second to fifth tergites are exceptional, since they have lateral apical teeth almost as well developed as those of the ♂. They are also to be seen in the type of the species, but there they are very small. Tegulae brownish yellow, axillary sclerite blackish, as in the type of the species. The yellow markings on the legs are larger, and the upper side of the posterior femora, excepting the extreme apex, is bright lemon-yellow. The tarsi are fusco-ferruginous, with the basal joint darker.

♂. 4.3-6 mm. long. Tarsi ochreous, including the last two joints. Anterior tibiae reddish yellow below, the hind tibiae with a black streak below. Pubescence of the face and clypeus brassy golden. The yellow spots on the scutellum are smaller than in the ♀, and the apical portion of the mucro is piceous. The paler parts of the flagellum are darker than in the ♀, or reddish ochreous; the scapes are often ochreous only at the apex in front. Mandibles reddish ochreous, piceous at the apex, black at the base. Otherwise like the ♀ in colour, pubescence and sculpture. The lateral teeth of the tergites are stronger than in *paucipunctatus* ♂. The apex of the mucro is less rounded than in that species, and the mucro is relatively longer.

Sawmills, Khami, Bulawayo, S.R., October-December, common; Pietersburg, Transvaal, October (R. H. R. Stevenson).

Types in R.M. coll. (R.M. and T.M. colls.).

O. paucipunctatus n.sp. (figs. 14, 14 a and b).

♀. 5-6 mm. long. Closely related to *acutissimus* but with a very different sculpture. In coloration it differs from that species as follows. The black, especially on the abdomen, has a faint brassy tinge. The scapes are black, with an elongate patch of lemon yellow in front at the apex. The flagellum is dark brown at the base (somewhat paler below), and becomes gradually paler towards the apex so that the seventh and following joints are almost entirely reddish ochreous. The anterior tarsi and the underside of the anterior tibiae are reddish yellow, the upper side of the latter lemon yellow. The middle and hind tarsi are brownish yellow, with the apical joint darker. The apex of the middle and hind femora, and a streak on the under side of the former, are pale whitish yellow; the middle and hind tibiae are also of that colour but have a brownish streak below. Tegulae pale yellow in front, brown behind. The first five tergites have apical bands of lemon yellow, interrupted in the middle, which become increasingly narrower on each succeeding segment. The apical halves of the sternites are covered with a fairly dense, whitish and exserted pilosity. Clypeus and lower two-thirds of the face with silvery pubescence, dull, finely and closely punctured; the upper part of the face and the vertex finely, shallowly and rather sparsely punctured, slightly shining between the punctures. The latter are separated by spaces which are about two to three times wider than the punctures. A space between the posterior ocelli and the eyes is shining and almost smooth. Mesonotum, scutellum and tergites shining, finely, shallowly and not closely punctured; the punctures on the mesonotum not contiguous except near the anterior lateral angles, widely separated on the scutellum, and separated on the second tergite by spaces about three times the width of the largest puncture. Median impression on the first tergite shallow. Wings hyaline, the veins ochreous, the costa brownish yellow. The space between the eyes and the posterior ocelli is half as great again as the diameter of one ocellus. Mandibles reddish yellow, the base, apex and inner margin fusco-ferruginous. First joint of the flagellum as wide as long, the second and last one-fourth longer than wide, the other joints as wide as, or wider than long. The mucro is less acute than in *acutissimus*. Otherwise like that species.

♂. 4-5 mm. long. Scapes and first joint of the flagellum chrome yellow, the former with a black spot behind. Flagellum ochreous, the second to sixth joints brownish above, the apical joint dark brown. The yellow pattern on the body is like that of the ♀, but the colour is deeper, or chrome yellow. The spots on the scutellum and the yellow markings on the femora and tibiae are more extensive than in the ♀. Last two joints of all the tarsi blackish. Pilosity on the sternites longer and more abundant than in the ♀. The puncturation is everywhere stronger than in the ♀, that of the mesonotum consisting of large, fairly shallow but not quite contiguous punctures. The tergites are shining as in the ♀. The clypeus has a high convex carina in the middle which ends as a tooth overhanging the incurved anterior margin. Between it and the lateral teeth the anterior margin is concave, and behind the concavity there is a dense brush of reddish silvery pubescence. The mucro, which is translucent ochreous on the apical half, is relatively wider than in the ♀ and less acute at the apex. The lateral margins of the scutellum are flat, not raised into vertical membranous lamellae. Mesonotum and scutellum margined posteriorly by a row of short carinae.

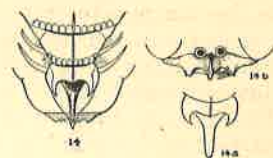


Fig. 14. *Oxybelus paucipunctatus*, ♀, posterior half of thorax; a, metanotum and mucro of ♂; b, clypeus of ♂.

Sawmills, S.R., December; Willowmore, C.P., January (G. Arnold). (R.M. and T.M. colls., types in R.M. coll.)

O. Stevensoni n.sp. (figs. 15 and 15 a).

♂. 4.5 mm. long. Black, the mesonotum ferruginous (pale burnt sienna). The following parts are bright chrome yellow: scapes and first joint of the flagellum, pronotal collar and tubercles, a vertical oblong bar at the anterior margin of the mesopleurae, two large oval spots on the scutellum, the middle of the metanotum, pre-apical transverse bands, widely interrupted in the middle, on the first four tergites; those of the first tergite very wide and extending as far as the brow of the declivous anterior face, the others decreasing in width on each succeeding tergite. The whole of the fifth to seventh abdominal segments are of the same pale ferruginous colour as the mesonotum. Second sternite with a dull yellow spot on each side near the apical margin. Mandibles ferruginous, piceous at the apex. Extreme anterior margin of the clypeus also ferruginous. Flagellum excepting the first joint pale ferruginous, the apical joint dark brown. Tibiae bright chrome yellow; anterior femora yellow, their bases below pale ferruginous, the middle femora with the ferruginous colour more extensive and the hind femora ferruginous except the extreme apex which is yellow. Tarsi pale yellow, the apices of the joints ochreous. Tegulae ochreous; wings hyaline, the veins brown. Epinotal mucro blackish, the apical part testaceous. Pubescence on the clypeus, face and temples silvery. Mesonotum with a very thin yellowish, the mesopleurae with coarser and silvery, and the abdomen with a sparse and whitish pubescence. Clypeus dull and finely punctured in front, smooth and shining posteriorly. Lower half of the face dull and finely punctured, the upper half and the vertex with larger punctures, the spaces between them smooth and shining. The punctures on the ocellar area are smaller and closer together than elsewhere. The occiput and posterior part of the vertex are very coarsely punctured, the spaces between shining and slightly aeneous; the occiput and temples lack the transverse rugosity which is present in most of our other species. Mesonotum shining, with punctures as large and deep as those of the occiput, many of which are separated by spaces fully three times the diameter of one of the punctures. Mesopleurae less deeply punctured than the mesonotum. Scutellum shining, as coarsely punctured as the mesonotum but less closely, not carinate in the middle except near the posterior margin. Metanotum with a low median carina and one or two indistinct rugae on each side. Sides and declivity of the epinotum transversely rugose, the declivity more closely so than the sides, the spaces between the rugae reticulate and slightly shining. Dorsum of the epinotum obliquely and not closely rugose, the spaces between with a superficial reticulation. Tergites 1-5 strongly and closely punctured, the punctures becoming gradually smaller on each succeeding segment, those on the first tergite as large as on the mesonotum. Sixth and seventh tergites with a few large and shallow punctures, the seventh subquadrate, wider than long. Sternites 1-6 shining, very sparsely punctured, the second with large and shallow punctures, the rest with small ones. Seventh sternite dull and punctulate. The median area of the clypeus has the anterior margin depressed, tridentate, the median tooth

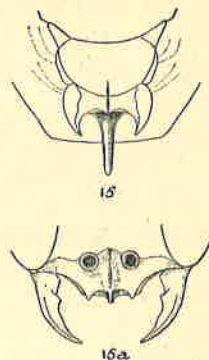


Fig. 15. *Oxybelus Stevensoni*, ♂, posterior half of thorax; a, clypeus.

being formed by the end of the rather broad longitudinal carina. Face narrowest a little below the middle, one-fourth longer than wide at that point. Scutellum nearly twice as wide in front as long in the middle, the sides with narrow transparent lamellae. Metanotal squamae transparent, hyaline, the outer edge pale ochreous, rostriform, acute at the apex and as long as the scutellum. Epinotum with a long and hollowed-out mucro, almost parallel-sided over the greater part of its length, slightly narrowed towards the apex which is fairly acute. It is as long as the scutellum plus half the middle of the metanotum. Calcaria and spines on the legs pale yellowish white.

Bulawayo, September, 2 ♂♂ (R. H. R. Stevenson). Type in coll. Stevenson, paratype in R.M. coll.

This is a very distinct species, easily recognised by its ferruginous mesonotum and long mucro.

O. matabele n.sp. (figs. 16, 16 a and b).

♀. 6-7 mm. long. Black; scapes and first two or three joints of the flagellum dark brown, the rest of the flagellum ochreous. Mandibles piceous at the base and apex, the middle third yellowish red. Anterior tarsi and inner side of the tibiae dirty yellow; middle and hind tarsi with the first three joints brown, the rest brownish ochreous. Calcaria yellowish, spines on the legs white, pulvilli black. Tegulae dark brown. The trans-

parent metanotal squamae dirty yellowish and opaque on their inner sides. In contradistinction to most of the species of this genus the abdomen is mainly black; the depressed apical margins of the first four tergites are yellowish grey, and behind and adjacent to the apical margins there are very narrow, pale yellowish transverse bands. These are widely interrupted on the first, less so on the others. In some examples this yellow band is obsolete on the first and fourth, and much reduced on the second and third tergites. The apical margins are covered with silvery pubescence, forming distinct transverse fasciae. Extreme apex of the pygidium piceous or fusco-ferruginous. Head, thorax, abdomen, femora and tibiae covered with a very short, adpressed and silvery pubescence, longer and fairly abundant on the face and pronotal collar, very scanty on the mesothorax, and inconspicuous on the abdomen excepting the declivous face of the first tergite. The lateral areas of the epinotal dorsum are, however, covered with a dense silvery pubescence which completely obscures the underlying sculpture. Head dull, the face and clypeus closely and finely punctured, the vertex more strongly so. Lower half of the temples shining and striate, the upper part and the occiput with the usual punctate-striate sculpture. Mesonotum dull, strongly and closely punctured, the scutellum more coarsely and less closely, shining between the punctures. Metanotum rugose and punctate, dull; the squamae convex on both sides, bifid at the apex, the outer lobe transversely ribbed and acute at the apex, the inner one rounded at the apex. Epinotal process very shallowly gutter-shaped, slightly amplified from the basal third to the apex, the floor dull and fairly flat, the apical half finely rugose, the middle with a few transverse striae, the apical margin shallowly excised in the middle, the apical lobes rounded. It is twice as long as wide at the base. Upper part of the mesopleurae transversely and

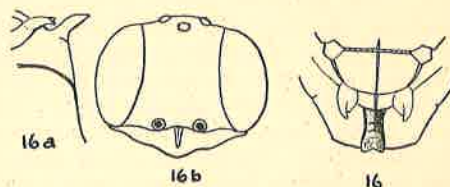


Fig. 16. *Oxybelus matabele*, ♀, posterior half of thorax; a, lateral view of epinotum; b, head.

shallowly sulcate, with a few punctures in between; the lower half and the mesosternum are slightly shining, very sparsely and coarsely punctured. Metapleurae dull, transversely striate, reticulate-rugose above. Sides of the epinotum dull, transversely and closely striate, the declivity reticulate-punctate, its triangular median fovea transversely rugose. Tergites dull, closely and strongly punctured, the punctures becoming gradually smaller on each succeeding segment; on the second they are separated by spaces not wider than the punctures. Pygidial area with large and elongate punctures. Sternites shining, with rugulose depressed apical margins, sparsely punctured with large and very shallow punctures, except at the sides where the puncturation is closer and smaller. Face widest at the middle, one-fifth longer than wide. Anterior margin of clypeus rounded, the median area longitudinally carinate in the middle. Second joint of the flagellum as long as the first. Posterior ocelli separated from the eyes by a space a little greater than their own diameter. Scutellum twice as wide at the base as long in the middle. Anterior metatarsus with six spines. Wings hyaline, the veins ochreous, the stigma and costa brownish.

♂. 6 mm. long. Mandibles black, with a ferruginous bar a little behind the apex. Flagellum dark brown above, brownish yellow below. Metanotal squamae greyish and translucent outwardly, black inwardly. Tergites with the depressed apical margins dark brown, pubescent as in the ♀, but without the transverse yellow bands which are present in that sex. Anterior tibiae and tarsi darker than in the ♀, the middle and hind tarsi dark brown, becoming paler towards the apical joint. Veins of the wings brown. Clypeus and face moderately shining, the lateral teeth on the clypeus broadly truncate. Face sparsely and more strongly punctured than in the ♀, and similarly also the mesonotum and scutellum. The mesopleurae in front of the episternal suture are strongly but not closely rugoso-striate transversely, and behind the suture are very coarsely reticulate rugose above, vertically rugose below, with large shallow punctures in between. The dorsum of the epinotum lacks the dense silvery pubescence which is present in the ♀, so that the sculpture is plainly visible. It consists of strong rugae radiating outwards from below the epinotal process. The latter is of the same general form as in the ♀, but relatively narrower, being two and a half times longer than wide at the base; its apex is only shallowly excised. The third to sixth tergites have a short translucent tooth on each side of the apical margin.

Nesting in sandbanks of the Umgusa River, Sawmills, S.R. (G. Arnold), October to January. Types in R.M. coll. (R.M. and T.M. colls.).

O. Braunsi n.sp.

♀. 5 mm. long. Black; scapes pale yellow, with a black streak behind, flagellum ochreous, somewhat darker basally. Mandibles reddish ochreous, the base and apex reddish brown. The following parts are chrome yellow: a very narrow and short streak on each side of the pronotal collar, the pronotal tubercles, an oblique spot on each side of the scutellum near the lateral margin, the lateral trabeculae of the scutellum and metanotum, the inner edge of the metanotal squamae, and very narrow preapical transverse bands on the first four tergites, only those on the first and second being narrowly interrupted in the middle. The depressed apical margins of the first four tergites dull grey. Upper side of the anterior and middle tibiae, upper basal third of the hind tibiae and the extreme apex of the anterior femora, pale ochreous. Tarsi dull ochreous, those of the middle and hind legs suffused with fuscous. Wings hyaline, veins and tegulae ochreous, costa and stigma pale brown. Head, mesothorax, lateral areas of the epinotal dorsum and declivous face of

the first tergite clothed with an adpressed golden pubescence, dense and obscuring the sculpture on the clypeus, face and lateral areas of the epinotal dorsum, scanty elsewhere.

Apical margins of the first five tergites with similar pubescence. Face and vertex sharply punctured, the puncturation not dense, the spaces between the punctures shining. Ocellar area more coarsely and less closely punctured. Mesonotum and scutellum evenly punctured, the punctures on the mesonotum a little larger than those on the ocellar area, separated by shining spaces which are mostly wider than the punctures themselves. Pronotal collar almost as long in the middle as at the corners, dull and transversely rugulose. Mesopleurae shining, sparsely and coarsely punctured and transversely striate. Metanotum with a few rugae on each side of the median carina. Scutellum longitudinally carinate in the middle. Sides of epinotum closely and transversely striolate. Declivity and dorsum of the epinotum dull, finely reticulate-punctate, the declivity with a transverse rugulosity in addition. Tergites dull; the first more closely and more finely punctured than the mesonotum, tergites 2-5 closely punctured, the puncturation equal on all four segments and clearly smaller than on the first. Pygidial area triangular, a little longer than wide at the base, the apex narrow, coarsely punctured and covered with short reddish yellow hairs. Sternites shining, the second with a large, very shallow and sparse puncturation, the 3-5 with a few shallow punctures near the apical margin.

Clypeus bluntly carinate lengthwise in the middle, its anterior margin transverse, with a small tooth on each side of the median area. Face wide, narrowest above the middle, one-fifth longer than wide at that point. Mesonotum three and a half times as long in the middle as the scutellum, the latter wide, or fully two and a half times wider in front than long in the middle, its lateral margins raised into feeble translucent lamellae. The metanotal squamae and the epinotal process are shaped like those of *O. solitarius* Arn., but the squamae are wider. The epinotal process is almost as long as the scutellum and metanotum taken together, and is only slightly widened apically.

Allied to *O. solitarius*, but differing in the colour of the pubescence and the sculpture of the mesopleurae.

Sunday River, C.P., November (Dr H. Brauns), 1♀. Type in coll. Brauns.

O. solitarius n.sp. (figs. 17, 17 a and b).

♂. 5-6 mm. long. Black; the following parts pale lemon yellow: anterior and middle tibiae on the upper side, a streak on the outside of the fore and middle femora from the apex to the middle, a shorter streak on the hind femora, the pronotal collar and tubercles, a longitudinal and narrow streak on the lateral margins of the scutellum, the metanotum and inner half of its squamae, and transverse apical bands, slightly broken in the middle, on the first six tergites. Anterior tibiae below and the middle and hind metatarsi brown. Anterior tarsi ochreous, the middle and hind pair pale ferruginous. Mandibles fusco-ferruginous, the base and apex black. Scapes dark brown, flagellum brownish over the basal half, becoming gradually paler or brownish ochreous towards the apex. Tegulae testaceous, with pale yellow spots in front and at the side. Epinotal process dark brown basally, testaceous at the apex. Clypeus, face and temples with a rather coarse and not dense, silvery pubescence. Thorax with a short and sparse whitish pubescence, the lateral areas of the epinotal dorsum covered with longer and silvery hairs which obscure the underlying sculpture. Abdomen with a fine greyish pubescence, not conspicuous except on the apical margins of the segments. Sternites with

some longer exerted hairs on the apical margins. Head and mesonotum dull, closely and finely reticulate-punctate, the punctures smallest and most dense on the face. Scutellum coarsely punctured. Mesopleurae strongly rugoso-punctate, the metapleurae transversely rugose, sides and declivity of epinotum dull, closely transversely striate, the striae strongest on the sides of the epinotum near the dorsum. Median area of the epinotum small, slightly shining, with two or three oblique rugae on each side of the middle, the space below the epinotal process dull, finely and closely punctulate. Tergites dull, closely and not coarsely punctured, the punctures on the first tergite the largest, but hardly twice as large as those on the second. First sternite dull and closely punctured, the other sternites shining, the second shallowly, sparsely and coarsely punctured in the middle, closely and finely so at the sides, the third to fifth sternites with a few large punctures in front of the apical margin. Mandibles long, with a tooth at the basal third of the inner margin. Clypeus semicircularly excised in the middle of the anterior margin, and with a small tooth on each side at some distance from the excision, carinate longitudinally in the middle, the carina ending in a tooth which projects beyond the median excision. Second joint of the flagellum a little longer than the third. Posterior ocelli separated from the eyes by a distance slightly greater than their own diameter. Pronotal tubercles, viewed from above, produced outwards into a sharp broad tooth. Mesonotum twice as long as the scutellum. Epinotal process gutter-shaped, slightly narrowed over the basal third, the sides beyond that part moderately raised, traversed by two or three rugae, the apex shallowly and angularly excised in the middle, the apical angles rounded, a little more than twice as long as wide at the apex and about as long as the scutellum. Metanotal squamae narrow, falciform, fully twice as long on the outer edge as wide at the base, free almost to the base, the apex acute, the inner edge feebly festooned. The median carina on the scutellum is low, that on the metanotum high, and viewed from the side ends in a projecting tooth. Spines on the tibiae and tarsi whitish, calcaria of the hind tibiae ochreous.

Sawmills, S.R., October, 2 ♂♂ (G. Arnold); Rhodesdale, S.R., November, 2 ♂♂, Bulawayo, 1 ♂ (R. H. R. Stevenson). Type in R.M. coll.

In the examples from Rhodesdale and Bulawayo the epinotal process is almost parallel-sided, longer and less curved at the basal third than in the type of the species, and about two and a half times longer than wide. In these specimens the pubescence on the lateral areas of the epinotal dorsum is also less dense, and in two of them the posterior tarsi are pale ferruginous.

O. ruficaudis Cameron (figs. 18 and 18 a-c). *Records Albany Museum*, p. 208, ♀. 1905.

O. capensis Cam., ♂, *ibid.* p. 209.

♀. 7 mm. long. Black. Mandibles reddish yellow at the base, piceous at the apex. Tibiae, tarsi, apices of the femora on the inner side, lower surface of the flagellum, tegulae, base of the costa of the forewing, apical third of the epinotal process, apex of fifth and the whole of the sixth abdominal

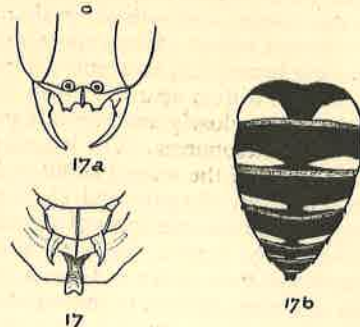


Fig. 17. *Oxybelus solitarius*, ♂, posterior half of thorax; a, clypeus; b, abdomen.

segment, ferruginous. Posterior tibiae brown above. Pronotal tubercles, pronotal collar, a round spot on each side of the scutellum in front, metanotum in the middle, and subelliptical spots on each side of the first four tergites, pale lemon yellow. These spots on the abdomen become progressively smaller on each succeeding segment. Clypeus and face with silvery pubescence, side of thorax with a sparse whitish pubescence. Head, mesonotum, scutellum and tergites closely and strongly punctured, the head with smaller punctures than the mesonotum. The largest punctures are on the first tergite, those on the middle of the second about as large as those on the mesonotum. Pygidial area with an elongate and close puncturation, and covered with yellowish setae. Mesopleurae strongly punctured, behind the episternal suture also transversely rugose. Epinotal process gutter-shaped, shining, widened towards the apex, twice as long as wide at the base, the apex deeply and semi-circularly emarginate in the middle, the apical angles rounded, the floor with one or two strong, curved and transverse carinae at about the middle. Clypeus short, strongly carinate in the middle, the basal half of the carina prominent,

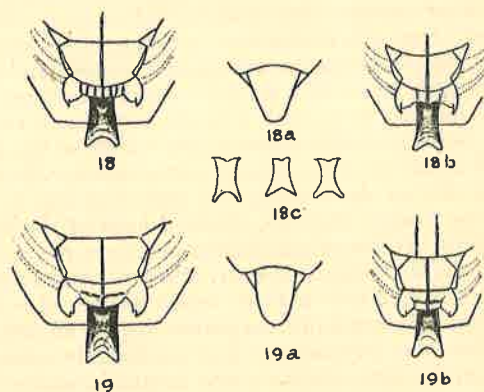


Fig. 18. *Oxybelus ruficaudis*, ♀, posterior half of thorax; a, pygidium; b, posterior half of thorax of ♂; c, three forms of epinotal process in the ♂.

Fig. 19. *Oxybelus natalensis*, ♀, posterior half of thorax; a, pygidium; b, posterior half of thorax of ♂.

the anterior margin of the median area straight and ending in two very short and blunt teeth on each side. Face narrowest in the middle, half as long again as wide at that point. Scutellum and metanotum carinate in the middle. Metanotal squamae bifid at the apex. Sides of epinotum transversely striate in front, reticulate-rugose behind; the declivity transversely rugose and reticulate between the rugae. Pygidial area a little longer than wide at the base. Spines and calcaria of the legs pale ferruginous (not white as stated by Cameron). Wings hyaline, the veins pale brown.

This description is based on the type belonging to the Albany Museum, Grahamstown. In Rhodesian specimens the legs are redder, the posterior tibiae being wholly ferruginous, and the middle and hind femora are ferruginous over at least the apical third. The anterior tibiae at the base above and the anterior and middle femora at the extreme apex below are lemon yellow. The epinotal process in Rhodesian specimens is piceous, with the lateral margins and apex translucent and fuscous; it varies somewhat in shape, in some specimens being almost parallel-sided, and in others gradually but distinctly amplified towards the apex.

♂, 5-5.5 mm. long. Colour pattern like that of the ♀, but the yellow is brighter, and in addition the scapes and first joint of the flagellum are also of that colour. In the ♀ the sides of the pronotal collar next to the tubercles are black, whereas in this sex the whole of it is deep lemon yellow. The tibiae, anterior and middle femora in front and their apical two-thirds behind, and the apex of the hind femora are lemon yellow. Tarsi yellow, becoming gradually reddish yellow towards the apex. Basal two-thirds of the mandibles yellow, the apex black, the inner margin reddish. The apical half or less of the fifth abdominal segment, and the whole of the sixth and seventh are ferruginous. The apical lateral spines of the tergites are of a reddish colour, the sixth has also an inner pair of teeth just behind the apical margin. Pubescence of the face brassy-silvery, ending somewhat abruptly a little above the middle. The pubescence on the tergites consists of short hairs arising from the punctures, which are black on the first four tergites, paler on the rest. The vertex in most specimens has a faint bronzy lustre. The sculpture of the head and thorax somewhat stronger and closer than in the ♀. The epinotal process is as a rule more widened apically than in the ♀ but the shape is decidedly variable; usually the apical excision is more or less rounded, but it may also be obtusely angular (see fig. 18 c). The apical half is translucent testaceous, the basal portion black. Pygidial area almost quadrate, slightly longer than wide. Clypeus with the anterior margin depressed, longitudinally carinate in the middle, the carina ending in a blunt tooth; on each side of the median area the anterior margin has two small teeth, and behind them there is another and blunter tooth. Otherwise like the ♀. I have seen the type of *capensis* Cameron which is undoubtedly the ♂ of this species.

Not a very common species but widely distributed throughout South Africa and Rhodesia. (R.M. and T.M. colls.)

O. ruficaudis, var. *melanarius* v. nov.

♀. 5-8 mm. long. Scapes and femora brownish black, the anterior femora without a spot of yellow at the apex, but like the middle femora their apices underneath are dark ferruginous. Fifth tergite entirely black, pygidium ferruginous or sometimes almost black, in the latter case the yellow maculae on the tergites are very much reduced. In the smaller examples the yellow maculae on the fourth tergite are sometimes absent.

♂. 5-7 mm. long. The specimens which I attribute to this variety have the anterior and middle femora black on the basal two-thirds of the upper surface and also in front and behind, the outer side including the whole of the apical third is lemon yellow. Posterior femora black, their apices lemon yellow. The last two abdominal segments are ferruginous as in the type of the species. The yellowish erect pilosity on the vertex is longer and more abundant. Otherwise like the type of the species. This variety varies in size a good deal more than the type of the species, and at first glance might be regarded as a variety of *Peringueyi*, but it differs from that species in sculpture, the shape of the metanotal squamae and epinotal process, wherein it shows a close relationship to *ruficaudis*.

Willowmore, Port Elizabeth and Ladismith, C.P., January to April (Dr H. Brauns). Type in coll. Brauns. (R.M. and T.M. colls.)

O. natalensis n.sp. (figs. 19, 19 a and b).

♀. 7 mm. long. Black. Antennae, all the femora and tibiae, the epinotal process excepting the base in the middle, tegulae and apical segment of the abdomen, ferruginous. The anterior tibiae are yellow on the outer side. Tarsi flavo-ferruginous. Wings hyaline, tinged with yellow, the veins and

stigma brownish ochreous. Mandibles pale yellow at the base, darkening to fusco-ferruginous at the apex. Pronotal collar and tubercles, a spot on each side of the scutellum, a small spot on the inside of the metanotal squamae and transverse maculae on each side of the first five tergites, deep chrome yellow. The maculae on the first four tergites are widely separated, those of the fifth joined together in the middle.

The yellow coloration of the tergites is of the same pattern and tint as in *O. flaviventris* (see fig. 13). In *ruficaudis* Cam., to which this species is related, the yellow is much paler, the maculae smaller and confined to the first four tergites. Pubescence like that of *ruficaudis*. The sculpture is also similar, but distinctly finer and shallower everywhere, and the mesopleurae have a few transverse rugae in addition to the puncturation. The clypeus has the median carina much more strongly developed than in *ruficaudis*, more prominent basally, where it forms a blunt conical tubercle. The face is much wider than in *ruficaudis*, being as wide at its narrowest point as it is long. The mesonotum and scutellum are very convex lengthwise, much more so than in *ruficaudis*, especially the scutellum which is highest at about the posterior third (in the middle in *ruficaudis*). Both the scutellum and metanotum are strongly carinate longitudinally in the middle, but the metanotum is longer than in *ruficaudis*, being fully half as long in the middle as the scutellum (only one-third in the other species). The metanotum also has a transverse carina on each side, whereas in *ruficaudis* there are only three short longitudinal carinae on each side of the middle one. The metanotal squamae are longer and more convex on the outer margin. The epinotal process is gutter-shaped as in *ruficaudis* but it is longer and parallel-sided. The abdomen is distinctly cordate and much wider than in *ruficaudis*; it is one-fourth longer than wide at its widest (across the second segment), whereas in *ruficaudis* it is half as long again as wide. The pygidial area is narrower or nearly semi-elliptical, and not subtriangular as in *ruficaudis*.

♂. 5 mm. long. Flagellum brown, slightly paler towards the apex. Scapes straw yellow in front, ferruginous behind. Tibiae and tarsi yellow, the posterior tibiae with a black streak below. Femora ferruginous. Veins and stigma of the wings dark brown, otherwise coloured like the ♀. Face narrower than in the ♀ and resembling that of *ruficaudis* ♂, being half as long again as wide at its narrowest point. The puncturation of the mesonotum is not so close as in *ruficaudis* ♂, but it is a little coarser and deeper. On each side of the middle there is a wavy longitudinal carina which nearly reaches the anterior margin. Scutellum subquadrate, about as wide behind as in front, the posterior margin nearly straight. In *ruficaudis* the scutellum forms almost a semicircle, the convexity forming the posterior margin. The yellow spots on the scutellum are much reduced, and in one specimen almost obsolete. As in the ♀ the metanotum is long, being two-thirds the length of the scutellum; in the middle it is entirely black, but the squamae are translucent and yellowish. The epinotal process resembles that of *ruficaudis* ♂, but is longer and flatter, the sides being less raised. Puncturation of the abdomen stronger than in *ruficaudis* ♂, the largest punctures on the first tergite are distinctly larger than those of the mesonotum. Otherwise like the ♀.

Stella Bush, Durban, 1 ♀, type; Malvern, Natal, 1 ♀ (C. N. Barker); Doonside, Natal, 2 ♂♂, type (A. L. Bevis); Durban, 1 ♂ (E. C. Chubb). Types in the Durban Museum, paratypes in Rhodesia Museum.

O. Peringueyi Saussure (figs. 20 and 20 a-c). Grandidier, *Hist. Madagasc.* xx, p. 563, ♀. 1892.

♀. 5-7.5 mm. long. A species allied to *ruficaudis* Cam., with the same form of epinotal process, but differing by the coloration, considerably finer

puncturation, especially of the tergites, and by the shining surface between the punctures on those parts.

Black. The basal half of the mandibles, a longitudinal streak on the front of the anterior tibiae, the lateral angles of the pronotal collar, the pronotal tubercles, the metanotum, an elongate spot at the extreme base of the middle and hind tibiae, and transverse and fairly small spots on each side of the first four tergites, pale whitish yellow. Scapes and first three joints of the flagellum blackish, the remaining joints pale ferruginous, the apical half of the last joint fuscous. Apex of pygidium ferruginous; the depressed apical margins of the second to fifth sternites flavo-testaceous. Tegulae brownish ochreous, with a small spot of whitish yellow in front. Wings hyaline, very slightly tinged with fuscous yellow, the veins and stigma brown. Face and temples with a silvery pubescence, not very dense. Vertex and mesonotum with a yellowish grey and erect pubescence, fairly long on the former. The scutellum and metanotal squamae have a yellowish pilosity, sparse but quite noticeable. Mesopleurae with a sparse whitish pubescence below, the lateral areas of the epinotal dorsum with decumbent greyish pubescence, fairly

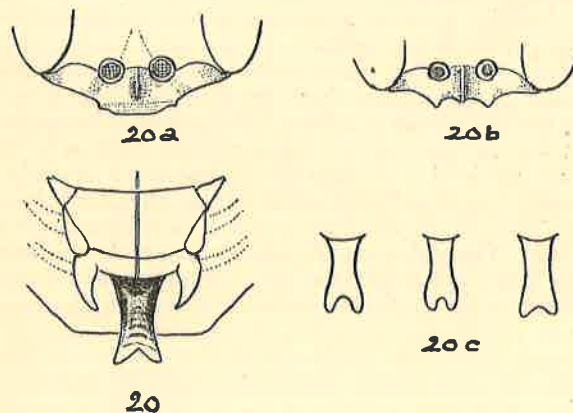


Fig. 20. *Oxybelus Peringueyi*, ♀, posterior half of thorax; a, clypeus; b, clypeus of ♂; c, three forms of epinotal process in the ♂.

dense but not obscuring the sculpture. Tergites 1-5, and sides of the second sternite with greyish pubescence, fairly long and conspicuous on the apical margins. Face finely and closely punctured, dull; towards the vertex and on it the punctures become larger and are more widely separated, a small area in front of each ocellus sparsely punctured and shining. Pronotum slightly shining and rugulose. Mesonotum and scutellum deeply punctured, shining between the punctures, the average space between the punctures being at least equal to the width of a puncture. Mesonotum with traces of transverse rugae on the sides in front, longitudinally impressed in the middle over the anterior half, and carinate on the posterior half. Scutellum and metanotum carinate longitudinally in the middle. Metanotum shallowly punctured and shining. Mesopleurae shining, sparsely and coarsely punctured except over the upper anterior angle and the lower margin, where the punctures are closer and finer than on the mesonotum. Metapleurae and sides of epinotum transversely striate, the latter finely so and punctulate between the striae. Declivity of the epinotum, lateral areas of the dorsum and the apical part of the median area dull, microscopically reticulate-punctate and with a few transverse rugae near the lateral carinae. The median area on

each side of the epinotal process is slightly shining, finely rugulose and has five or six oblique carinae on each side. Abdomen shining, fairly finely and by no means closely punctured. The largest punctures, which are on the apical half of the first and the middle of the second tergites, are shallow and distinctly smaller than the smallest on the mesonotum, they are separated by spaces which on the average are three times as wide as the largest puncture. Median area of the clypeus like that of *ruficaudis*, but the anterior margin is feebly convex and the median carina shorter and more prominent, forming an almost conical tubercle. Face narrowest in the middle, the inner margins of the eyes almost parallel over their upper half. Posterior ocelli separated from the eyes by a distance equal to one and a half times the diameter of one ocellus. Pronotal collar very short in the middle, so that when viewed from above, only the lateral angles are visible. Metanotal squamae rostriform, the outer half transparent, narrower than in *ruficaudis*, the apex acute. The epinotal process, which is piceous, hardly differs from that of *ruficaudis* and varies in shape to the same extent as in that species. The apical margins of the tergites are only very narrowly depressed. Pygidial area strongly punctured, a little longer than wide at the base, the apex rounded, narrower than in *ruficaudis*. Anterior metatarsi with seven spines, the spines on the middle and hind tibiae pale brownish yellow.

♂. 4.2-6 mm. long. The colour pattern in this sex strongly resembles that of *ruficaudis* ♂, nevertheless there are constant differences which make a confusion of the two species avoidable. The yellow is distinctly paler, more lemon yellow than chrome yellow. The scapes are black as in the ♀, and the apical half of the last joint of the flagellum is fuscous. The tarsi are all darker than in *ruficaudis* ♂, varying from fuscous to pale fusco-ferruginous, the basal joints darkest. The anterior tibiae are yellow outwardly and reddish ochreous on the inner face. The yellow on the anterior femora is less extensive, being confined to the apical upper half, the rest of the upper half being black, with nearly the whole of the underside brown. Of the middle femora only the apical fourth is yellow, and even less of the posterior femora, the rest of those parts being black. The underside of the middle and hind tibiae are brownish black. Tegulae yellow. The two spots on the scutellum are usually more extensive, sometimes meeting in the middle. The apical part of the epinotal process is generally more or less translucent and ferruginous. The yellow bands on the tergites are somewhat narrower than in *ruficaudis* ♂, especially on the first, where the more or less triangular marks often meet in the middle, although they rarely extend as far as the brow of declivous base of the segment. The basal half of the fifth and the whole of the sixth and seventh segments are black, never ferruginous as in *ruficaudis*, although the extreme apical margin of the seventh is sometimes castaneous. The sculpture of the head and thorax does not differ appreciably from that of *ruficaudis* ♂, except that on the posterior third of the scutellum there are two or three longitudinal carinae on each side of the median one, whereas in *ruficaudis* ♂ that part is merely widely reticulate-rugose. The puncturation of the tergites is distinctly finer, especially on the greater part of the second tergite where the punctures are clearly smaller than those on the apical half of the first tergite. The pubescence on the vertex and mesonotum is longer than in *ruficaudis*, and the metanotal squamae, as in the ♀, have a few long and exserted hairs, entirely lacking in the other species. Pubescence on the abdomen whitish, not black as in *ruficaudis*. The character of the greatest importance for distinguishing the two species is the shape of the clypeus. In *Peringueyi* the clypeus is triangularly produced in front on each side of the middle, and there is a strong median carina which reaches the anterior

margin and ends in a tooth (this is more easily recognised if viewed from behind). The pronotal collar is not so short as in the ♀, nevertheless it is a little shorter than in *ruficaudis* ♂. The scutellum has the lateral margins raised into transparent ochreous squamae, convex above and concave below, whereas in *ruficaudis* ♂ the lateral margins merely form short vertical lamellae. The metanotal squamae are more acute than in *ruficaudis* ♂ and entire, not bifid at the apex. The median longitudinal impression on the brow of the first tergite is much shallower than in *ruficaudis*.

Parys, O.F.S. (Péringuey); Willowmore, and Oudtshorn, C.P. (Brauns). (R.M. and T.M. colls.)

O. limatus n.sp. (figs. 21 and 21 a-c).

♀. 4.5 mm. long. Black with a bronzy lustre. The following parts very pale lemon yellow: Mandibles excepting their fusco-ferruginous apices and inner margins, labrum, labium and palpi, median area of the clypeus, scapes and first joint of the flagellum, pronotal collar and tubercles, tegulae, a spot in front and a larger spot behind on the lower margin of the mesopleurae, the whole of the mesosternum, two large spots covering the greater part of the scutellum, the inner margin of the otherwise hyaline metanotal squamae, a triangular spot on each side of the first tergite, apical bands on the second to fourth tergites and sternites, the whole of the fifth and sixth sternites and the fifth tergite. The transverse bands on the second and third tergites are interrupted in the middle, and the sixth tergite or pygidium is reddish ochreous at the extreme apex. All the legs, including the coxae and trochanters are pale yellow, but the yellow is somewhat darker than on the body. The posterior tibiae are brownish on the under side near the apex, and the apical joints of all the tarsi are more or less ochreous. Flagellum ochreous below, brownish yellow above. The epinotal process is reddish hyaline, with a λ-shaped median opaque yellow area. Wings hyaline, the veins and stigma ochreous, the radius and costa along the radial cell brownish yellow. Face, temples and mesopleurae with a sparse silvery pubescence, exceedingly scanty on the mesopleurae; mesonotum with a very short and not dense pubescence, slightly golden in colour when seen from the side. Abdomen with a scanty yellowish white pubescence on the apical margins of the segments and on the pygidial area, elsewhere almost glabrous excepting the second sternite. Clypeus finely punctured and dull. Face and vertex shining between the punctures; the latter are not large, although increasing in size upwards, and for the most part are separated by spaces at least twice the diameter of one puncture. On the upper third of the face and on the vertex the puncturation is decidedly sparse. Occiput and temples striate-punctate, the striae thin. Mesonotum shining, evenly and not closely punctured, the punctures larger than those on the vertex. Scutellum shining, with a few large punctures on the posterior half and a few short longitudinal carinae in front of the posterior margin, longitudinally carinate in the middle. Metanotum rugose on each side of the high median carina. Mesopleurae shining, sparsely punctured, the punctures shallow and large. Sides of epinotum slightly glossy, strongly

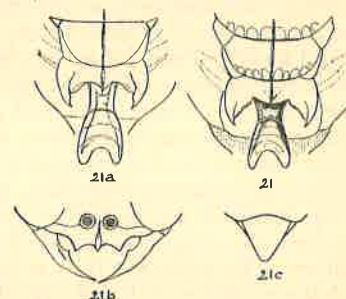


Fig. 21. *Oxybelus limatus*, ♀, posterior half of thorax; a, posterior half of thorax of ♂; b, clypeus of ♂; c, pygidium, ♀. (Dotted line on epinotal process indicates the opaque yellow area.)

and transversely striate, finely punctured between the striae. Median area of the epinotum almost dull, finely reticulate-punctate, with a few oblique rugae on each side; the lateral areas of the dorsum coarsely reticulate-rugose and dull, the declivity transversely and not closely rugose. Abdomen smooth and shining; the first tergite finely and very sparsely punctured, especially in the middle where the punctures are separated by spaces at least four times wider than one of the punctures, the apical margin more closely punctured. The second to fourth tergites are a little more closely punctured than the first, the punctures as large as on that segment; the fifth and sixth are sparsely and more coarsely punctured. Sternites shining, the second finely and closely punctured at the sides, sparsely and less finely in the middle, the remaining sternites with a few preapical punctures.

Anterior margin of the clypeus feebly convex; the median area is not carinate longitudinally in the middle but merely swollen at the base. Face wide, very nearly as wide as long. First three joints of the flagellum of about equal length. Posterior ocelli separated from the eyes by a distance less than their own diameter. Upper angle of the pronotal tubercle dentate. Scutellum with narrow translucent lateral squamae and a median longitudinal carina. Metanotal squamae rostriform, the apex acute and directed downwards, the outer margin convex, the posterior margin festooned; the median carina is fairly high in its posterior half. The epinotal process is sharply bent upwards from its basal fourth to the apical margin, which is nearly semicircularly excised, the apical lobes rounded. It is traversed by three strongly curved ridges. The process is fully as long as the scutellum and metanotum united. Abdomen distinctly broad over the basal half, cordate, about one-fifth longer than wide. First tergite with a median longitudinal impression on the brow. Pygidial area triangular, as long as wide at the base, the apex narrowly truncate. Spines on the legs pale yellow, calcaria ochreous, anterior metatarsi with six spines on the outer margin.

♂. 3.3-4.2 mm. long. Clypeus entirely black, the palpi brown. Scapes black, the extreme apex yellowish below. First joint of the flagellum yellow, with a black spot above, the rest of the flagellum brownish above and dirty yellow below. Mesothorax entirely black. Last four joints of the tarsi ochreous, the first joint and the tibiae chrome yellow, the latter with a blackish streak below. Coxae, trochanters and femora black, the apical third or more of the latter chrome yellow. Scutellum often entirely yellow excepting a small black patch in the middle of the posterior margin; tergites 1-6 with broad transverse apical bands which are not interrupted in the middle, although that of the second is narrowed at that point; seventh abdominal segment pale yellowish red. Otherwise coloured like the ♀, but the yellow is darker or chrome yellow. Punctuation of the face closer than in the ♀, the intervening spaces less shining, especially on the vertex. Mesothorax dull, the punctuation closer and much coarser than in the ♀, the punctures contiguous and larger than the punctures on the vertex. Sides of the epinotum more closely and more finely striate than in the ♀. Metanotal squamae shorter than in the ♀. Epinotal process more rapidly amplified from the basal fourth onwards, slightly narrowed just before the apex. The apical excision and the apical lobes are rather variable; in some specimens the excision is angular and wider than deep, in others it is semi-elliptical or semicircular, with the lobes widely rounded. Intermediate degrees of depth and angularity also occur. The transverse ridges on the process are sharper than in the ♀. Tergites dull, closely and finely punctured, the punctures smallest on the second but not much smaller or closer than on the other tergites. The punctures on the first tergite are a little smaller than those on the vertex. Pygidial area

subquadrate, strongly punctured. Sternites shining, their depressed apical margins smooth and impunctate; the second fairly closely, finely and shallowly punctured, the following sternites sparsely and coarsely punctured, the seventh dull and closely punctured. Median area of the clypeus with a carina which is flattened anteriorly and projects as a tooth beyond the anterior margin; on each side of it the anterior margin is strongly concave, so that its outer corners are sharply angular. Face narrower than in the ♀, the least width being only two-thirds of the length. Posterior ocelli separated from the eyes by a distance equal to their own diameter.

Anterior metatarsi with five spines on the outer margin. Otherwise like the ♀.

Sawmills, S.R., December (G. Arnold). Nesting in loose sandbanks, 3 ♀♀, 11 ♂♂. Types in R.M. coll. (R.M. and T.M. colls.)

O. flavicornis n.sp. (figs. 22 and 22 a-c).

♀. 4.3 mm. long. Black. The following parts pale lemon yellow: mandibles excepting their fusco-ferruginous apices, spots on the coxae and trochanters and the whole of the middle trochanters, femora, tibiae and tarsi, excepting a black streak on the back of the posterior femora, pronotal collar and tubercles, two large round spots on the scutellum, the middle of the metanotum, apical transverse bands on the first to fifth tergites, those of the first and second interrupted in the middle, and lateral streaks on the apical halves of the second and third sternites. Flagellum ochreous; metanotal squamae translucent yellowish, the epinotal process brown at the base and testaceous at the apex, pygidial area fusco-ferruginous. Tegulae testaceous in front, pale yellow behind. Wings hyaline, veins and stigma pale brown. Face, clypeus, temples and mesopleurae with silvery pubescence, mesonotum with a sparse, yellowish and decumbent pubescence. Abdomen with a very short greyish pubescence, the sternites with long, exerted and yellowish hairs. Pygidial area sparsely covered with yellowish hairs. Upper face, vertex and occiput with large deep punctures which are almost contiguous, the temples more shallowly punctured, and like the occiput with the usual transverse striae. Mesonotum with large and deep punctures, larger than the largest on the vertex, those in the middle separated by slightly shining spaces which are as wide as the punctures, those between the middle and the lateral margins separated by even wider spaces. Scutellum sparsely punctured, the punctures large but shallow. Mesopleurae strongly punctured, the sculpture somewhat obscured by the pubescence. Metapleurae with widely spaced strong transverse striae. Epinotum dull; the fundamental sculpture consists of a fine reticulate puncturation, over which on the sides is superimposed a fairly strong transverse rugosity, on the declivity and lateral areas of the dorsum a reticulate rugosity, and on the median area some oblique rugae. Tergites strongly and closely punctured, especially the first and second, the puncturation of all finer at the extreme base and apex than in the middle. On the first and second the punctures are contiguous, very large and deep, much larger than those on the mesonotum, those on the

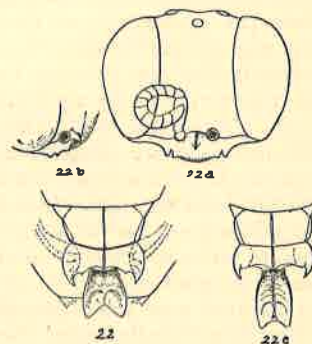


Fig. 22. *Oxybelus flavicornis*, ♀, posterior half of thorax; a, head; b, lateral view of clypeus; c, posterior half of thorax of the race *nyassae* ♂.

second not smaller than those on the first. Sternites shining, sparsely and shallowly punctured. Pygidial area slightly longer than wide at the base, coarsely punctured, the apex narrowly rounded. Anterior margin of the median area of the clypeus feebly convex, its lateral angles acute and separated by a deep cleft from a strong tooth beyond them; at the base there is a median carina which ends in a free nasiform tooth, which is more easily seen from the lateral aspect (see fig. 22 *b*). Antennae decidedly short and stout, the scapes not reaching to the middle of the face. Posterior ocelli separated from the eyes by a distance not greater than their own diameter. Shoulders of pronotal collar rectangular; pronotal tubercles, viewed from above, produced outwardly into a dentiform angle. Scutellum and metanotum with sharp median carinae, the former with narrow, fusco-hyaline lateral lamellae. Metanotal squamae transparent, as long as the scutellum in the middle, curved upwards and outwards, except the apical portion which is vertical, the apex acute. Epinotal process almost foliaceous, the lateral margins being only slightly raised, angularly and deeply excised at the apex, as wide as long at its widest part (beyond the middle), as long as the scutellum, amplified gradually from the base to a little beyond the middle and thence very slightly narrowed to the apex. It has a median longitudinal ridge and a semicircular one, more or less transverse, at about the middle; the ends of the transverse one do not extend as far as the apical angles.

♂. 3.5-4 mm. long. First three joints of the flagellum slightly tinged with brown above, the whole of the apical joint brown. The yellow on the posterior femora is more extensive than in the ♀, only the base and the basal two-thirds of the inner face being black. Metanotum black in the middle, the yellow spots on the scutellum smaller than in the ♀. Lateral areas of the dorsum and the declivity of the epinotum more strongly sculptured than in the ♀, reticulate rugose.

Pygidial area fusco-ferruginous, subquadrate, slightly longer than wide at the base, hardly wider there than at the apex. Otherwise like the ♀ in colour, sculpture and pubescence.

Median area of the clypeus with an angular tooth on each side, the anterior margin concave, carinate longitudinally in the middle, the carina ending in a point which projects a little beyond the anterior margin. Otherwise like the ♀.

Sawmills, S.R., December (G. Arnold); Willowmore, C.P.; Bulawayo and Sanyati River, S.R.; Palapye Road, Bechuanaland (R. H. R. Stevenson). Nesting in loose sand. A very distinct species, characterised by the colouring, short antennae and the strong puncturation of the first two tergites.

O. flavicornis, race *nyassae* n.r. (fig. 22 *c*).

♂. 3.8 mm. long. Flagellum concolorous, the apical joint not darker than the rest. Basal two-thirds of the fore and middle femora and the whole of the hind femora fusco-ferruginous. Pygidial area ferruginous. The yellow spots on the scutellum almost obsolete. Puncturation of the mesonotum and first two tergites even coarser than in the type of the species, and with larger spaces between the punctures. Scutellum shorter, the posterior margin less convex. Metanotal squamae shorter, only three-fifths as long as the epinotal process measured in the middle (almost as long in the type of the species). Epinotal process longer and narrower, widest at about the basal third, thence very slightly narrowed towards the apex, the apical margin arcuately emarginate; it is traversed by a very strong longitudinal carina from whence diverge five transverse and curved carinae on each side. Pygidial area longer than in the type of the species, parallel-sided, twice as long as wide at the base. Otherwise like the type of the species.

Langenburg, Lake Nyassa, December (Fülleborn), 1 ♂. Type in the Berlin Museum.

O. willowmorensis n.sp. (figs. 23, 23 a and b).

♀. 7 mm. long. Black. The following parts pale lemon yellow: upper side of the anterior tibiae and extreme apex of the anterior femora, the middle femora at the apex and the greater part of the upper side of the middle tibiae, the basal third of the hind tibiae above, the pronotal tubercles, the tegulae in front, two oblique streaks on the scutellum, the metanotum including the inner half of its squamae, the apical half of the epinotal process, apical transverse bands on the first four tergites and the whole of the fifth tergite. The band on the first is interrupted in the middle, that on the second is narrowed in the middle but unbroken, and the posterior margins of the bands on the second to fourth tergites are serrated. Tarsi brown or reddish brown, with the apical joint paler. Mandibles reddish ochreous, the apical third piceous.

Scapes brownish black, the flagellum brown basally and becoming reddish ochreous towards the apex. Extreme apex of pygidium fusco-ferruginous. Wings hyaline, the veins ochreous. Clypeus and face with a dense silvery pubescence. Temples, mesothorax and tergites with whitish pubescence, scanty except on the mesonotum, scutellum and apical margins of the tergites. Face with a shallow but distinct concavity on each side a little below the level of the anterior ocellus; the pubescence ends abruptly at the upper margin of the concavity. Above it the face and vertex are sharply punctured, the punctures not close, the spaces between them shining. Pronotal collar linear in the middle, only the lateral angles being visible from the dorsal aspect. Mesonotum and scutellum sharply and evenly punctured, the punctures a little larger than those on the middle of the vertex, most of them separated by shining spaces twice as large as the largest puncture. Mesopleurae punctured in front like the mesonotum, coarsely reticulate-rugose behind and below. Metapleurae transversely striate. Sides of the epinotum shining, with a few transverse rugae above and near the hind margin. Declivity and lateral areas of the epinotal dorsum dull, punctulate, with a reticulate rugosity superimposed. Median area of the epinotum shining, with three or four oblique rugae at the sides, the area underneath the process reticulate. Tergites closely and evenly punctured, the punctures on the first smaller than those on the mesonotum and not much larger than those on the second. Pygidial area triangular, coarsely punctured, longer than wide at the base, the apex narrowly truncate. Sternites shining, shallowly, sparsely and coarsely punctured, the apical half of the sixth sternite dull, closely and finely punctured. Spines on the anterior tarsi ochreous, on the middle and hind legs pale yellowish white; the calcaria ochreous. Mandibles fairly long and narrow, with a tooth at the basal third of the inner margin. Median area of the clypeus feebly carinate in the middle, the anterior margin straight, with a blunt angle on each side. Posterior ocelli separated from the eyes by a distance not greater than their own diameter. Scutellum sharply carinate lengthwise in the middle, the

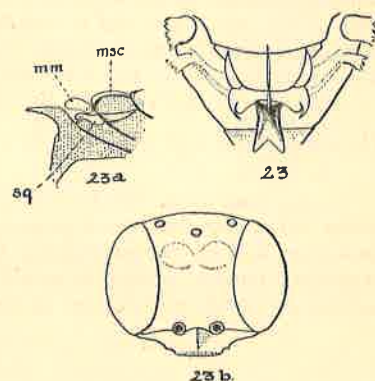


Fig. 23. *Oxybelus willowmorensis*, ♀, posterior half of thorax; a, lateral view of the same; b, head.

lateral margins with high, transparent and curved lamellae; the metanotum is strongly carinate in the middle, the carina lamelliform, its posterior end free, rounded and projecting beyond the posterior margin. Metanotal squamae convex outwardly, the apex bifid, the outer lobe unciform, the inner rounded. The epinotal process is moderately widened from the base to the apex, the latter deeply and angularly excised, the apical angles feebly rounded; it is as long as the scutellum and metanotum united, and two-thirds longer than it is wide across the apical angles. Anterior metatarsus with six spines on the outer margin, middle and hind tibiae with rather long spines on the outside.

Willowmore, C.P. (Dr H. Brauns), November. Type in coll. Brauns.

O. nasutus Bischoff (figs. 24, 24 a and b). Schultze, *Reise Süd Afr.* v, 2, p. 115, ♀. 1913.

♀. 6.5 mm. long. Black. The following parts pale straw yellow: pronotal collar excepting the lateral angles, pronotal tubercles, lateral spots on the posterior half of the scutellum, the inner hind margin of the metanotal squamae, narrow preapical bands on tergites 1-5, those on the first and second narrowly interrupted in the middle, apices of the fore and middle

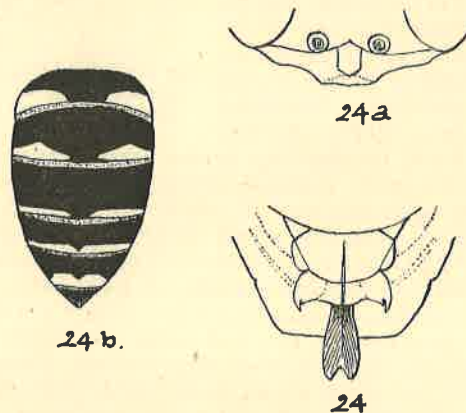


Fig. 24. *Oxybelus nasutus*, ♀, posterior half of thorax; a, clypeus; b, abdomen.

femora and all the tibiae and tarsi. Mandibles straw yellow, the apical half reddish brown. Scapes blackish, flagellum brown, paler below, the last four or five joints ochreous. The lateral lamellae of the scutellum and the metanotal squamae are whitish translucent, the epinotal process translucent and honey yellow, black at the base. Wings hyaline, the veins pale ochreous, the stigma brown. Tegulae pale testaceous, the axillary sclerite black in the middle with a pale ochreous margin. Face and clypeus clothed with a dense silvery pubescence which obscures the sculpture. A similar but less dense pubescence lies on the temples. Vertex and thorax with a rather long, erect and whitish pubescence, fairly abundant, more abundant than in the majority of our species, especially on the mesopleurae. Vertex finely and closely punctured, slightly shining, the occiput with the usual transverse striation intermixed with punctures. Mesonotum and scutellum with larger punctures than the rest of the body, moderately shining between the punctures, which are for the greater part separated by spaces about three times the diameter of the largest puncture. Mesopleurae dull and rugoso-punctate. Lateral areas of the epinotal dorsum dull, and like the declivity, finely reticulate rugose. Ter-

gites closely and rather finely punctured, the puncturation on the first and second distinctly finer than on the mesonotum. Sternites shining, the second coarsely punctured, the rest with shallow punctures near the apical margin. Clypeus with a flat nasiform protuberance in the middle; it is exerted obliquely, not reaching as far as the anterior margin, and is longer than wide and bluntly angular at the apex. The posterior ocelli are separated from the eyes by a distance equal to their own diameter. Epinotal process foliaceous, closely and obliquely striolate, twice as long as its greatest width, gradually widened from the base to the apex, which is narrowly and angularly emarginate, the apical lobes rounded.

Rooibank, hinterland of Walfish Bay, S.W.A., May (Schultze). Type in the Berlin Museum.

This species is clearly characterised by the clypeal protuberance, the long pubescence on the thorax and the shape of the epinotal process.

O. pallidus n.sp. (figs. 25, 25 a and b).

♀. 5.5 mm. long. Black, middle and hind femora, axillary sclerites and apical segment of the abdomen reddish ochreous. Mandibles excepting the

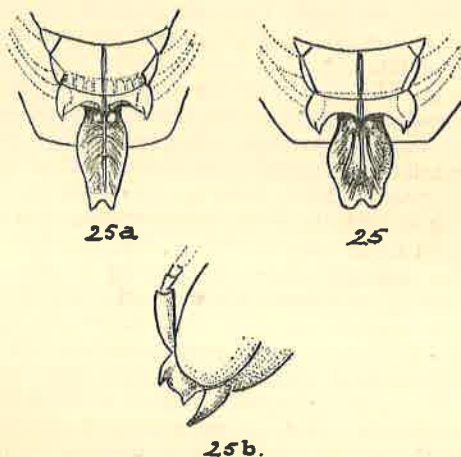


Fig. 25. *Oxybelus pallidus*, ♀, posterior half of thorax; a, the same of the ♂; b, lateral view of the clypeus, ♀.

apex, scapes and flagellum, forelegs, middle and hind tibiae and tarsi, pronotal collar and tubercles, a large macula on each side of the scutellum, inner half of the metanotal squamae and transverse bands on the first four tergites, straw yellow. The band on the fifth tergite ochreous. The tibiae have a reddish tinge, and the first four joints of the flagellum are pale brown above. The transverse bands on the tergites are unbroken except on the first two, where they are narrowly interrupted in the middle. Sternites 2-4 reddish brown in the middle, the fifth, sixth and seventh reddish ochreous. Epinotal process foliaceous, ferruginous in the middle, paler and somewhat yellowish on the lateral margins. Axillary sclerite reddish brown; wings hyaline, veins brownish yellow. Clypeus, lower half of the face, temples and mesopleurae with silvery pubescence, that on the upper half of the face, vertex and mesonotum with a yellowish tinge. Upper half of face, vertex and mesothorax closely punctured, the punctures not large, separated by spaces about as

large as the punctures. Scutellum slightly shining, a little more coarsely punctured than the mesonotum. Sides of epinotum shining, transversely and very superficially striate. Lateral areas of the epinotal dorsum very finely and closely punctured and dull, the median area indistinctly defined, rugulose and with traces of fine oblique striae. Epinotal process widest at the basal fourth, a little more than one-third longer than wide, the sides convex, the apex arcuately emarginate in the middle, the apical lobes rounded. The surface of the process is finely and obliquely striate, with a strong median longitudinal carina which is bifid from the middle onwards; on each side of it there is a shorter carina. The scutellum and metanotum are strongly carinate lengthwise in the middle; the former has the usual translucent marginal lamellae, and the squamae of the metanotum are short and wide. First two tergites very strongly punctured; the punctures are twice as large as the largest on the mesonotum and three times as large as those on the third tergite.

Pygidial area large, slightly longer than wide at the base, the apex sub-acute, coarsely punctured and clothed with pale golden setae. Sternites shining, the second and the sides of the third to fifth coarsely and not closely punctured. Median area of the clypeus with a short carina which ends before the middle in a fairly acute tooth. Face narrowest in the middle, half as long again as it is wide at that point. The epinotal process is three-fourths the length of the mesonotum.

♂. 5.5 mm. long. The middle of the anterior margin of the clypeus is ferruginous; tarsi and outer face of the tibiae paler than in the ♀, almost yellowish white. Flagellum reddish ochreous above, paler below. The maculae on the scutellum are darker than in the ♀. Sternites black, only the seventh fusco-ferruginous, the pygidial area ferruginous. Clypeus carinate longitudinally in the middle, the carina reaching almost as far as the anterior margin, not ending in a free tooth as in the ♀. Metanotal squamae more acute than in the ♀. The epinotal process, as is usual in this sex, is longer and narrower than in the ♀. It is gradually widened from the base to the basal third, where it is widest, thence narrowed towards the apex; its length is three-quarter times greater than its greatest width. The apical margin is arcuately excised, the apical lobes rounded, the upper surface is carinate longitudinally in the middle, obliquely striolate and has three curved transverse carinae on each side. The epinotal process is four-fifths the length of the mesonotum and fully two-thirds of it projects beyond the posterior margin of the epinotal dorsum. Otherwise like the ♀.

Kilimatinde, E. Africa, 1 ♀ (Claus); Kihu River (?), E. Africa, 1 ♂ (C. Schröter). Types in the Berlin Museum.

The ♀ of this species is not unlike *O. lamellatus* Ol. in the shape and fine sculpture of the epinotal process, but the puncturation of the first two tergites is very different.

O. angustus Saussure (figs. 26 and 26 a-e). Grandidier, *Hist. Madagasc.* xx, p. 563, ♂. 1892.

♀ (hitherto undescribed). 6-8 mm. long. Black. A more or less triangular and large mark on each side of the first and second tergites, and transverse bands on the apical half or more of the third to fifth tergites, pale lemon yellow. The bands on the third to fifth tergites are slightly narrowed in the middle, but sometimes they are broken there. The band on the fifth covers the whole of the segment excepting the basal fourth. The depressed apical margins of the tergites are stramineous. Pronotal collar usually entirely black, occasionally and more particularly in the smaller examples, dirty lemon

yellow. Scutellum sometimes with a small yellow spot on each side, and the inner half of the otherwise hyaline metanotal squamae are also yellow. Antennae black, the last three joints of the flagellum ferruginous below. Mandibles ferruginous, the apices black. Anterior tibiae and tarsi ferruginous, middle and hind tarsi blackish, with the last two joints fusco-ferruginous. Middle tibiae on the underside, and a small spot at the base of the middle and hind tibiae, yellow. Epinotal process ferruginous, flavo-ferruginous at the sides, blackish at the base. Tegulae stramineous, the axillary sclerite blackish with yellow margins. Wings hyaline, the veins yellowish brown, the stigma, costa and subcosta, brown. Face and temples without silvery pubescence, clothed like the rest of the body only with a short and very sparse greyish pubescence, which on the vertex is a little longer and erect.

Head closely and finely punctured, dull; mesonotum dull, closely punctured, the punctures nearly contiguous, not large but a little larger than those of the vertex. Mesopleurae shining, more strongly punctured than the mesonotum, the punctures separated by spaces about three times the diameter of one of the punctures. Metapleurae and sides of the epinotum transversely striato-rugose, the rugae becoming thinner posteriorly, the spaces between them shining. Scutellum coarsely and fairly distantly punctured, carinate lengthwise in the middle, the posterior third obliquely depressed, the lateral margins raised very slightly and ending posteriorly in a sessile triangular tooth. Metanotum coarsely rugose in the middle and sharply carinate, the carina ending in a free, rounded and cultrate process (this is more easily observed if the insect is viewed from the side). Metanotal squamae rostriform, bifid at the apex, the outer lobe acute and directed downwards, the inner blunt and horizontal. Declivity and lateral areas of the epinotal dorsum dull, very finely reticulate-punctate; median area of the epinotum slightly shining, with a few oblique rugae above, and reticulate-rugose below. Epinotal process foliaceous, lanceolate, horizontal except the basal third, widest at about the basal third thence moderately narrowed towards the apex, which is angularly emarginate and bidentate, longitudinally carinate in the middle and obliquely striate on each side of the carina. It is slightly longer than the combined lengths of the scutellum and metanotum measured in the middle. Tergites closely punctured, the punctures on each segment becoming gradually larger towards the apex, the apical margins very closely and finely punctured. The punctures are coarsest on the first two tergites, those of the second not larger than those of the first, but a little smaller and shallower than the punctures on the mesonotum. Pygidial area triangular, the sides distinctly arcuate, hardly longer than wide at the base, coarsely and fairly closely punctured, sparingly covered with pale brownish yellow setae, the apex acute. Sternites shining, the second coarsely and sparsely punctured, the third to fifth sparingly punctured basally, their depressed apical halves smooth. Clypeus carinate lengthwise in the middle, the anterior margin moderately convex and with

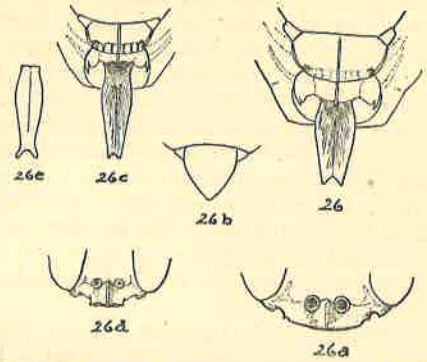


Fig. 26. *Oxybelus angustus*, ♀, posterior half of thorax; a, clypeus; b, pygidium; c, posterior half of thorax of ♂; d, clypeus of ♂; e, another form of epinotal process of the ♂.

a very small tooth on each side; between these teeth and the base of the mandibles the anterior margin is concave. Face narrowest in the middle, nearly as wide there as it is long. Anterior metatarsi with seven ferruginous spines, the calcaria and spines on the middle and hind legs ochreous.

♂. 5.3-6.5 mm. long. Mandibles paler than in the ♀. Flagellum brownish black above, reddish ochreous below. Pronotal collar and tubercles, the upper surface of all the tibiae, and apical spots on the fore and middle femora, lemon yellow. The yellow markings on the abdomen are brighter than in the ♀, and the scutellum always has a spot of lemon yellow on each side in front. Epinotal process pale yellow, translucent at the sides, blackish at the base and often more or less reddish for a short distance just behind the apex. The tarsi are paler than in the ♀, the tegulae are very pale lemon yellow in front and the seventh tergite is reddish or reddish brown. Otherwise coloured like the ♀.

Clypeus and face with a dense silvery pubescence. The pubescence on the mesothorax is more abundant than in the ♀ and of a pale yellowish colour. The sculpture is similar to that of the ♀ but the puncturation is relatively finer and closer. On the mesonotum the punctures are separated by spaces less than the diameter of a puncture, so that the sculpture is almost reticulate-punctate. The posterior third of the scutellum is more abruptly depressed and very distinctly tricarinate on each side of the median carina. The epinotal process is much longer than in the ♀ and more rapidly attenuated beyond the basal third. The apical emargination is as deep as in the ♀ but somewhat variable. The emargination is usually arcuate rather than angular, and the apical teeth or lobes are sometimes divergent (see fig. 26 e). The median carina of the process is more prominent than in the ♀. The process projects beyond the apical margin of the first tergite and measured from the base to the extreme apex is fully as long as the mesonotum plus one-third to one-half of the scutellum. The second to sixth tergites have the lateral spines well developed, and the sixth has also a blunt tubercle on each side at the apical margin. Pygidial area quadrate, the apical margin shallowly concave. Eighth ventral segment sharply bidentate at the apex, deeply and arcuately excised between the teeth. Median area of the clypeus somewhat produced, longitudinally carinate in the middle, the anterior margin rectangular on each side. Face one-third longer than wide in the middle. Otherwise like the ♀.

Willowmore, C.P., December; Lichtenburg, Transvaal, January; Reddersburg, O.F.S., December (Dr H. Brauns). R.M. and T.M. colls.

There are five closely allied but quite distinct species about to be considered for which detailed descriptions appear to be of doubtful value. These are: *lingula* Gerst., *aethiopicus* Cam., and three new species, *curviscutis*, *rubrocaudatus* and *lepturus*. In all of them the sculpture is very similar, the colour pattern of the abdomen is the same in three of them, *curviscutis*, *rubrocaudatus* and *lepturus*, the differences in the structure of the clypeus are very slight, especially in the ♂♂, and the shape of the epinotal process in all is made apparent more easily by means of illustrations than by any amount of verbal description. For these reasons I believe it will be more helpful to the reader to describe one of the group in detail, *i.e.* *lingula*, and then to arrange the diagnostic characters of the five species in the form of a comparative table, leaving general observations for inclusion in the body of the text.

O. lingula Gerstaecker (figs. 27, 27 a-e, and 32). *Zeitschr. f. d. ges. Naturw.* xxx, p. 26, nota, ♀. 1867.

O. pinnatus Sauss. Grandidier, *Hist. Madagasc.* xx, pp. 559, 562. 1890.

O. kalaharicus Bisch. Schultze, *Reise Süd. Afr.* v, 2, p. 114, ♂. 1913.

O. striatiscutis Cam. *Rec. Albany Mus.* p. 261, ♀. 1905.

O. spiniferus Cam. *Trans. S.A. Phil. Soc.* p. 226, ♀ (?). 1905.

♀. 6-8 mm. long. Black. The following parts pale whitish yellow: the pronotal collar above, the posterior margin of the pronotal tubercles, rarely a small spot on each side of the scutellum, a lanceolate mark widest medially on each side of the first tergite, a more or less triangular mark on each side of the second tergite, and narrow apical bands widest medially and interrupted in the middle on the third and fourth tergites. Extreme apical margins of the first five tergites and of the second to fourth sternites pale stramineous. Mandibles

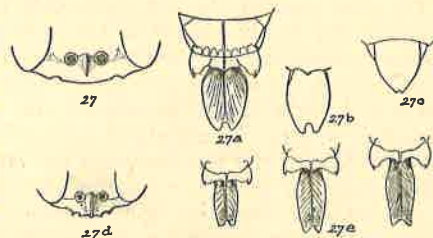


Fig. 27. *Oxybelus lingula*, ♀, clypeus; a, epinotal process; b, another form of the same; c, pygidium; d, clypeus of ♂; e, three forms of the epinotal process in the ♂.

excepting the piceous apex, flagellum, tarsi, fore and middle tibiae ferruginous; the middle tibiae somewhat fuscous above. Posterior tibiae brownish black. Femora black, the anterior pair somewhat ferruginous below, the middle pair also of that colour at the extreme apex below. The middle and hind tibiae have a minute spot of dirty white at the base above. Scapes dark brown, paler at the base and apex. Tegulae testaceous, the axillary sclerite piceous. Wings hyaline, veins dark reddish brown. Metanotal squamae translucent and flavo-hyaline. Epinotal process dark brown or almost black, the margins at the sides and apex pale ferruginous. Face and temples with a fairly sparse whitish pubescence; on the thorax the pubescence is of the same colour, very short and inconspicuous. Face dull, finely and closely punctured; the punctures increase in size towards the vertex, where they are separated by spaces two or three times the diameter of a puncture. Mesonotum closely punctured, the punctures fully twice as large as the largest on the vertex and arranged for the greater part in irregular transverse rows, the spaces between the latter somewhat shining. Scutellum longitudinally carinate in the middle, more coarsely and more sparsely punctured than the mesonotum, the posterior fifth with three short longitudinal carinae on each side. The lateral margins are slightly lamellate and reflexed, the lamella ending posteriorly in a short sessile tooth. Mesopleurae much more sparsely punctured than the mesonotum, the puncturation of the same size as on that part. Metanotum with a high median carina, which is cultrate and rounded at its free apex; the squamae are yellowish hyaline, bifid at the apex, the inner lobe rounded, the outer acute and directed downwards. Sides of the epinotum with a greasy lustre, very finely striate, with a few rugae above and near the hind margin. Declivity, including the median triangle, and the lateral areas of the epinotal dorsum dull, very finely reticulate, with a sparse network of larger rugae superimposed. Median dorsal area on each side of the epinotal process slightly shining, with a few fine and oblique rugae. The epinotal process is foliaceous, ovate, nearly horizontal except at the base, widest at about the basal third, carinate longitudinally in the middle, with three or four oblique carinulae on each side, the apex with a small semi-

elliptical excision, the apical teeth rounded. Apical margins of tergites 1-5 closely and finely punctured. The first tergite is coarsely punctured on the horizontal part, the punctures larger than those of the mesonotum and separated by wide spaces. The second tergite closely punctured basally, more coarsely and less closely elsewhere, the punctures a little smaller than those of the first tergite. The third and fourth tergites with puncturation like the second, but smaller. The fifth tergite is more strongly punctured than the fourth, but less than the second. Pygidial area scutiform, the basal two-fifths of the sides parallel, the rest converging towards the apex which is narrowly truncate and feebly excised in the middle; the surface is closely and fairly coarsely punctured and covered with pale yellowish decumbent setae. Sternites shining, the second with large, elongate and shallow punctures, the sixth finely and fairly closely punctured, the rest with a few punctures on their basal halves. Anterior margin of clypeus feebly convex, with a shallow excision on each side of the median area; the latter has a short longitudinal carina which does not reach beyond the middle. Face one-fifth longer than wide in the middle. Posterior ocelli separated from the eyes by a space a little less than the diameter of one of the ocelli. Spines on the legs pale ferruginous, the anterior metatarsus with seven spines.

♂. 5-6 mm. long. The yellow markings are of a deeper yellow than in the ♀, *i.e.* lemon yellow. The whole of the pronotal collar and the tubercles are yellow, and the spots on the scutellum are larger than in the ♀. The fifth tergite has a transverse apical band of yellow, and there is a small spot of yellow in the middle of the sixth tergite near its apical margin. The yellow mark on each side of the first tergite is acuminate medially and not truncate as in the ♀, and the bands on the second to fifth tergites are narrower and less dilated medially. Flagellum brownish ochreous, paler below, the basal joints darker than the rest, the scapes sometimes with a yellow streak in front. Tegulae testaceous, with a pale yellow spot in front, the axillary sclerite pale yellow. Epinotal process dark brown in the middle, translucent and pale amber-coloured elsewhere. Tibiae lemon yellow, darker below, the middle and hind pair brown below. Anterior and middle femora with the outer apical half or two-thirds lemon yellow, the inner side at the apex fusco-ferruginous. Tarsi stramineous, becoming darker or ochreous towards the apical joint. The depressed apical margins of the second to fifth sternites narrowly flavo-testaceous, the apical half of the pygidium fusco-ferruginous. Pubescence and sculpture as in the ♀, but the sides of the epinotum are strongly transversely rugose right across, and somewhat punctate between the rugae. The metanotal squamae are shorter, especially the outer lobe. The epinotal process is narrower and relatively longer than in the ♀; it is oblong, slightly narrowed apically and basally, widest at the basal third, strongly carinate longitudinally from the base to the apical excision, which is less angular than in the ♀. The apical lobes or teeth of the process are widely rounded, and the carinulae on each side are less distinct than in the ♀. Near the apex the process is a little concave on each side of the middle. Tergites 2-6 with well developed lateral spines, which are quite half as long as their respective tergites. The sixth has an inner pair of short teeth near the apical margin. Pygidial area subquadrate, a little longer than wide, coarsely punctured, the apical margin shallowly concave. Median area of the clypeus with a strong longitudinal carina which reaches the apical margin; the latter has two triangular teeth on each side. Face nearly twice as long as wide in the middle. Otherwise like the ♀.

The colour in this species is somewhat variable on the scapes and legs. In some examples in both sexes the front of the scape is yellow, and the

middle tibiae in some ♀♀ have a pale yellow streak on the outside. Some female Rhodesian examples have the epinotal process widest near the middle and the last three joints of the tarsi yellowish red, but they can hardly be separated as a distinct race on those grounds since the same form occurs at Willowmore, C.P., side by side with the typical form. The sculpture, and in a lesser degree the shape of the epinotal process in the ♂ are decidedly variable. The longer forms of the process with a wide apical excision are more finely obliquely rugose than the short ones with small apical excisions. The latter also have fewer oblique rugae.

Willowmore, Sundays River and Port Elizabeth, C.P.; Lichtenburg, Transvaal (Dr H. Brauns); Bulawayo, Sawmills and Victoria Falls, S.R., November to April. (R.M. and T.M. colls.)

The identification of this species is based on a paratopotype (leg. Lichtenstein) in the Berlin Museum which was compared with the type by Dr Bischoff and found to be identical. The type of *pinnatus* Sauss. in the S.A. Museum collection has also been examined by me. In regard to *striatiscutis* Cameron the identification is not so certain, since although I have seen the type in the British Museum I was not able at the time to compare it with undoubted specimens of *lingula*. Cameron's remarks concerning the affinity of this species with *ruficaudis* are quite misleading, since the epinotal process is foliaceous, whereas in *ruficaudis* it is gutter-shaped. Cameron's *spiniferus* is probably a synonym of *lingula*, but the slipshod nature of that author's description makes it difficult to identify the species with any certainty. It is described as ♀, but the reference to the lateral spines of the tergites suggest that it is a ♂. The "scutellar plate" of that author is obviously the epinotal process, the "scutellum" (9th line from top, p. 227) is the metanotum and the "metanotum" (14th line from top of page) is the epinotum. From the context it is also evident that the legs are yellow, but that "the coxae and trochanters, the four front femora broadly above, and the hind femora except at the apex" are black, and not "clear yellow*."

O. curviscutis n.sp. (figs. 28 and 34).

♀. 6.2-6.5 mm. long. ♂. 4.3-5 mm. long. October to February, Sawmills and Bulawayo, S.R.; Tanganyika Territory. For description see comparative table, pp. 108-9. Types in the R.M. (R.M. and T.M. colls.)

O. rubrocaudatus n.sp. (figs. 29 and 34).

♀. 6-7.5 mm. long. ♂. 4.7-5.6 mm. long. November to April, S. Rhodesia and Scottsburg, Natal; Tanganyika Territory. For description see comparative table, pp. 108-9. Types in the R.M. (R.M. and T.M. colls.)

O. aethiopicus Cameron (figs. 30 and 33). *Trans. S.A. Phil. Soc.* xvi, p. 328. 1906.

♀. 7-7.5 mm. long. ♂. 5-6.3 mm. long. October to February, Pearston, C.P. Ormiston, E. Griqualand, and Willowmore, C.P. For description see comparative table, pp. 108-9. (R.M. and T.M. colls.)

O. lepturus n.sp. (figs. 31 and 34).

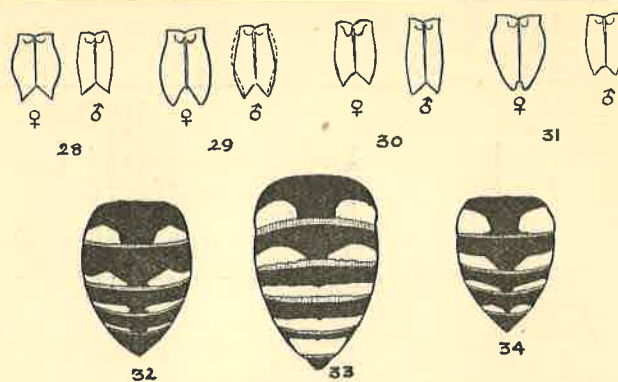
♀. 6.7-7 mm. long. ♂. 4.7-5 mm. long. September to November, Bulawayo, Sanyati Valley and Druids Mine, S.R. For description see comparative table, pp. 108-9. Types in coll. Stevenson. (R.M. coll.)

* I desire to express my grateful appreciation of the kind consideration of the Berlin Museum and Dr H. Bischoff in submitting to me for study not only the whole of their collection of Ethiopian *Oxybelus* but also the types of that genus, whereby the recognition of the species *acutissimus*, *kalaharicus* and *nasutus* has been greatly facilitated.



| Species | Epinotal process | Pygidial area | Colour of middle and hind femora | Clypeus | Colour of tegulae and axillary sclerite | Colour of antennae | Colour of maculae on the abdomen | Colour of posterior metatarsi | General remarks |
|-------------------------------|---|--|--|--|--|---|--|---|--|
| <i>lingula</i> Gerst. | Widest across the basal third or near the middle; apical excision narrow and round; colour dark brown, or black, ferruginous at the sides and apex; rugose on each side of the middle, the rugae parallel to median carina | Black, as wide at the base as long, covered with yellowish white setae | Black | Carina highest in the middle, not extending as far as the apical margin | Tegulae testaceous, axillary sclerite black or piceous, with a paler margin | Scapes blackish behind, dirty yellow in front; flagellum ferruginous or umber, paler below, the basal joints darker above | Cream, fifth tergite without pale yellow markings, entirely black | Blackish | The pubescence on the thorax is whitish; the sides of the epinotum more finely striated than in the other four species |
| <i>curviscutis</i> n.sp. | Widest across the middle; apical excision wide and angular, apical teeth acute; colour piceous, the outer third of the sides reddish brown; strongly convex transversely and lengthwise at about the middle; irregularly rugose | Black, somewhat longer than wide, setae yellowish white. (In some specimens the apex is slightly reddish, and in E. African specimens dark red with brown margins) | Red | Carina highest beyond the middle, extending as far as the anterior margin | Tegulae fusco-ferruginous, with a yellow spot in front; axillary sclerite black | Scapes pale yellow, with a black streak behind; flagellum brownish, umber above, pale yellow umber below | Chrome yellow, fifth tergite without yellow markings, entirely black | Fusco-ferruginous | — |
| <i>rubrocaudatus</i> n.sp. | Widest at the middle or a little beyond it; apical excision angular or subangular, not deeper than wide; the apical teeth not acute; colour piceous; obliquely rugose, the rugae less regular than in <i>lingula</i> | Red, longer than wide at the base, setae yellowish white | Black | Carina highest in the middle, reaching the apical margin | Tegulae blackish, axillary sclerite black. (In specimens from Tanyika Territory the tegulae are amber brown) | Scapes blackish, with a dirty yellow streak in front; flagellum pale umber, lighter below, the first three or four joints brown above | Chrome yellow, fifth tergite without yellow markings, the apical margin ferruginous | Blackish, the apex paler or fusco-ferruginous | — |
| <i>aethiopicus</i> Cam. | Widest a little beyond the middle, almost parallel-sided; apical excision angular, as wide as, or wider than, deep, the apical teeth acute; black, with brownish ochreous or ferruginous margins | Black, as long as wide at the base, setae yellowish white | Middle femora black, with a yellow streak on the whole length outside; hind femora black, with a yellow spot outside at the base | Like that of <i>lingula</i> q.v. | Tegulae stramineous, the posterior margin brown. Axillary sclerite blackish, with ochreous lateral margins | Scapes black; flagellum black, becoming fusco-ferruginous below towards the apex | Pale lemon yellow; bands on the third to fifth tergites entire, that on the fifth covering the whole of the segment and rectangular in shape | Black | Depressed apical margins of the tergites stramineous; pubescence on the thorax greyish brown |
| <i>lepturus</i> n.sp. | Widest at, or a little before, the excision; apical teeth narrow and round; apical teeth rounded, closely and finely, obliquely rugose, almost striate | Red, distinctly longer than wide at the base; setae golden | Red or blackish red | Highest in the middle, fairly low, extending almost to the anterior margin | Tegulae fusco-testaceous, the margins paler; axillary sclerite blackish | Scapes blackish behind, reddish yellow in front; flagellum pale ferruginous | Chrome yellow, fifth tergite entirely black | Black | — |

| Species | Epinotal process | Pygidial area | Colour of middle and hind femora | Colour of tegulae and axillary sclerite | Colour of antennae | Colour of sternites | Colour of maculae on the abdomen | General remarks |
|-------------------------------|--|--|---|--|--|--|--|---|
| <i>lingula</i> Gerst. | Widest at about the middle; apical excision angular, but not deep; the apical teeth fairly acute; obliquely striate; colour black; apical third ochreous; margins translucent amber | Black, apical margin fusco-ferruginous | Middle femora black, outer upper half yellow; hind femora black, extreme apex yellow | Tegulae hyaline yellow, axillary sclerite lemon yellow | Scapes black, yellow in front; flagellum fusco-ferruginous | Black | Chrome yellow | In Rhodesian specimens the apical excision of the epinotal process is shallow and round, and the striae are more transverse; the flagellum is paler apically, more reddish yellow |
| <i>curvicaulis</i> n.sp. | Widest at about the middle; apical excision angular; the apical teeth acute; less than twice as long; transversely and irregularly striate; colour as in <i>lingula</i> | Black. (E. African specimens sometimes red or reddish brown) | Middle femora ferruginous, the outer upper third yellow; hind femora ferruginous | Tegulae hyaline testaceous, with a straw yellow spot in front; axillary sclerite black | Scapes black, yellow in front; flagellum ferruginous | Black | Chrome yellow | — |
| <i>rubrocaudatus</i> n.sp. | Widest at about the middle; apical excision angular; the apical teeth acute; twice as long as its greatest width, or a little less; obliquely and finely striate; colour translucent reddish yellow, darkest at the base | Ferruginous | Middle femora black, the whole outer edge yellow; hind femora black | Tegulae pale ochreous, reddish on the inner margin; axillary sclerite fuscous, with paler yellowish brown centre | Scapes yellow with a black spot behind which does not reach the base or apex. Flagellum blackish brown above, fusco-ferruginous below, the first joint usually paler, or even yellow | Black | Chrome yellow | — |
| <i>aethiopicus</i> Cam. | Widest a little beyond the middle; apical excision angular, as wide as or wider than deep; the apical teeth acute; at least twice as long as wide; transversely rugose; colour blackish, the lateral margins and apex translucent reddish yellow | Black | Middle femora black, apical half of outer edge yellow; hind femora black; outer basal fourth yellow | Tegulae pale yellow; axillary sclerite black with pale yellow edge | Scapes black; flagellum blackish above, fusco-ferruginous below | Black | Darker than in the ♀, but paler than in the ♂ of the other four species; transverse bands on the third to sixth tergites, and often also on the second, entire; depressed apical margins as in the ♀ | — |
| <i>lepturus</i> n.sp. | Widest at about the middle; apical excision subangular, wider than deep; the apical teeth small and acute; less than twice as long as wide; obliquely and finely striate; colour translucent reddish yellow, darkest at the base | Dark ferruginous | Middle femora ferruginous, whole of the outer edge yellow; hind femora ferruginous, a spot on the outside near the apex, yellow | Tegulae and axillary sclerite ochreous, the inner edge reddish ochreous | Scapes and first joint of the flagellum pale yellow, the scape with a black mark behind which does not reach the base or apex; flagellum pale ferruginous | Black, the second and third, with a pre-apical streak of yellow on each side | Chrome yellow | — |



- Fig. 28. Epinotal process of *Oxybelus curviscutis*.
 Fig. 29. Epinotal process of *Oxybelus rubrocaudatus*.
 Fig. 30. Epinotal process of *Oxybelus aethiopicus*.
 Fig. 31. Epinotal process of *Oxybelus lepturus*.
 Fig. 32. Abdomen of *Oxybelus lingula*.
 Fig. 33. Abdomen of *Oxybelus aethiopicus*.
 Fig. 34. Abdomen of *Oxybelus curviscutis*, *rubrocaudatus* and *lepturus*.

O. metopias Kohl. *Ann. K.K.N.H. Mus. Wien*, ix, p. 285, ♀. 1894.

"♀. 6 mm. long. Vertex wide. The pronotal collar is compressed into a narrow, fine lamella, translucent at its edge, which is almost as high as the mesonotum. The mesopleurae are strongly and transversely striate, especially on the episternum and under the base of the wings. Sides of epinotum also sharply and transversely striate. Scutellum carinate in the middle. Metanotal squamae partly hyaline and partly yellowish white. The mucro is fairly wide, its white apex deeply excised. Face with whitish pubescence. The puncturation is easily visible in spite of the pubescence, and as it is not very dense in the neighbourhood of the ocelli, that part is slightly shining. The occiput is punctate and transversely striate. Mesonotum and scutellum punctured, the punctures not close together but distinctly larger than those of the vertex. ...The tergites are densely punctulate. The pygidial area is wide and triangular, almost equilateral. Metatarsus of the fore leg pale, somewhat transparent at the margins, the outer margin feebly sinuate in the middle, separating the spines of which there are seven or eight, into two groups.

Black. Pronotal tubercles, a narrow line on the collar, tegulae, two spots on the scutellum, the metanotum in part, preapical transverse bands on the first to fifth tergites, the whole of the apical segment and a large part of the ventral surface, ivory white; the greater part of the legs are also of this colour, but a part of the coxae, trochanters, the fore and middle femora, the whole of the hind femora, more or less extensive streaks on the inner side of the tibiae and the claws are brownish black. In the specimens examined the mesosternum is also spotted with white. Wings hyaline, veins pale reddish yellow. The flagellum is also reddish yellow excepting the basal joints."

Delagoa Bay (Monteiro).

O. Newvillei Magretti. *Bull. Mus. National Hist. Nat. Paris*, iv, p. 188, ♂. 1908.

"♂. Black, with yellow white markings; mandibles excepting the extreme apex, scapes and first joint of the flagellum (the other joints testaceous), pronotal collar and tubercles, tegulae, a large round spot on each side of the scutellum, almost the whole of the epinotal process (its black base excepted),

interrupted bands on the first four tergites, a complete band on the fifth, the sixth and seventh entirely, and the legs (excepting the coxae, trochanters and basal half of the femora), yellowish ivory white. Head closely and finely punctured (the occiput striolate to a slight extent), the large ocelli arranged in a low and wide triangle; face wide above, narrowing towards the antennal sockets. Margin of the clypeus distinctly tridentate. Pronotum, excepting the smooth collar, mesonotum, mesopleurae and scutellum coarsely but not very densely punctured; metapleurae longitudinally striato-rugose and shining; scutellum with a median longitudinal and lamelliform carina, postscutellum with pellucid and rostriform squamae on each side, the epinotal process canaliculate, deeply excised at the apex, bifid, the rami widely divergent; dorsum of epinotum margined by carinulae, punctulate at the sides, the median area cordiform, deeply foveate below the process, shining. Abdomen closely and coarsely punctured; segments 2-6 with subrostriform lateral spines. Pygidial area triangular, rugose. Wings hyaline, veins flavo-testaceous. The anterior metatarsi obtusely excised at the base, with six thin and long spines on the outer margin, the upper margin of the middle and hind tibiae with shorter and thicker spines. 6 mm. long."

South of Lake Rudolph, E. Africa (M. de Rothschild). Type in the Mus. National d'Hist. Nat. Paris.

O. rufipes Taschenberg. *Zeitschr. f. Naturw.* LIII, p. 781, ♀, ♂. 1880.

"♂, ♀. 4-5 mm. long. Abyssinia. The black body is closely and deeply punctate, and on the head and thorax so covered with a short pale pubescence as to give those parts a metallic sheen. Antennae, mouth parts excepting the jaws which are black at least in the middle, prothorax and anterior legs bright red (*ziegelroth*), the prothorax in the ♀ with a whitish reflection due to the pubescence. The white squamae on the postscutellum are adjacent in the ♀, separated in the ♂, the epinotal process is long and lanceolate, emarginate at the apex in both sexes, but distinctly narrower in the ♂; as the sides are whitish and as there is a median darker and radiate streak, the process shows a certain resemblance to a small leaf. The distinctly black abdomen has the smooth apical margins of the tergites light yellowish red, more distinctly in the ♂ than in the ♀, and immediately in front of them lie fasciate lateral marks which in the ♀ remain separate on the first, second and fifth tergites and are fairly large on the first and second; on the third and fourth they are united to form narrow bands; in the ♂ they are separate and form broken bands on the first four tergites, but are lacking on the fifth. The pygidial area of the ♀ is yellowish red at the apex and covered with decumbent silvery hairs; in both sexes the sternites are smooth and shining, black, with more or less reddish transverse bands. The hyaline wings have reddish yellow veins and a darker stigma. The otherwise bright red middle and hind legs have the knees, tarsi, spines and inner side of the tibiae white."

The following new species have not been included in the keys to the species, having come to my notice whilst the preceding pages were in the press. Three of them belong to the group (B) with a gutter-shaped epinotal process, and the other to the group (A) with a mucronate process.

O. Woosnami n.sp. (fig. 34 A, a, b).

♀. 7.5 mm. long. Black. Mandibles pale ferruginous, darker at the apex. Scapes and first joint of the flagellum yellowish white, with a black macula above; flagellum reddish ochreous, paler below, the second to fifth joints

brownish above. Tarsi brownish ochreous, the basal joints darker. The following parts are yellowish white: a longitudinal streak on the upper side of the fore and middle tibiae, the apex and apical half of the under side of the fore and middle femora, a longitudinal streak on the upper side of the hind femora from the base to near the apex, the shoulders of the pronotal collar, the pronotal tubercles, a spot on the front of the tegulae, a small spot, variable in size and shape, on each side of the scutellum, and the middle of the posterior margin of the metanotum. The anterior tibiae are brownish ochreous below, somewhat darker outwardly; the middle and hind tibiae brown. Abdomen with a colour pattern very similar to that of *O. flaviventris*; on the first tergite the chrome yellow maculae are like those of that species; on the second tergite there is a large transverse macula on each side which leaves the extreme base, apex and middle third of the segment black. The maculae on the third tergite, narrowed inwardly, almost meet in the middle, while the fourth and fifth tergites are wholly yellow. Sixth segment and the extreme apical margin of the fifth, ferruginous; the pygidial area as long as wide at the base, covered with short golden hairs, the apex angularly emarginate. The second to fourth sternites have yellow spots at the sides. Clypeus, face and temples with greyish white pubescence, the vertex with erect, short and brownish yellow pubescence. Minute black hairs arise from the punctures on the tergites. Face and vertex closely and fairly strongly punctured, the punctures increasing in size towards the vertex. Mesonotum and mesopleurae evenly and fairly strongly punctured, the former with the spaces between the punctures shining, the latter dull. Scutellum shining, with a few large punctures, not distinctly carinate in the middle, the posterior fourth with the usual row of short carinae. Metanotum carinate lengthwise in the middle; posteriorly it is arcuately and abruptly declivous; its squamae are fuscous-translucent, traversed by three or four ridges, and end in a sharp point. Epinotal process mucronate; the mucro is long, thin and very acute at the apex, at the basal third it is abruptly dilated to form a nearly hemispherical cup. The median area of the epinotal dorsum, under and around the process, is slightly shining, sparsely and obliquely rugose; the lateral areas of the dorsum are dull, finely punctured and irregularly rugose. Sides of epinotum shining, transversely striate. Tergites fairly dull, the first two evenly, closely and not very strongly punctured, the punctures for the greater part not so large as those on the mesonotum. The puncturation of the third to fifth tergites is smaller and not so dense as on the first and second. Pygidial area closely punctured. The apical margins of the first five tergites are depressed and more closely and more finely punctured than the rest of the segments. Sternites shining, the second sparsely and very coarsely punctured. Median area of the clypeus with a transverse shining tubercle in the middle. The anterior margin of the clypeus is moderately convex, bluntly angular in the middle, and with two equally blunt projections on each side. Wings hyaline, the veins black.

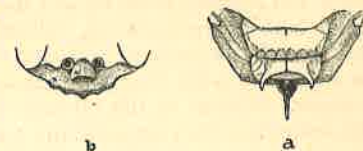


Fig. 34 *a*, *O. Woosnami*, ♀; *a*, posterior half of thorax; *b*, clypeus.

Lake Ngami, October 2. 2 ♀♀ (R. B. Woosnam); Pretoria; 1 ♀ (Miss J. Brincker). Type (from Lake Ngami) in British Museum coll.

O. harraricus n.sp. (fig. 34 B, *a*, *b*, *c*).

♀. 6.5 mm. long. Black. Mandibles ferruginous, black at the apex. Flagellum ochreous brown, the first three or four joints fuscous above.

Anterior tarsi and tibiae, excepting the outer side of the tibiae, last two joints of the middle and hind tarsi, pale ferruginous or ochreous brown. Tegulae testaceous, axillary sclerite black. Apical segment of abdomen ferruginous. Pronotal tubercles, pronotal collar, a small spot on each side of the scutellum and the inner halves of the metanotal squamae, pale yellow. First tergite with a semi-elliptical yellow macula on each side near the apical margin; the second tergite with a narrower or almost linear macula, and the third with a much smaller spot of yellow on each side (fig. 34 B, a). Calcaria and spines of the legs reddish yellow. Wings hyaline, the veins brown. The pubescence on the face and clypeus decumbent and silvery, on the vertex yellowish and erect, on the rest of the body and on the legs, whitish and sparse. Face and vertex deeply and closely punctured, the punctures not large. Mesonotum and scutellum with a similar and only slightly coarser puncturation. Mesopleurae about as strongly punctured as the mesonotum, slightly shining between the punctures. Sides of epinotum dull, closely, finely and transversely striato-rugose, feebly punctured between the rugae. Scutellum and metanotum carinate longitudinally in the middle; the posterior margin of the rather convex scutellum is not crenate. Metanotal squamae whitish and translucent on their outer halves, elongate triangular, the outer margins convex, the apex acute and not bifid. Epinotal process gutter-shaped, almost parallel-sided, curved upwards from the base, nearly four times longer than wide in the middle, the apex transversely truncate or feebly excised. The median area of the epinotal dorsum is shining, smooth except for one or two thin and oblique rugae; the lateral areas dull, closely reticulate-punctate. First tergite slightly shining, as strongly punctured as the mesonotum, but in its middle third not quite so closely; the second tergite dull, more closely and more finely punctured than the first, the remaining tergites dull and with a puncturation a little finer than on the second. Pygidial area closely punctured, sparsely covered with yellowish hairs, a little longer than wide at the base, the apex broadly truncate. Second sternite moderately shining, shallowly, finely and fairly closely punctured, the rest of the sternites shining. Clypeus carinate longitudinally in the middle, the anterior margin of its median area transverse and with subrectangular corners. The space between the eyes and the posterior ocelli is equal to the diameter of one of the ocelli.

♂. 5.5 mm. long. Apical segment of the abdomen black. The first four tergites have pre-apical, transverse, yellow maculae on the outer thirds of the segments. The collar of the pronotum is entirely yellow above, and the yellow spots on the scutellum are larger than in the ♀. Anterior tibiae pale yellow, their outer sides brown. Anterior and middle femora with a streak of pale yellow below, widened apically and not reaching the base. Middle tibiae along their whole length and the posterior tibiae at the base, yellow above. Flagellum entirely black. Otherwise coloured like the ♀. Anterior margin of the clypeus tridentate, the median tooth being formed by the apex of the carina, which is higher than in the ♀. The epinotal process is relatively longer and somewhat narrower than in the ♀. Seventh tergite quadrate. Otherwise like the ♀.

Harrar, Abyssinia. 2 ♀♀, 2 ♂♂. Types in British Museum coll.

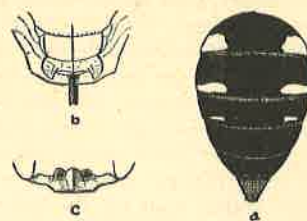


Fig. 34 b. *O. harraricus*, ♀; a, abdomen; b, posterior half of thorax; c, clypeus.

O. pilosus n.sp. (fig. 34 C, a).

♀. 5-6.3 mm. long. Black. Mandibles ferruginous, blackish at the base and apex. Last six or seven joints of the flagellum, the tarsi and calcaria of the hind legs, reddish ochreous. Wings hyaline, the tegulae, axillary sclerite, costa and basal portion of the subcosta and medial vein pale ferruginous (pale burnt sienna), the rest of the veins brown. Anterior tibiae pale lemon-yellow above, ochreous on the inner, black on the outer side. The shoulders of the pronotal collar, the pronotal tubercles, a large round spot on the anterior corners of the scutellum and the whole of the metanotum between the squamae, pale lemon-yellow. First two tergites with a large pale lemon-yellow spot on each side, narrowed inwardly; the third and fourth tergites with transverse bands of the same colour which are widely interrupted in the middle. Pygidium reddish ochreous. Pubescence on the head long, silvery and decumbent on the clypeus, face and temples, yellowish and erect on the vertex. Mesonotum and scutellum with a rather dense covering of dark brown, erect hairs, more noticeable when the insect is viewed from the side, and much more abundant than in the majority of the members of this genus. Mesopleurae and the outer sides of the fore and middle femora with a sparse, long and whitish pilosity. Pubescence on the abdomen whitish, fairly distinct at the sides of the apical margins of the tergites and on the fifth tergite and pygidial area. Clypeus and sides of the lower half of the face moderately shining, finely and not very closely punctured. The upper part of the face and the vertex with a larger and closer puncturation and a trace of fine longitudinal rugae between the punctures; occiput punctured like the vertex and with the usual transverse rugosity. Mesonotum and scutellum fairly shining, strongly and closely punctured, longitudinally rugulose between the punctures. Anteriorly the mesonotum is impressed in the middle, and the posterior third of the scutellum is longitudinally striate and impunctate. Mesopleurae shining, sparsely and coarsely punctured; metapleurae and sides of the epinotum fairly dull, transversely striate. Metanotum smooth and shining, with a median longitudinal carina like the scutellum; the metanotal squamae narrow, rostrate, excavated and opaque, the apex acute and not bifid. Epinotal process gutter-shaped, resembling that of *O. Peringueyi* but much narrower; a little in front of the bilobed apex it has a curved transverse ridge. Unlike *Peringueyi*, this species has the median and lateral areas of the epinotal dorsum dull, very finely and closely reticulate-punctate and also sparsely, obliquely rugose. The abdomen is shining, and more finely and less closely punctured than in *Peringueyi*. Pygidial area triangular, a little longer than wide at the base, the apex rounded. Median area of the clypeus with a sub-conical tubercle in the basal half which is continued as a carina to the anterior margin. The anterior lateral angles of the median area are acute.

♂. 4.5-6 mm. long. Flagellum black, the eighth to eleventh joints more or less ferruginous. The head and thorax have a slightly aeneous tinge, and all the yellow markings, as in *Peringueyi* ♂, are of a deeper shade of yellow (chrome yellow) than in the ♀. Tarsi ochreous; fore and middle tibiae yellow above, the former ochreous red below, the middle tibiae black below. Fore and middle femora yellow at the apex and on the outer apical third. Posterior tibiae yellow, suffused with black below, and with a black spot on the outer side at the apex. First five tergites with yellow maculae on each side, the seventh tergite fusco-ferruginous. As in *Peringueyi* the sculpture in this sex is much closer and stronger than in the ♀, so that the mesonotum and tergites

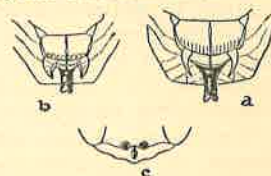


Fig. 34 c. a, *O. pilosus* ♀, posterior half of thorax; b, *O. pictus* ♀, posterior half of thorax; c, *O. pictus*, clypeus.

are dull, both the mesonotum and scutellum being distinctly reticulate-punctate. Erect pilosity on the vertex and mesonotum yellowish, the pubescence on the face and clypeus golden. Clypeus with three teeth on the anterior margin. Otherwise like the ♀.

Harrar, Abyssinia. 2 ♀♀, 14 ♂♂ (R. E. Turner). Types in British Museum coll.

O. pictus n.sp. (fig. 34 C, b, c).

♀. 5.7 mm. long. Black. Mandibles ferruginous, piceous at the apex. Scapes and flagellum ochreous, somewhat paler below. Pronotal collar, pronotal tubercles, a small spot on each anterior corner of the scutellum, the inner margins of the otherwise hyaline metanotal squamae, a large semi-elliptical transverse macula on each side of the first tergite, and a very narrow and short streak on each side of the second tergite, pale lemon yellow. Second sternite, excepting the base and the sides, and a transverse raised band on the fourth sternite, pale lemon yellow, with a slight tinge of green. Sixth abdominal segment ferruginous. Tegulae stramineous, blackish inwardly, the axillary sclerite black, with a pale whitish yellow border. Anterior tarsi and tibiae reddish ochreous, the apical joint of the tarsi pale ochreous, the apex of the anterior femora and a streak on the upper side of the anterior tibiae, pale lemon yellow. Anterior femora fusco-ferruginous below, black elsewhere. Middle and hind femora fusco-ferruginous, paler apically, the middle pair with a spot of pale yellow below near the apex. Middle and hind tibiae ferruginous, paler apically, their bases yellow above. Middle and hind tarsi reddish ochreous, the apical joints pale ochreous. Wings hyaline, the veins pale brown. Clypeus, face and temples with silvery pubescence; on the rest of the body the pubescence is grey, short and scanty. Head finely and closely punctured. Mesonotum and scutellum moderately shining, evenly and not closely punctured, the punctures a little larger than those on the vertex. Mesopleurae shining, sparsely, coarsely and irregularly punctured. Scutellum and metanotum carinate longitudinally in the middle, the metanotum also with a few rugae between the squamae. Metanotal squamae rostrate, the apices not entire but very shortly cleft. Declivity and sides of the epinotum slightly shining, transversely and sparsely rugulose; the lateral areas of the dorsum dull and closely punctulate, the median area shining, with a few fine rugae. Epinotal process gutter-shaped, almost parallel-sided or only slightly dilated towards the apex, which is shallowly and angularly excised. The process is curved from the base to the middle, about twice as long as wide, and has a transverse ridge a little beyond the middle. Tergites moderately shining; the first is more finely punctured in the middle, and more coarsely so at the sides than the mesonotum. The puncturation on the second to fifth tergites is clearly finer and closer than on the mesonotum, the punctures increasing in size towards the apical margins of the segments, but not decreasing very much from segment to segment, so that the punctures on the fourth and fifth are not much smaller than on the second and third. Pygidial area as coarsely punctured as the mesonotum, and a little more closely, triangular, longer than wide at the base, the apex narrowly and feebly emarginate. Sternites shining, the second coarsely and sparsely punctured in the middle, finely and closely so at the sides. Face wide, the interocular distance across the clypeus being only slightly greater than across the vertex. Compared with the majority of our species, the clypeus is very short; the anterior margin of the median area is convex in the middle and its lateral angles are rounded; the median carina does not reach the anterior margin, but at the base it is high, forming a blunt tubercle.

Sawmills, S. Rhod. 1 ♀, December (R. H. R. Stevenson). Type in Stevenson coll.

APPENDIX II

Further additions to the groups already dealt with, together with some corrections, are brought forward in this appendix.

LARRA Group

Eparmatostethus Kohl. *Verh. K.K. Zool. Bot. Ges. Wien*, p. ¹⁶⁷~~176~~. 1907.

This genus, erected for a species from Madagascar, cannot be maintained and should be regarded as a synonym of *Gastrosericus*. The characters which its author considered distinctive are the strong projections of the lateral sclerites of the clypeus and the lateral projections from the sides of the prosterna. But these structures are developed to a varying degree in several species of *Gastrosericus*, such as *bidentatus* Arn., *lamellatus* Turner and *Swalei* Turner. Moreover, the fusion of the recurrent veins before their junction with the cubitus is to be found not only in *E. madecassus* Kohl but also in *G. divergens* Brauns and *G. simplex* Arn.

Prosopigastra Mocsaryi Brauns.

♀. 6 mm. long (hitherto undescribed). Colour of the head and thorax as in the ♂, but the tibiae and tarsi are darker; the two basal segments of the abdomen pale ferruginous, the remaining segments piceous with paler apical margins. Clypeus, face, vertex, mesonotum, scutellum and metanotum shining, sparsely and strongly punctured, more strongly than in the ♂. Pronotum very closely and finely punctured, the rest of the thorax sculptured as in the ♂, but the rugae on the dorsum of the epinotum are finer and closer. Abdomen closely and finely punctured, less closely below than above, and not so closely as in the ♂; the punctures only a little smaller than the spaces between them, clearly visible with a magnification of 16 diameters. Mesopleurae unarmed. Interocular distance on the vertex about equal to the length of the first three joints of the flagellum. Anterior margin of the median area of the clypeus, which is much wider than in the ♂, convex and depressed. Pilosity on the thorax yellowish. First tergite without the dense pubescence which is present in the ♂. Tibiae and tarsi with blackish spines. Pygidial area broadly triangular, shining, sparsely and sharply punctured. Otherwise like the ♂.

Willowmore, type in coll. Brauns.

Genus TACHYTES.

In the key to this genus, *T. bulawayoensis* Bischoff has been omitted. It works down to paragraph 81, and may be distinguished from *inexorabilis* Turner by the narrower vertex, which is not quite equal to the length of the first two joints of flagellum, and by the longer inner calcar of the hind tibia, which is distinctly longer than the metatarsus. The galea is as long as the scape.

T. Distanti Turner. This species included in the keys, was omitted from the text. The original description is as follows:

"♀. Nigra, argenteo-pilosa; tarsi ferrugineis, articulo basali supra nigro; capite, thorace, segmentoque mediano albido-pilosis, mesonoto scutelloque pallide fulvo-griseo-pilosis; segmentis dorsalibus dense argenteo-pubescentibus, fasciis apicalibus distinctis; area pygidiali argenteo-pilosa; segmentis ventralibus apice anguste brunneis; alis subhyalinis, pallidissime flavidulis; venis ferrugineis. Long 14 mm.

Clypeus broadly rounded at the apex, the anterior margin shallowly depressed and very shallowly emarginate in the middle. Eyes separated on the vertex by a distance slightly less than the combined length of the two basal joints of the flagellum. Front and clypeus with shining silver pubescence, with long whitish hairs intermingled; pleurae and median segment clothed with long whitish hairs, the dorsal surface of the thorax clothed with short erect greyish-fulvous hairs. Dorsal segments densely covered with silver pubescence; pygidial area triangular, almost pointed at the apex, clothed with silver pubescence slightly tinged with gold. Second sternite subopaque, finely and closely punctured. Basal joint of the fore tarsus with five long pale spines. Radial cell pointed at the apex, the appendicular cell very narrow; third cubital cell extending on the cubitus beyond the apex of the radial cell, nearly three-quarters of the length of the second cell on the cubitus. First abscissa of the radius a little longer than the third, second less than two-thirds of the length of the third, the distance between the recurrent nervures on the cubitus slightly greater than the second abscissa of the radius.

Hab. Pretoria (Distant).

Very nearly related to *T. argenteovestita* Cam., and *T. bulawayoensis* Bisch., but differs from both in having only five spines on the basal joint of the fore tarsus, instead of six as in those species; it also differs from *bulawayoensis* in the colour of the pubescence on the pygidial area; and from *argenteovestita* in the colour of the tarsi and in details of neurulation."

T. opposita Turner. The galea in this species is shorter than the scape, as correctly stated in the key, and not longer, as it is said to be in the description on p. 208 (*Annals Trans. Mus.* ix, pt. 4).

T. rhodesiana Bischoff. This species usually has five spines on the anterior metatarsus, but I have seen several specimens, which cannot be referred to any other species, in which there are six. The number of spines on the metatarsus is certainly not a trustworthy character in this genus.

T. nigroannulatus Bischoff. In part 2 of this work, p. 152 (*Annals Trans. Mus.* ix, pt. 3), this name was synonymised with *Tachysphex syriacus* Kohl. Dr Bischoff has informed me that the type of his species is certainly not a *Tachysphex*, and that *Tachytes glabriuscula* Arn., agrees with his description of *nigroannulatus*. By some unfortunate mischance the specimen returned to me by Dr Bischoff in 1913, bearing a number corresponding to a number in a list of names, was without doubt *T. syriacus*, but on comparing the type of *Tachytes glabriuscula* with the diagnosis of *nigroannulatus* it is evident that the latter is a valid species, to which *glabriuscula* must be sunk in synonymy.

Notogonidea montivaga Cam. (Sjöstedt, *Kilimandjaro-Meru Exped.* 8, p. 286, ♂, 1910). The description of this species, which is unknown to me in nature, was omitted. It is as follows:

"Black, covered with a silvery pile, which is very dense on the lower part of the front, face, clypeus and base of mandibles, the latter reddish in the middle; the metanotum closely longitudinally striated, the striae more or less twisted, the apical slope transversely striated; wings hyaline, the apex slightly clouded, the nervures black; the radial cellule wide, the apical abscissa straight, not oblique, the part between it and the third transverse cubital nervure oblique, the second and third abscissae of the radius equal in length; the second recurrent nervure is received in the middle of the cellule; it is bluntly

angled in the middle. The third antennal joint is a little shorter than the fourth. Eyes at the top separated by a little more than the length of the second and third antennal joints united. Pygidium closely punctured, covered with silvery pile, the apex almost transverse; apex of hypopygium rounded.

♂, length 6 mm. The sternal process has the sides stoutly keeled and furrowed inside the keel; the central keel is only stout in the middle; there is a longish triangular incision on the apex. Metapleuræ weakly obliquely striated. Tibial and tarsal spines black, intermixed with fulvous ones. The long spur of the hind tibiae is two-thirds of the length of the metatarsus."

Kilimandjaro: Kibonoto, April.

PISON Group

Pison iridipennis Cam. An examination of the type in the collection of the Albany Museum shows that Cameron's species should be synonymised with the race *karrooensis* Arn. of *allonymum* Schultz, and not with the species. Cameron's name is in any case invalid, having been preoccupied in the genus by F. Smith.

ASTATA Group

Diploplectron africanum Arn. Numerous examples of this insect have been taken by Capt. Stevenson on various occasions in company with *Astata flavo-undata* Brauns. The suspicion that they were the two sexes of one species has been fully confirmed by the capture of a pair in copula. It follows, therefore, that *D. africanum* sinks as a synonym of *A. flavo-undata* Brauns.

PEMPHREDON Group

Ammoplanus capensis Brauns. This species is synonymous with *A. mandibularis* Cameron (*Entomologist*, xxxvi, p. 178, 1903).

Ammoplanus consobrinus n.sp. (figs. 35, 35 a and b).

♀. 2.3 mm. long. Black. Mandibles, labrum, scapes, margins of the pronotal tubercles, tegulae and legs, pale straw yellow. Posterior coxae and basal two-thirds of the posterior femora pale fuscous. Wings hyaline, veins almost colourless except the costa, subcosta and radius which are brown. The stigma is pale straw yellow, translucent, with the margin brownish. Flagellum brown above, brownish yellow below. The whole body shining and glabrous. Face microscopically rugulose (this sculpture is barely visible with a magnification of less than 35 diameters). The vertex and temples smooth, with a very few minute punctures, distantly spaced. Neck of pronotum slightly dull, finely and transversely rugulose. Mesonotum with a very shallow, transverse and fairly close aciculation, and a few very shallow punctures. Scutellum, metanotum and mesopleuræ smooth and impunctate. Dorsum of epinotum with a very open rugose reticulation; the sides with about four or five oblique and sharp rugae, the declivity slightly dull, very finely transversely rugose. Abdomen with a microscopic transverse rugulosity. Head in front one-third wider than high, much wider than in *A. rhodesianus*, and viewed from the side, not so high above the upper margin of

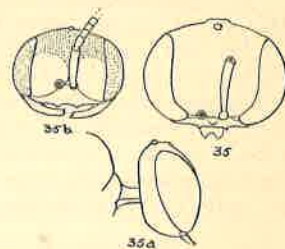


Fig. 35. *Ammoplanus consobrinus*, ♀, head; a, the same, lateral view, b, head of ♂ (undotted parts pale yellow).

the eyes as in that species. Clypeus not linear as in *A. mandibularis* but almost as well developed as in *rhodesianus*; the anterior margin in the middle is feebly concave, with a small angle at each side, the base between the antennal sockets slightly swollen. The labrum projects forwards and is semicircularly excised. First joint of the flagellum longer than wide, as long as the two following united, the second and third subequal, the apical joint slightly enlarged and flattened. Posterior ocelli a trifle nearer the anterior ocellus than they are to each other, nearly twice as far from the eyes as from each other. Pronotal collar short, impressed longitudinally in the middle. The mesonotum is distinctly more convex in front than in *rhodesianus*, and a little more than twice as long as the scutellum, whereas in *rhodesianus* it is barely twice as long. The sculpture of the epinotal dorsum, especially the transverse rugae, is stronger than in the other species. Venation like that of *rhodesianus*.

♂. 2 mm. long. Mandibles, scapes, clypeus and lower half or more of the face, smooth, shining and lemon yellow. The yellow on the face is more extensive than in *rhodesianus* ♂, the maculae almost meeting in the middle, their upper margins nearly semicircular. Scapes wide, the first joint of the flagellum nearly as long as the two following united, the second a trifle longer than the third and longer than wide. Clypeus more developed than in the ♀, longer in the middle than at the sides, the emargination in front deeper. Otherwise like the ♀ in colour and sculpture.

Helenvale, S.R., December (G. Arnold); 1 ♀, 2 ♂♂. Nesting in a decayed wooden post. Types in R.M. coll.

Stigmus rugosifrons Arn., race *johannis* n.r.

♀. 5.7 mm. long. Larger than the type of the species and differing from it as follows: Anterior and middle tibiae and tarsi darker or reddish brown. The petiole paler, reddish brown. Mandibles black at the base, ivory white in the middle, the apex fuscous. Wings with a fuscous cloud across the middle, and another which extends from the stigma across and beyond the second cubital cell, covering the base of the radial and upper corner of the first cubital cells. Face dull, very finely reticulate-punctate, at the sides somewhat obliquely striolate. Median area of the clypeus more deeply excised on the anterior margin. Vertex and occiput shining, almost smooth, the transverse striae being almost obliterated. Flagellum relatively more slender than in the type of the species, the joints longer; the first is distinctly shorter than the second or third, the second to fourth joints are four times longer than wide at the apex, whereas in the type of the species they are only three times as long. Petiole a little more slender.

♂. ca. 4.5 mm. long. Colour, sculpture and wings as in the ♀. First joint of the flagellum shorter than the second, the third and following joints not dilated near the apex as in the type of the species.

Port St Johns, Pondoland, September (R. E. Turner). 2 ♀♀, 1 ♂. Types in the British Museum.

Spilomena Turneri n.sp. (figs. 36 and 36 a).

♀. 2.5 mm. long. Black. Anterior tibiae and tarsi brownish ochreous, the middle and hind tarsi pale brown, with the apical joint darker. Wings hyaline, veins brown, the stigma almost black. Head fairly shining, almost smooth, but with a microscopic alutaceous sculpture which is barely appreciable with a magnification of even 60 diameters. Median area of the clypeus convex, longitudinally and closely striate, carinate lengthwise in the middle, the carina projecting backwards as far as the middle of the face, the anterior margin convex. Head a little longer than wide, the eyes slightly

convergent above. Scapes hardly reaching back as far as the middle of the face. All the joints of the flagellum, excepting the first and last, at least as wide as long, mostly wider. Posterior ocelli nearly twice as far from the eyes as they are from each other, a little farther from each other than they are from the anterior ocellus. Pronotal collar longer than in *Merceti* or *Stevensoni*, its anterior face and neck distinctly reticulate-punctate, the dorsal face obliquely striolate, shining, longer at the sides than in the middle, at the latter point a little longer than the first joint of the flagellum, narrowed slightly anteriorly, the anterior margin raised, and with a low transverse torus in the middle.

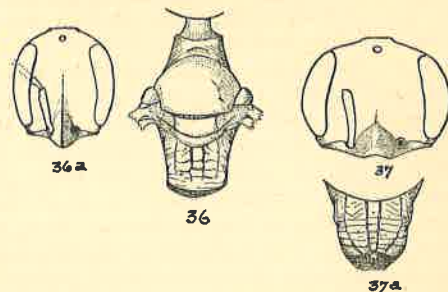


Fig. 36. *Spilomena Turneri*, ♀, thorax; a, head.
Fig. 37. *Spilomena robusta*, ♀, head; a, epinotum.

Mesothorax and sides of epinotum smooth and shining, the mesonotum half as wide again as long, and two-and-a-half times longer than the scutellum. Dorsum of epinotum fairly dull, with widely separated transverse rugae, and a pair of strong longitudinal rugae on each side of the middle which do not reach the apical margin; the space between the rugae superficially reticulate. The dorsum of the epinotum is nearly as long as the mesonotum. Declivity dull, closely and transversely rugulose. Abdomen smooth and shining, excepting the apical segment which is dull and punctulate. Second cubital cell twice as long as high; the first abscissa of the radius a little less than one-third the length of the second. The recurrent vein enters the first cubital cell at a distance from its apex which is equal to the first abscissa of the radius.

Ceres, C.P., February (R. E. Turner), 1 ♀. Type in the British Museum.

Spilomena robusta n.sp. (figs. 37 and 37 a).

♀. 2.7 mm. long. Black. Scapes and first joint of the flagellum brownish ochreous. Anterior and middle tibiae and tarsi and the hind tarsi ochreous, the anterior femora of the same colour but with a slight infuscation on the upper side, the posterior fourth of the hind tibiae pale ochreous. Mandibles fusco-ferruginous, the tegulae dark brown. Head shining, microscopically alutaceous, with a very fine and sparse puncturation on the face and vertex. Pro- and mesothorax shining, the pronotum striate at the sides, the mesonotum, scutellum and disc of metanotum microscopically alutaceous like the head. Mesopleurae transversely striolate near the base, sides of epinotum finely and obliquely striate and dull; the declivity dull, transversely rugulose and reticulate. The dorsum of the epinotum has a sculpture resembling that of *S. Turneri*, but the two median longitudinal rugae are sharper and reach the brow of the declivity, the transverse rugae emitted from them are more numerous and extend outwards as far as a sharply defined lateral carina which is only barely indicated in *Turneri*; the spaces between the rugae are reticulate-punctate and dull. The dorsum is also less rectangular at the apical margin than in *Turneri*. Abdomen smooth and shining, the apical tergite dull, compressed and covered with a greyish pubescence.

Head, excluding the closed mandibles, one-fourth wider than long, but not so wide as in *S. Stevensoni* in which it is nearly one-third wider than long. Median area of the clypeus very convex but not carinate longitudinally,

the anterior margin feebly concave. First joint of the flagellum nearly as long as the two following united; the second joint is a trifle longer than wide at the apex, the third and fourth as long as wide. The posterior ocelli are one-and-a-half times as far from the eyes as they are from each other. Pronotal collar shorter than in *Turneri* but much longer than in *Stevensoni*, in which it is almost linear; it is less narrowed in front than in *Turneri* and its length in the middle is about half the length of the first joint of the flagellum. Second cubital cell about one-third longer than high; first abscissa of the radius one-fourth the length of the second abscissa; the recurrent vein is interstitial with the first transverse cubital vein.

Mossel Bay, C.P., April (R. E. Turner), 2 ♀♀. Type in the British Museum.

Psenulus Turneri n.sp.

♀. 6.5 mm. long. Black; antennae, anterior pair of legs excluding the coxae and last two segments of the abdomen, ferruginous. Middle and hind legs, excluding the coxae, and posterior half of the tegulae, fusco-ferruginous. Clypeus and face below the transverse carina with fairly long and dense silvery pubescence; the rest of the head, mesopleurae, metanotum and sides of the epinotum with shorter and scantier pubescence of the same colour. Abdomen with a very sparse whitish pubescence. Clypeus and face with a slightly greasy lustre, finely rugulose-punctulate, the anterior margin of the clypeus produced in the middle into two short teeth, close together. Face above the transverse carina moderately shining, closely and evenly reticulate-striate, the striae diverging obliquely outwards and separated by single punctures. On the vertex the striae are somewhat effaced, but on the temples the sculpture is similar to that of the face and stronger, the striae more or less vertical. The whole thorax fairly shining. Anterior face of the pronotal collar transversely rugulose, the dorsal face very finely punctured, its anterior margin raised, the shoulders feebly rounded, shorter in the middle than at the sides. Mesonotum sparsely and unevenly punctured, with traces of transverse striae. Scutellum punctured like the mesonotum, the metanotum more finely and less closely so. Mesopleurae sharply and not closely punctured, with faint striae near the posterior margin. Dorsum of epinotum with a well defined basal area, strongly clathrate or carinate longitudinally at the sides and transversely in the middle; the rest of the epinotal dorsum coarsely reticulate-rugose; the sides of the epinotum obliquely striate, the striae fading out in front. Abdomen smooth and shining. Petiole distinctly curved near the base, about half as long again as the first tergite, when seen from the side. Antennae inserted a little below the middle of the face; at about half-way between them and the hind margin of the clypeus there is a transverse carina which does not reach the inner margins of the eyes. This carina is connected with a median longitudinal carina which extends to the antennal sockets and is continued thence as a thin raised line as far as the anterior ocellus. Posterior ocelli a little nearer to the eyes than they are to each other, and nearly twice as far from each other as they are from the anterior ocellus. Flagellum stout, the first joint about as wide at the apex as long, and a little shorter than the second. The apical joint is not quite as long as the two preceding joints united. Mesonotum a little more than twice as long as the scutellum, the latter twice as long as the metanotum. Wings pale fusco-hyaline, the veins and stigma blackish. First and second abscissae of the radius together about equal to the third; the second cubital cell with a short stalk on the radius.

Mossel Bay, C.P., November (R. E. Turner), 1 ♀. Type in the British Museum.

Stigmus gueinzii Turner. The statement in the original description that the second joint of the flagellum is more than half as long again as the first is incorrect. By measurement of the type it is evident that it is barely one-quarter longer.

THYREOPUS Group

T. (Encopognathus) egregius Arn. This name sinks as a synonym of *E. Brownei* Turner, the type of which I have now seen. Turner omitted any mention in his description of the lamellae surrounding the margins of the metanotum.

T. (Entomognathus) bidentatus n.sp. (figs. 38 and 38 a).

♀. 4.5 mm. long. Black. Anterior tibiae fuscous ochreous on the inner side, the apical joint of the fore tarsi yellowish. Tegulae brown, wings pale

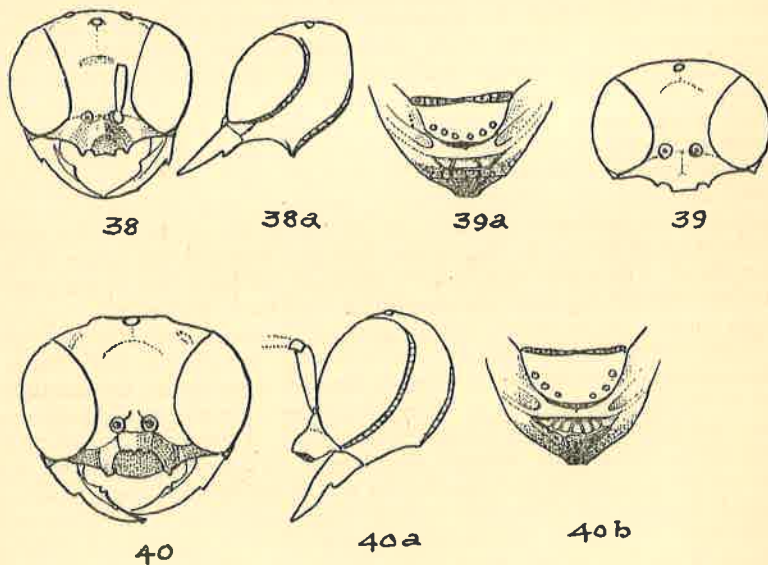


Fig. 38, 38 a. *Entomognathus bidentatus*, ♀, head.

Fig. 39. *Entomognathus ignavus*, ♀, head; a, posterior half of thorax.

Fig. 40, 40 a. *Entomognathus subnasutus*, ♀, head; b, posterior half of thorax.

fusco-hyaline, the veins dark brown. Clypeus and sides of the lower half of the face with silvery pubescence. The rest of the head and the thorax with a very scanty, short and grey pubescence, the tergites with similar but less scanty pubescence. Lateral sclerites of the clypeus and the sides of the lower half of the face sparsely punctured and dull, the rest of the head and the thorax shining. Vertex very sparsely and fairly finely punctured, the temples more finely and less closely. Mesonotum and scutellum punctured like the vertex; the mesonotum has a round pit-like puncture on each side of the middle just behind the anterior margin, and an oblong one on each side near the lateral margins and opposite the tegulae. Meso- and metapleurae with a few fine and widely separated punctures. Median area of the epinotum

with short longitudinal carinae at the base, and oblique ones at the sides, the surface between them shining. The declivity and lateral areas of the very short dorsum are dull and closely reticulate-rugose, the sides of the epinotum shining and nearly smooth in front, reticulate-rugose behind. Abdomen finely, evenly and fairly sparsely punctured, the puncturation stronger on the first and second tergites than on the rest, most of the punctures separated by spaces about three or four times the diameter of a puncture.

Pygidial area triangular, longer than wide at the base, coarsely and closely punctured, the apex narrowly rounded, the apical fourth fusco-ferruginous. Median area of the clypeus raised and subtubercular at the base, the anterior portion produced, subquadrate, the anterior margin straight and rectangular at the corners. On each side of the anterior margin of the median area there is a strong triangular tooth. Eyes widely divergent above, the least distance between them is at a point a little behind the antennal sockets, where it is equal to one and two-thirds the length of the scape. Posterior ocelli separated from the eyes by two and a half times the diameter of one ocellus. The posterior margin of the eye is bordered by a transversely crenate sulcus; the temples are separated from the mentum by a similar sulcus, and beyond the middle are produced into a stout downwardly directed tooth. Facial concavity very shallow, the brow of the depression not clearly defined. Lateral foveae on the vertex semicircular and deeply impressed. Pronotal collar short, not much longer at the sides than in the middle, transversely grooved, the shoulders subrectangular.

Aliwal North, C.P., December (R. E. Turner), 1 ♀. Type in the British Museum.

Allied to *E. Stevensoni* Arn., but larger and easily distinguished from that species by the tooth on the temples and the shape of the clypeus. It also resembles *E. apiformis* Arn., but the latter has much stronger puncturation, a deeply excavated facial concavity, and no tooth on the temples.

T. (Entomognathus) ignavus n.sp. (figs. 39 and 39 a).

♀. 5 mm. long. Black. The apex and front of the scapes, a transverse spot on the front of the tegulae, tibiae, metatarsi and apices of the femora, lemon yellow. The second to fourth tarsal joints pale ochreous, the apical one brown. All the tibiae with a blackish longitudinal streak below. Apical third of the pygidium reddish yellow. Wings hyaline, faintly tinged with brown, the veins brown. Clypeus and sides of the face with silvery pubescence; on the rest of the head and on the thorax the pubescence is sparse and grey, and on the eyes it is distinctly long. Tergites with a brownish grey pubescence on the apical margins, pygidial area covered with pale golden setae. Apical half of the median area of the clypeus smooth and shining, the rest of the clypeus and the sides of the face dull and closely punctured. Facial concavity smooth and shining. From the brow of the concavity to the back of the vertex the head is sparsely pitted; these pit-like punctures are very shallow and small in front of the posterior ocelli, but large and deep behind them. A single row of these punctures extends half-way down the temples. The occipital slope is smooth and shining, the posterior margin of the occiput reflexed and forming a crenate groove which is continued down the lower margin of the temples. A similar groove borders the posterior margin of the eyes. Mesonotum, scutellum and mesopleurae shining, with large and widely spaced pits like those on the back of the head, intermixed with a few small punctures. Metanotum dull in the middle. Sides of epinotum dull, rugulose, with a few short rugae near the margin of the declivity. Dorsum of epinotum with a short, shining, crescentic basal area, defined by sharp upstanding rugae,

divided into three sectors by two oblique carinae. The lateral areas of the epinotal dorsum and the declivity are irregularly and coarsely rugose and somewhat dull. First and second tergites slightly glossy, closely and fairly strongly punctured, the third to fifth finely and less closely. The first two tergites have a few irregularly distributed pits intermixed with the ordinary punctures; they are shallow, and like those on the head and thorax, have in their centres a small puncture. Pygidial area triangular, a little longer than wide at the base, closely covered with large elongate punctures, the apex narrowly rounded. Sternites shining, the second with a sparse, large and shallow puncturation, the apical margins of the third to fifth and apical half of the sixth finely and closely punctured. Median area of the clypeus slightly produced, feebly carinate longitudinally in its basal half, the anterior margin straight in the middle, and armed on each side with a short tooth. The least distance between the eyes is below the middle of the face and is equal to about two-thirds the length of the face (measured from the anterior ocellus to the posterior margin of the clypeus). Posterior ocelli a little nearer to the eyes than they are to each other, separated from the eyes by two and a half times their own diameter. Second joint of the flagellum as long as the third, the apical joint almost as long as the two preceding joints united. Lateral foveae of the vertex large, subelliptical, distinctly defined. Abdomen oblongo-ovate, twice as long as it is wide across the second segment, where it is widest.

♂. 4.5 mm. long. Anterior and middle tibiae yellowish red, the former more or less infuscated above, the latter below.

Anterior metatarsus flattened and dilated; the apex of the anterior tibiae also somewhat dilated. Sixth to eighth joints of the flagellum swollen below. Sides of epinotum more strongly rugose than in the ♀. Sixth tergite as strongly punctured as the first. Pygidial area trapezoidal. Otherwise like the ♀.

Bulawayo, January (R. H. R. Stevenson), 2 ♂♂, 1 ♀. Types in coll. Stevenson.

T. (Entomognathus) subnasutus n.sp. (figs. 40, 40 a and b).

♀. 6 mm. long. Black. Basal half of the mandibles yellow, the apical half ferruginous. Front of the scapes, tibiae and tarsi, and apical half or more of the femora, pale chrome yellow. The apical joints of the tarsi brownish yellow. Tegulae pale ochreous. Apical segment of the abdomen ferruginous. Wings pale fusco-hyaline, the veins blackish, the costa fusco-ferruginous near the base. Sides of the face and the clypeus with silvery pubescence. Abdomen and mesopleurae with fairly abundant, thin and greyish pubescence, the mesonotum with a short brownish pubescence which is barely visible unless viewed from the side. Facial concavity smooth and shining, its upper half fairly deep. Face above the concavity, vertex and upper half of the temples covered with large pits, deeper on the vertex and occiput than in front of the ocelli, intermixed with small punctures, the spaces between them slightly shining. Lower part of the temples closely shallowly punctured and dull. The crenate grooves margining the back of the eyes and temples are distinct. Pronotum fairly dull, shallowly rugulose and punctate, the anterior face of the collar vertical, the dorsal face transversely grooved, a little longer in the middle than at the rounded shoulders. Mesonotum moderately shining, with a large ovoid pit on each side of the middle line a little behind the anterior margin, with which they are connected by a row of punctures; there is also a shallow pit near the lateral margins opposite the tegulae. Otherwise the sculpture of the mesonotum consists of large and small punctures intermixed and widely separated. The scutellum has a similar puncturation and is shining; a little in front of its posterior margin there is on each side a row of

three deep and round pits. Disc of the metanotum shining, very sparsely and finely punctured. Mesopleurae sparsely pitted, with a few fine punctures intermixed, slightly shining. Sides of epinotum transversely striolate, the declivity dull and finely reticulate-punctate at the sides, reticulate-rugose in the middle. Dorsum of the epinotum short, with a median basal area sharply defined by strong ridges and traversed by six oblique carinae. Tergites 1-5 closely, evenly and deeply punctured, the punctures not large, those on the fourth and fifth not much smaller than on the preceding segments. Pygidial area triangular, a little longer than wide at the base, the apex acute, closely and strongly punctured. Second sternite closely pitted and transversely rugose, fairly dull, the lateral foveae dull and coriaceous, the remaining sternites shining and microscopically rugulose.

The middle portion of the median area of the clypeus is raised into a nasiform protuberance which, seen from the side, appears vertically truncate in front; the junction of its oblique upper plane and the vertical plane forms a bisinuate or feebly tridentate line. The least distance between the eyes is a little behind the antennal sockets and is equal to the length of the scape plus the first two joints of the flagellum. The second and third joints of the latter are subequal. The posterior ocelli are separated from the eyes by two and a half, and from each other by three times their own diameter. Lateral foveae of the vertex pyriform, distinct and twice as long as one of the ocelli. Mesonotum two and a third times longer than the scutellum. Abdomen ovate, nearly twice as long as wide in the middle. Accessory cell of the forewing distinctly defined.

Sawmills, S.R., February (R. H. R. Stevenson), 1 ♀. Type in coll. Stevenson.

T. (Entomognathus) apiformis Arn.

♂ (hitherto undescribed). 4.7 mm. long. Anterior tibiae yellow above, the middle and hind tibiae with a narrow streak of the same colour on the upper side. Anterior and middle femora pale ferruginous above. Anterior metatarsi dilated outwardly. The flagellum has the fourth and fifth joints arcuately emarginate below; the first joint is as long as the second and third united, the second to eleventh joints wider than long. Pygidial area subquadrate. Otherwise like the ♀.

Vumbu Mts., Umtali, S.R., February (G. Arnold). Type in R.M. coll.

T. (Dasyproctus) bipunctatus Lep., race *funereus* Arn.

♀ (hitherto undescribed). 10 mm. long. Fourth and fifth tergites with a narrow transverse band of pale yellow on each side at about the middle of the segment, otherwise coloured like the ♂. The puncturation differs from that of the type of the species in the same way as in the ♂. The pubescence on the clypeus is golden, and the node of the petiole is thicker than in the type of the species. Otherwise like the ♂.

Vumbu Mts., Umtali, S.R., February. Type in R.M. coll.

T. (Dasyproctus) angustifrons n.sp. (fig. 41).

♂. 10.3 mm. long. Black. Scapes excepting a black streak behind, basal two-thirds of the mandibles, pronotal tubercles, an elongate mark on each side of the pronotal collar not reaching the shoulders, a small spot on the anterior angles of the scutellum, the outer face of the anterior and middle tibiae, the apices of the anterior femora and a longitudinal streak, widened apically, on the outer face of the posterior femora, pale chrome yellow. Apical third of the mandibles fusco-ferruginous. The node of the petiole and

the second to sixth tergites have small pale yellow oblong spots at the sides, those of the fourth to sixth not visible when the insect is viewed direct from above. Tarsi of fore and middle legs ochreous, the basal joint chrome yellow; hind tarsi fuscous. Wings hyaline, the veins brown. Pubescence like that of *bipunctatus*, but on the clypeus it is golden silvery. The fine black pubescence on the vertex and mesonotum is longer than in *bipunctatus* and on the vertex somewhat more abundant, the fine punctures from which the pubescence arises are also more distinct. The extreme posterior margin of the mesonotum and the posterior half of the scutellum have widely spaced longitudinal carinae. The epinotum is more convex from base to apex than in *bipunctatus*, and the sculpture is a little stronger, consisting of a network of prominent rugae with finer rugae in between the reticulations. The clypeus resembles that of *bipunctatus* but the median area is produced farther forwards and is carinate longitudinally. The brow of the facial concavity is arcuate. Scapes long, five times longer than their greatest width. Second joint of the flagellum two and a half times longer than wide at the apex, two-thirds longer than the third joint; the fifth joint not widened apically below. Head much narrower than in our other species, the greatest width being only one quarter greater than the length (measured from the anterior ocellus to the apex of the clypeus). It is distinctly narrower at the level of the posterior margin of the clypeus than it is across the upper margin of the eyes. The eyes are also less divergent above than in our other species. Petiole nearly three and a half times longer than its greatest width (across the node), very nearly as long as the second and third tergites united. The abdomen is narrower than in *bipunctatus* ♂.

Umgeni, Natal, March (C. N. Barker). Type in the Durban Museum.

T. (Dasyproctus) Barkeri n.sp. (figs. 42 and 42 a).

♀. 9-10 mm. long. Black; the apical third or more of the third to fifth tergites, including the lateral margins, yellowish translucent. The following parts are chrome yellow: scapes, an oblong mark on each side of the middle of the pronotal collar not reaching the shoulders, the pronotal tubercles and transverse bands, widely interrupted in the middle, on the second to fifth tergites. The band on the first is just before the middle of the segment, on the other three it is at the base, and those on the third and fourth are widened laterally. Tibiae, tarsi, apices of the femora and tegulae, ferruginous. First joint of the flagellum ferruginous, the rest black. Mandibles ferruginous, blackish at the base and apex, with a short streak of yellow on the upper margin near the base. Wings hyaline, faintly tinged with fuscous, the veins blackish brown. Pubescence of the clypeus, face and temples golden. On the vertex there is a thin brownish pilosity, and near the brow of the face and on the tergites an inconspicuous, sparse and yellowish pubescence; epinotal declivity with a greyish, exerted and scanty pilosity. Median area of the clypeus produced, narrowed towards the apical margin which is feebly angularly emarginate; on each side behind the apical margin there is a low dentiform angle. The median area has a low but distinct longitudinal carina. The facial concavity is deep, its brow obtusely angular. First and third joints of the flagellum subequal, the second joint two and a half times longer than

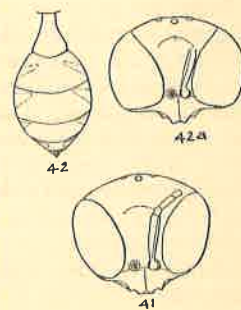


Fig. 41. *Dasyproctus angustifrons*, ♂, head.
Fig. 42. *Dasyproctus Barkeri*, ♀, abdomen; a, head.

its apical width and half as long again as the third. The vertex behind the brow of the facial concavity is shallowly and finely punctured; the mesonotum has a very fine puncturation, and from each puncture arises a short black hair, as in *bipunctatus*. The scutellum is finely and sparsely punctured, and its posterior half has a slight gloss and is strongly and fairly closely striate, with large punctures between the striae. Metanotum closely rugoso-punctate. Sides of epinotum closely and transversely striate; the dorsum has a triangular median area defined by shallow grooves at the sides, its sculpture and also that of the declivity resembles that of *D. dubiosus* Arn. but is coarser, especially the longitudinal rugae at the base, and the spaces between them are slightly shining. The petiole is much shorter than in any of our other species, even shorter than in *D. ruficaudis*; it is a little less than one-third longer than wide at the apical margin, and is not quite so long as the second segment plus half of the third. The abdominal complex behind the petiole is ovate, not quite one quarter longer than wide at its widest, *i.e.* across the middle of the third tergite. Pygidial area shining, of the usual Y-shape, the apical half deeply excavated, the sides densely fringed by long and thick yellowish setae.

Durban, Umgeni and Malvern, Natal, March-April (C. N. Barker). Nesting in dry stems of the Kaffir-boom. Types in the Durban Museum, paratypes in the Rhodesia Museum.

T. (Dasyproctus) bipunctatus Lep., var. *lugubris* v.n.

♀. 8 mm. long. Scares yellow, with a black streak behind on the basal half. A mark on each side of the second tergite and a transverse bar on the middle of the fifth tergite yellow, as in the type of the species, otherwise the body, including the tegulae, is entirely black. Anterior tibiae and tarsi ferruginous, the middle tibiae fusco-ferruginous, the rest of the legs black. Wings pale fusco-hyaline. Otherwise like the type of the species.

♂. 7 mm. long. Scares with a smudge of yellow near the apex, the anterior tibiae and tarsi ferruginous, otherwise entirely black, and like the type of the species.

Vumbu Mts., Umtali, S.R., February (G. Arnold).

In coloration this variety resembles the race *funereus*, but the petiole is not so short and thick as in that race, being of the same proportions as in the type of the species.

Types in R.M. coll. (R.M. and T.M. colls.)

T. (Cuphocterus) glabricornis Arn.

♀ (hitherto undescribed). 11.5 mm. long. A specimen in the Durban Museum appears to be the ♀ of this species, in spite of certain differences in colour and sculpture which are probably only sexual.

The first six joints of the flagellum are ferruginous, the rest blackish. The scares are entirely yellow. Mandibles ferruginous, with a yellow suffusion outside at the base. Clypeus entirely yellow. The yellow marks on the first abdominal segment are more extensive than in the ♂, extending over the outer third of the tergite on each side, and nearly the whole of the fifth is dirty yellow; the fourth immaculate, the pygidium ferruginous. The middle and hind coxae and trochanters are ferruginous above, yellow below. Pronotal collar and tubercles ferruginous. Median area of the clypeus longitudinally carinate in the middle, the anterior margin with three blunt teeth. Second joint of the flagellum as long as the third and fourth united, three times longer than its apical width (in the description of the ♂ the measurement of the second joint was erroneously stated to be half as long as the third, it should be "half as long again as the third"). The dorsum of the epinotum, outside

the median area, and the declivity are shining, finely, shallowly and fairly closely punctured. The first tergite is three-fourths longer than wide at the apex. Pygidial area triangular, sparsely and coarsely punctured, longer than wide at the base, the apex narrowly rounded. Middle tibiae without a carina on the upper surface. Temples without a sharp angle. Otherwise like the ♂.

Natal. Type in the Durban Museum.

Thyreopus Crippsi n.sp. (figs. 43 and 43 a).

♀. 12 mm. long. Black; mandibles, pygidium, apices of the femora and the tibiae ferruginous; tarsi and tegulae fusco-ferruginous; the last joints of the tarsi black; scapes lemon yellow. Wings pale fusco-hyaline, veins and stigma blackish.

Clypeus with pale golden pubescence, the sides of the face and the vertex with brownish yellow pubescence. Temples and thorax, especially the sides of the latter, with a fine pubescence and a greyish outstanding pilosity; the latter is fairly dense but does not obscure the sculpture. The tergites have a yellowish pubescence, much more abundant on the fourth and fifth tergites than elsewhere, making those segments appear somewhat brown. Clypeus, face and vertex dull, closely and finely punctured, the vertex almost coriaceous, a narrow median impression on the face smooth and shining. Behind the ocelli and on the temples the surface is slightly shining, sparsely, finely and very shallowly punctured. Pronotal collar dull and almost smooth; mesonotum and scutellum dull, evenly, closely and finely striate lengthwise, the scutellum with some puncturation between the striae.

Mesopleurae in front of the episternal suture dull and transversely striate, behind it slightly shining, very sparsely covered with small elongate punctures; the mesosternum with similar sculpture. Disc of metanotum sparsely punctured, slightly shining. Declivity and sides of the epinotum dull, microscopically rugulose. The dorsum of the epinotum has a median area which is clearly defined only at the sides and base, almost dull, the basal fourth longitudinally rugose, the rest sparsely and superficially punctured, the lateral areas of the dorsum obliquely and finely rugose; the median area has a longitudinal groove which is sharply marginate and is continued into the median groove of the declivity. Tergites slightly shining, more especially the first three, microscopically rugulose and sparsely punctured. Sternites smooth and shining, the fourth and fifth with preapical rows of punctures, the apical half of the sixth finely punctured, the second with a transverse torus on the basal margin. Prosternum with the outer lower angles produced and dentiform. Median area of the clypeus rhomboidal, wider than long, carinate lengthwise in the middle, the anterior margin narrowly excised in the middle. Head wider than long, as long behind the posterior ocelli as in front of them. The eyes are enlarged below and the facets in that part are larger than the rest. Antennal sockets contiguous with each other and with the inner margins of the eyes. Scapes long; the first five and the apical joints of the flagellum longer than wide, the second joint three times longer than wide at the apex, and fully half as long again as the first. Ocelli large, the posterior pair separated from the anterior ocellus by less than half their diameter, and from the inner margin of the eyes by a little more than twice their diameter. Lateral

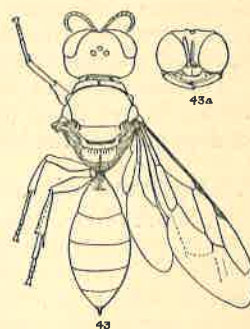


Fig. 43. *Thyreopus Crippsi*, ♀; a, head.

foveae on the vertex are absent. Pronotal collar strongly convex from front to back, impressed in the middle, the shoulders subangular. Mesonotum fairly convex, two and a half times longer than the scutellum; the latter is wide, and about twice as wide in front as long in the middle. The suture between it and the metanotum is wide and deep. Dorsum of the epinotum a little shorter than the scutellum. Abdomen lanceolate-ovate, two and a third times longer than wide in the middle, the first tergite narrowed towards the base, as long as wide at the apex and as long as the second tergite plus two-thirds of the third. Pygidial area narrow, and of the same shape as in *Dasyproctus*. Posterior tibiae with two rows of very short spines on the outer margin; the metatarsus long, very little shorter than the tibia.

Vumbu Mts., Umtali, S.R., February (G. Arnold), 1 ♀. Type in R.M. coll.

Named in honour of Mr Lionel Cripps, to whose kind hospitality I owe several opportunities for studying the insect fauna of a very interesting region of S. Rhodesia. This species runs down in Kohl's key to *Thyreopis* (*Crabro*) s.str. and more or less to the *quadricinctus* group.

T. (Rhopalum) Turneri n.sp. (figs. 44 and 44 a).

♀. 5.8 mm. long. Black. The following parts are pale yellowish white: the scapes excepting a fuscous streak on the apical half behind, the upper surface of the anterior and middle tibiae, the basal third above of the hind tibiae, the metatarsi and palpi. The second to fourth joints of the tarsi pale ochreous, the apical joint fuscous. Mandibles ferruginous; the trochanters yellowish brown. Wings pale fusco-hyaline, the veins and stigma black. Clypeus, face and temples with a sparse silvery pubescence, the rest of the body with a sparse, greyish and microscopic pubescence. Clypeus finely coriaceous and dull. Facial groove smooth and shining. Vertex and temples shining, exceedingly finely punctured, the punctures fairly far apart except near the brow of the face where they are larger and nearer together. Pronotum shining, the punctures microscopic. Mesonotum and scutellum shining, more strongly punctured than the vertex, but the punctures are small, shallow and far apart. Mesopleurae shining and impunctate. Metapleurae transversely striolate. Sides of epinotum nearly dull, microscopically and transversely aciculate; the dorsum and declivity shining, the former with a very shallow, oblique and close striation, barely visible with a magnification of less than 30 diameters. The dorsum has a few short rugae on the basal margin, and a median longitudinal marginate groove which is widest at the base and is continued into the fairly deep median groove of the declivity. Abdomen smooth and shining. Pygidial area longer than wide at the base, slightly excavated, the sides concave, the apex truncate.

Mandibles bidentate at the apex, the inner upper margin with a low tooth at about the middle. Median area of the clypeus strongly carinate in the middle and produced in front; its anterior margin is transverse, rectangular and somewhat tuberculate at the corners; on each side of, and at some distance from the produced portion there is a blunt tooth. Antennal sockets contiguous with each other and with the inner margins of the eyes. First joint of the flagellum as long as the second, and slightly longer than the third. Ocelli arranged in an equilateral triangle, the posterior pair nearer each other than they are to the eyes. Inferior margin of the temples raised, ending in front in a blunt angle. Pronotal collar convex from front to back, about as long

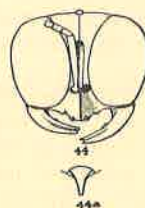


Fig. 44. *Rhopalum Turneri*, ♀, head; a, pygidium.

in the middle as at the sides, the shoulders rounded. There is a small but quite distinct epicnemium on the mesopleurae in front. Mesosterna with a raised line in front of the middle coxae, which ends outwardly in a sharp angle. Mesonotum convex, about one quarter wider across the tegulae than long in the middle, two and a half times longer than the scutellum; the suture between the mesonotum and scutellum ends on each side in a deep pit. First segment of the abdomen hardly petiolate, subconical, barely three times wider at the apical margin than at the base, only a little longer than wide at the apical margin; seen from the side it is strongly curved downwards towards the base and is barely longer than the second segment. The whole abdomen oblongo-ovate, widest across the third segment, about two and a half times longer than wide. Posterior tibiae swollen beyond the middle, and narrowed again at the apex, armed with a few short reddish spines on the outer margin. The transverse cubital vein on the forewing meets the radius at its basal third, and the discoidal meets the cubital a little before its middle. Basal lobe of the hindwing as long as its submedial cell.

Port St Johns, Pondoland, October (R. E. Turner), 1 ♀. Type in the British Museum.

This species exhibits some characters which are aberrant for the *Rhopalum* species-group, such as the presence of a distinct epicnemium and the absence of a distinct petiole. The position of the antennal sockets places it in the subgroup *Corynopus* Lep.

T. (Rhopalum) ichneumoniformis n.sp. (figs. 45, 45 a and b).

♀. 5.7 mm. long. Black. Fore and middle legs including the trochanters, basal fourth of the hind tibiae, scapes and pronotal tubercles, pale lemon yellow. Posterior trochanters more or less yellowish brown at the apex. Flagellum brown, paler below. Tegulae pale ochreous. Mandibles ochreous, the apical fourth fusco-ferruginous, the apex bidentate. Sternites and basal half of the petiole more or less rufous brown (pale burnt sienna). Wings hyaline, stigma and veins black. Clypeus with a dense silvery pubescence; a similar but very scanty pubescence also covers the lower half of the temples, the mesosternum and declivity of the epinotum. Elsewhere there is only a microscopic, sparse and greyish pubescence. Head and thorax shining, the vertex sparsely and exceedingly finely punctured, the temples microscopically so, the mesonotum with very fine punctures, which, however, are larger than those on the vertex and are separated by spaces about three times the diameter of a puncture. Mesopleurae and epinotum impunctate; the dorsum of the latter with a few short carinae at the base and a median impressed line which joins the groove on the declivity. Abdomen smooth and moderately shining. Pygidial area dull, triangular and flat, longer than wide at the base, the apex subacute. The structure of the clypeus is obscured by the dense pubescence, but if this be removed, the surface is seen to be finely punctured. The median area is not much produced, not carinate longitudinally in the middle, its anterior margin transverse and armed with four blunt teeth.

The width of the face at the level of the antennal sockets is equal to the

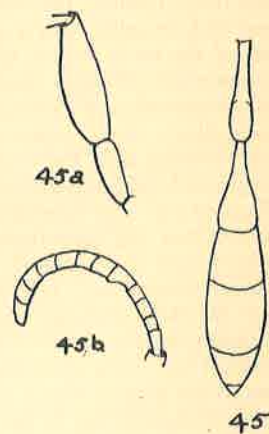


Fig. 45. *Rhopalum ichneumoniformis*, ♀, abdomen; a, trochanter and femur of foreleg, ♂; b, flagellum of ♂.

length of the second and third joints of the flagellum. Between the antennal sockets there is a small oblong projection, the anterior margin of which is angularly excised. Face with a median impressed line, only feebly concave. Scapes relatively shorter than in *R. Turneri*, the first joint of the flagellum nearly as long as the third and nearly twice as long as the second. Ocelli arranged in an equilateral triangle, the posterior pair twice as far from the eyes as they are from each other. Pronotal collar shorter in the middle than at the sides, the anterior margin tumid. Mesonotum two and a third times longer than the scutellum, the latter not much wider than long. Petiole unusually long and slender and distinctly nodose; it is four times longer than wide across the node, and as long as the second segment plus two-thirds of the third. The rest of the abdominal complex is elongate and clavate, the second segment at its base narrower than the node of the petiole and three times wider across the apical margin than at the base. The trochanters of the fore and middle legs are distinctly long, being nearly half as long as the femora. Second abscissa of the radius two and a half times longer than the first. The transverse cubital vein meets the radius a little beyond its middle.

♂. 4 mm. long. Ventral surface of the abdomen black. Sides of the epinotum smooth and shining. First joint of the flagellum a little longer than the second, the fifth joint arcuately emarginate at the base. Trochanters of the fore and middle legs fully half as long as the femora. Otherwise like the ♀.

Mossel Bay, C.P., January (R. E. Turner). Several examples of both sexes. Types in the British Museum.

In the elongation of the trochanters this species shares a character which is distinctive of the *Tracheliodes* species-group.