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NEW SPECIES OF AFRICAN HYMENOPTERA NO. 16

By G. ARNOLD

FAMILY FORMICIDAE

VILLIAM L. BROWN

Subfamily Ponerinae

Bothroponera laevissima aspera var.nov.

B. laevissima Arn., 1916, Ann. S. Afr. Mus. XIV, 58.

This variety differs from the type of the species from Saldanha Bay by the stronger puncturation. In *laevissima* i.sp. the punctures on the head are less than one-fifth as wide as the first joint of the flagellum, and the interspaces are for the greater part five times as wide as the punctures. In this variety the punctures are about one-third as wide as the first joint of the flagellum and the interspaces are about one-third as wide as the punctures. The puncturation of the thorax is larger and deeper than in the type of the species, and the first tergite, which is almost impunctate in the type, has large shallow punctures separated by spaces as wide as the punctures. Otherwise this variety does not differ from the type of the species.

Numerous specimens coming out of holes in the ground, were collected by Dr A. J. Hesse and Mr Thom at Ysterfontein, which is not many miles from Saldanha Bay. No doubt further collecting will provide intermediate forms. Holotype of the variety in the South African Museum, paratype in the National Museum of Southern Rhodesia.

Subfamily Formicinae

Anoplolepis macrophthalma sp.nov. (Figs. 1, 1a, b)

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\$\times\$. 3.2 mm. long. Black. The scapes, mandibles, apex of the anterior femora, anterior tibiae and the anterior tarsi, pale ochreous. Flagellum yellowish brown, the last three joints darker. The whole body shining and impunctate. Under a magnification of not less than 35 diameters (stereoscopic binocular microscope) a greyish bloom is visible on the sides of the epinotum. Head about one-eighth wider than long, excluding the mandibles, the sides and posterior corners moderately convex, the hind margin straight. Maxillary palpi six-jointed, the mandibles quadridentate. Antennae eleven-jointed, the scapes more than half the length of the flagellum and extending beyond the hind margin the head; all the joints of the flagellum longer than wide. Eyes placed at the middle of the sides and one-third as long as the sides of the head, excluding the mandibles. Antennal carinae divergent caudad, wide apart, as in

A. trimeni-karrooensis Arn. Clypeus very convex, nearly twice as wide as long, the anterior margin convex. Pronotum fully two and a half times wider than long, the mesonotum not quite twice as long as the pronotum and a little longer than wide. Declivity of the epinotum nearly flat, longer than the dorsum which is very convex transversely. Scale of the petiole squamiform, the dorsal edge straight and entire.

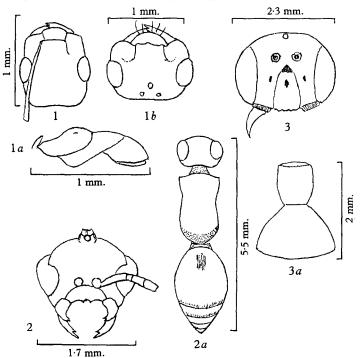


Fig. 1. Anoplolepis macrophthalma \(\Delta \) head. Fig. 1 a. Anoplolepis macrophthalma & thorax. Fig. 1 b. Anoplolepis macrophthalma & head.

Fig. 2. Corytilla guillarmodi 3 head. Fig. 2a. Corytilla guillarmodi \circ .

Fig. 3. Cerceris empeyi 3 (black = 4 yellow spots). Fig. 3a. Cerceris empeyi 3 first and second tergites.

2. 7.2 mm. long. Brownish black, mandibles reddish ochreous, the antennae, all the tibiae and tarsi and apices of the femora, ochreous. Wings hyaline, the veins and pterostigma yellow. Abdomen with a microscopic adpressed pubescence. Clypeus with about six exserted bristles on the apical margin, and fully twice as wide as long, the anterior margin convex. Eyes very convex, placed behind the middle of the head, and fully half as long as the sides of the head, excluding the mandibles. Ocelli large, situated at the back of the vertex, close to the occiput. Mandibles with five teeth, dull and closely striated. Head, excluding the closed mandibles, a little wider than long. Pronotum not visible from above. Mesonotum one and a half times wider at the hind margin than

long, all the thoracic sutures distinct. Scale of the petiole squamiform, the dorsal edge feebly concave. Radial cell of the forewing long and closed, the pterostigma about half as long as the single cubital cell. Otherwise like the $\mbox{$\xi$}$.

3. 2.5 mm. long. Head and abdomen brown, thorax brownish yellow above, ochreous below. Antennae and legs straw-yellow, the flagellum becoming gradually darker or pale brown in its apical third. Wings as in the \mathcal{Q} . Antennae twelve-jointed, the scapes extending beyond the hind margin of the head by at least half of their length. Eyes very convex, fully as long as half the sides of the head, placed at about the middle. Petiole as in the \mathcal{Z} . Sawmills Road, Nyamandhlovu, Southern Rhodesia, Nov. 1960. Types in the National Museum Southern Rhodesia.

Family MUTILLIDAE Genus Corytilla Arnold

1956, Occ. Pap. Nat. Mus. S. Rhod. 21 B, 63.

This genus was based on the 3 sex, the 9 being unknown. Mr Jacot-Guillarmod of the Albany Museum sent me for determination both sexes of what he believed were one species. As the 99 were captured in Jan. 1946 and the 33 in Nov. 1947, I queried his assumption, to which he replied as follows. 'The 3 Corytilla were one of the fairly common males on Calpurnia intrusa on which I also obtained a 3 Smicromyrme which I was later able to get in copula with one of two species of females. Having thus correlated the sexes of one species of Smicromyrme, and following Bischoff, I decided that the males which were obviously allied to his galeata would be those of the only other Smicromyrme female which occurs at Mamathes.'

I think that the correlation of the sexes of this species is probably correct, and can therefore say that the generic characters of the $\mathfrak P$ sex, based on these specimens of the new species C. guillarmodi described hereunder conform completely with the diagnosis of Bischoff (1920, p. 557). This fact notwithstanding I do not think that Corytilla should be considered a subgenus of Smicromyrme Thomson on account of the raised and subtriangular platform on the vertex, which is of generic value equal to that of the presence or absence of the felted groove on the second tergite to which Bradley & Bequaert (1928) attach importance in their keys to the genera and subgenera. Smicromyrme galeata Bischoff and S. calyptrata Bischoff should be transferred to the genus Corytilla.

Corytilla guillarmodi sp.nov. (Figs. 2, 2a)

- 3. 6-8 mm. long. Black, tegulae pale ferruginous. Wings hyaline, faintly fuscous. On the whole body there is a sparse, long and erect white pilosity. The apical margins of the first four tergites have a very narrow fringe of white and decumbent pubescence. The tubercles above the antennal sockets are ferruginous. Clypeus shining, the anterior margin excised in the middle, so that there is a blunt tooth on each side. Mandibles very broad at the base, the inferior margin excised, the upper margin with three teeth. Second joint of the flagellum a little shorter than the third. Face and vertex strongly reticulate-punctate. The raised platform on the vertex differs from that of the type of the genus C. pallidipes in being almost parallel-sided, i.e. less triangular, and with the anterior margin less clearly defined. The inner orbits are shallowly excised at about the middle. Pronotum, mesonotum and scutellum closely and coarsely punctured, the interspaces about as wide as the punctures. Epinotum with a wide reticulation, the spaces enclosed by the meshes, in the middle of its dorsum, larger than the anterior ocellus. Tegulae sparsely and finely punctured. The puncturation of the tergites decreases in size on each following segment; on the second tergite the interspaces are as wide as the punctures. Seventh tergite longer than wide at the base, its apical margin transverse and only slightly narrower than the base, the apical angles rectangular.
- 5.5 mm. long. Head and abdomen black. Antennal tubercles, mandibles, legs and thorax ferruginous. Antennae fusco-ferruginous. Head closely and deeply punctured, the interspaces narrower than the punctures. Dorsum of the thorax coarsely reticulate-punctate, the punctures twice as wide as those of the head. Pleura smooth and shining. First and second tergites reticulate-punctate, the punctures as large as those of the head, tergites 3-5 very finely and closely punctured. The sixth marginate, the basal two-thirds closely and longitudinally striate, the apical third smooth. Head and thorax with a sparse, decumbent and yellowish silvery pubescence, the second tergite with an oblong spot covered with a pale golden pubescence, the apical margin and also that of the third tergite with a narrow fringe of pubescence of the same colour. The second tergite has a very narrow felted groove, barely visible. Mandibles falcate and edentate, the apex acute. Clypeus very short, almost linear, the antennal sockets placed close to its hind margin. Inner orbits of the eyes not emarginate. Supra-antennal tubercles large, smooth and shining. Second joint of the flagellum one-fourth longer than the first and as long as the third. Thorax very little wider behind than in front, one-fifth longer than wide in front.

Genus Viereckia Ashmead

1903, Canad. Ent. pp. 324, 329.

Bradley & Bequaert (1928) reduced this genus, known only in the \mathfrak{P} sex, to a subgenus of *Smicromyrme*. I do not think this is justified for the following reason.

In all the other Mutillidae the bright oval or round spots and the apical fringes are due to the colour of the pubescence which covers those parts. In *Viereckia* species the spots are glabrous, and the colour is due to a difference in the integument, a colour which varies from yellow to pale yellowish red. This character seems to me to be one of generic value, equal in importance to any of the other characters which those authors have considered as being generic.

Viereckia should be restored to generic rank.

Family SPHECIDAE Subfamily Cercerinae

Cerceris empeyi sp.nov. (Figs. 3, 3a)

3. 11 mm. long. Black. Petiole on first tergite ferruginous. The following parts are pale lemon yellow: a broad triangular spot above the clypeus, a smaller spot on each side above the clypeus, a very small spot on the base of the clypeus, the anterior half of the tegulae, a broad band narrowed mesad on the apical half of the third tergite and sternite and a narrow apical band on the fifth tergite, the sixth tergite. Femora and tibiae ferruginous, the upperside of the tibiae pale yellow, the tarsi pale yellow, the hind tarsi pale brown. Wings hyaline, the apical fourth fuscous, the veins black. Head with a sparse, very short and grey pubescence. Clypeus, face, vertex and temples closely reticulatepunctate and dull, the puncturation larger and less close behind the ocellar area. Triangular area of the epinotal dorsum smooth, shining and with a median longitudinal groove and traces of transverse striae at the base. The rest of the thorax, the tergites and basal half of the third and following sternites reticulate-punctate, the punctures on the dorsum of the thorax and on the tergites as large as those on the vertex behind the ocelli. Epimerum of the mesopleura produced into a triangular horizontal crest, projecting beyond the tegulae and plainly visible from above. Mandibles falcate, the inferior margin slightly dilated beyond the middle. Median area of the clypeus ovoid, nearly twice as long as wide, the apical margin feebly crenulate. Inner orbits moderately divergent above and below. Interocular distance on the vertex equal to the length of the first six joints of the flagellum plus half of the seventh, petiole about one-fifth longer than wide, the sides feebly convex. Pygidial area quadrangular, slightly wider at the base than at the apical margin which is straight, the puncturation very large. Hind tibiae with six spiniferous serrations.

Strubens Val. Transvaal, 1 of, 4 Nov. 1961. (Collector's number 2001.) Type in N.M.S.R.

I have much pleasure in naming this species after Mr Empey, who has not only collected the aculeate Hymenoptera but has made careful notes of their habits and nesting sites. The species is related to the hypocritica, holconota and nobilitata group, which have an epimeral crest. It differs from the first by its greater size, colour of the face and shape of the petiole. From holconota it differs by the colour of the face, and second and third tergites. From nobilitata it differs by the colour of the face and second tergite, the wider pronotum. The epimeral crest is less triangular in *nobilitata* and its upper surface is not flat but convex.

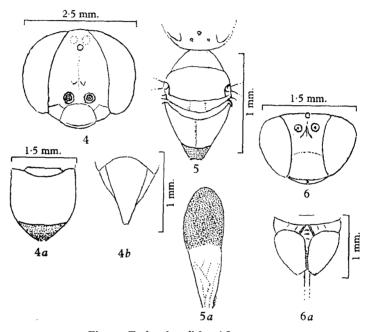


Fig. 4. Tachysphex dicksoni \(\begin{aligned} \text{.} \\ \end{aligned} \]

Fig. 4a. Tachysphex dicksoni epinotum. Fig. 4b. Tachysphex dicksoni pygidium.

Fig. 5. Miscophus reptans Q.

Fig. 5 a. Miscophus reptans wing.

Fig. 6. Psenulus stuckenbergi ♀ head.

Fig. 6a. Psenulus stuckenbergi epinotum.

Subfamily LARRINAE

Tachysphex dicksoni sp.nov. (Figs. 4, 4a, b)

Q. 8 mm. long. Black. Anterior tibiae and tarsi fusco-ferruginous, last two joints of the posterior tarsi ferruginous. Tegulae dull ochreous. Wings hyaline, the veins and pterostigma dark brown.

Clypeus and lower half of the sides of the face with a dense, decum-

bent silvery pubescence. Sides of the thorax with a very short greyish pubescence, the first three tergites with greyish and very fine, almost pruinose, apical fasciae. Face and vertex dull, with a very fine and closer puncturation, barely resolvable with a magnification of 16 diameters. Temple smooth and shining. The apical half of the median area of the clypeus shining and with a few large punctures. Mesonotum and scutellum almost dull, with a puncturation a little larger than that of the vertex, the interspaces as wide as the punctures. Mesopleura and metapleura with a very shallow puncturation, less close than that of the mesonotum. Dorsum of the epinotum dull, very closely reticulate, the reticulations resolvable with a magnification of 30 diameters. Tergites 1-5 dull, microscopically and closely punctured, the sixth tergite shining with a few large and shallow punctures. Sternites nitidulous, impunctate. Median area of the clypeus a little wider than long, the apical margin feebly convex. Interocular distance across the base of the clypeus nearly three times greater than on the vertex, where it is equal to the length of the first two joints of the flagellum. The second joint of the latter is one-fourth longer than wide and slightly shorter than the third. Dorsum of the epinotum one and a half times wider at the base than long, the posterior angles rounded. Pygidium elongate triangular, one and a half times longer than wide at the base, the apex very narrowly truncate.

Lions Head, Cape Town (C. G. C. Dickson), 20 Feb. 1949, 1 \(\bigcep. \) Type in N.M.S.R. In my key to the species (Arnold, 1924) this runs down to segregates (46) 47 but it differs, inter alia, from bipustulosus (emend bituberculatus) in not having the supra-antennal tubercles hypertrophied, and in the sculpture of the thorax.

Miscophus reptans sp.nov.

Q. 3.5 mm. long. Head and thorax black, abdomen brownish red (burnt sienna) mandibles, scapes and legs reddish yellow, antennae brownish red, coming gradually darker towards the apex, so that the last seven joints are almost dark brown. Hind wing and basal half of the forewing flavo-hyaline, the veins dark brown, the apical half fuscous. Clypeus pale reddish brown. Head and thorax with a very sparse pubescence, composed of very thin decumbent silvery hairs. A few longer, erect hairs on the thorax and first tergite.

Clypeus smooth and shining, face and vertex dull, reticulatepunctate, the punctures barely resolvable with a magnification of 60 diameters. Thorax dull, the pro- and mesonotum with a shallow and somewhat sparse puncturation. Dorsum of epinotum reticulate and with a median longitudinal carina, the declivity nitidulous and transversely striate. Tergites dull, closely and very finely punctured (60 diameters).

Mandibles falcate. Clypeus short, about six times wider than long in the middle, the apical margin feebly convex. Inner orbits moderately divergent anteriorly; the head, including the eyes, is as wide as long. First joint of the flagellum one-fourth longer than the second, and little shorter than the third. Posterior ocelli one and a half times farther from each other than from the eyes. Pronotum narrowed cephalad, four times wider behind than long in the middle. The scutellum, somewhat damaged in this specimen, appears to be flat and about twice as wide as long. Dorsum of the epinotum twice as wide at the base as at the hind margin. Middle tibiae with three spines at the apex and two large ones a little behind the apex. Calcaria black.

A single specimen was taken on the Kalahari Sand formation on the Sawmills Rd., about 2 miles from Nyamandhlovu, Southern Rhodesia. Its movements were peculiar; with the wings in constant motion, it would run zigzagging for about 8 or 10 in., then it would rise for about 2 in. and fly a short distance and, settling again on the ground, resume its zigzag course. On account of its colour it would have escaped notice but for the fluttering of the wings. It cannot be mistaken for any of our other species on account of the colour of the body and the dark fuscous apical half of the forewing. Type in N.M.S.R.

(N.B. In Fig. 5a of the right forewing the venation is not to be regarded as accurate, as the wings have curled up a little; it has been

drawn to indicate the extent of the fuscous area.)

Subfamily PEMPHREDONINAE

Psenulus stuckenbergi sp.nov. (Figs. 6, 6a)

2. 7.2 mm, long. Black. Apex of anterior femora, anterior and middle tibiae and basal third of posterior tibiae pale yellow. Scapes black, the underside of the flagellum brownish yellow, paler on the first four joints, the upper side pale brown. Wings hyaline, the veins black, the tegulae testaceous. Clypeus and face with a dense silvery pubescence which obscures the underlying sculpture; a similar pubescence but less dense on the temples, mesopleura and sides of the epinotum. Sternites with a very fine, decumbent and greyish white pubescence, sparse on the first four sternites. Clypeus and lower half of the face dull, the upper half and the vertex and temples shining, very shallowly and sparsely punctured, the interspaces wider than the punctures. Dorsum of pronotum very short, dully and transversely striated. Mesonotum shining, punctured, the punctures about twice as large as those of the face, with interspaces wider than the punctures. Scutellum and metanotum microscopically punctured, mesopleura smooth and shining. Dorsum of epinotum shining, microscopically striolate, the sides transversely and closely striate. There is a marginate Y-shaped median area, continued down the declivity as a narrow groove, the angle of the Y with three transverse carinae, and the arms of the Y with two or three indistinct carinae. The epinotum is like that of P. bidentatus Cam., with which the species is in no way related. On the face, below the antennal sockets, there is a high and acute carina. Anterior margin of the clypeus convex, without teeth. Flagellum moderately clavate, the first joint nearly as wide as long, the second joint three and a quarter times longer than wide

at the apex and one-third longer than the third joint. Posterior ocelli one and a half times farther from the eyes than from each other. Inner orbits convergent below, the interocular distance on the vertex equal to the length of the first four joints of the flagellum and more than twice as wide as the interocular distance at the base of the clypeus. Abdomen smooth and shining. Petiole as long as the three following tergites united, its apical third nodose. First abscissa of the radius half as long as the fourth, and nearly twice as long as the second. Both recurrent veins enter the second and third cubital cells close to their proximal angle.

Marromeu, Portuguese East Africa, 1 ♀ Nov. 1957 (R. B. Stucken-

berg). Type in N.M.S.R.

Nearest to *P. latiannulatus* Cam. from which it differs by the sculpture of the mesonotum, the facial carina, the colour of the underside of the scapes and epinotal dorsum.

(After this description was written, the abdomen became detached and could not be found.)

Family POMPILIDAE

Subfamily Pompilinae

Pseudoclavelia bituberculata sp.nov. (Figs. 7, 7a-c)

. Q. 8·5 mm. long. Black. A silvery pubescence covers the lower fourth of the face, the hind margin of the vertex, the hind margin of the mesonotum, the scutellum and metanotum at the sides and the coxae, femora and tibiae. The dorsum of the epinotum has a microscopic greyish and decumbent pubescence on the sides. First and second tergites with very narrow apical fasciae of white pubescence. The whole body, except the dull clypeus, nitidulous and impunctate. Forewing faintly fuscous over the basal third, the apical third brownish fuscous, with a circular white spot at the apex; the hindwing hyaline.

Clypeus three times wider than long, the apical margin straight. Mandibles narrow and falcate. Second joint of the flagellum three times longer than wide at the apex, and four-fifths the length of the third joint. Cheeks well developed. Interocular distance on the vertex equal to the length of the first two joints of the flagellum plus half of the third. Pronotum two-fifths wider behind than long. Mesonotum two and a half times wider than long. Metanotum nearly as long as the mesonotum. Epinotum widest in the middle, slightly wider at the base than long, much longer than the very short and vertical declivity, its posterior corners produced into blunt teeth or tubercles. First tergite a little longer than wide at the apex. Calcar of hind tibia two-thirds as long as the tibia. Second cubital cell of forewing three times longer on the cubital than on the radius.

Victoria Falls, December; type in N.M.S.R.

This species differs from all the other species by the tuberculate posterior corners of the epinotum.

Paracyphononyx diversipes sp.nov. (Figs. 8, 8a)

3. 8 mm. long. Black, apical tergite yellowish white, flagellum dark reddish brown, underside of the scapes pale greyish yellow. Wings hyaline, pale fuscous beyond the cells. Clypeus and lower third of the face and temples with a very short grey pubescence, and with a sparse, erect and brown pubescence. Thorax with a decumbent, grey and very fine pubescence. Sides of scutellum and the declivity of the epinotum with a dense, erect and greyish white pubescence. Basal half of the first four tergites with a bluish grey bloom.

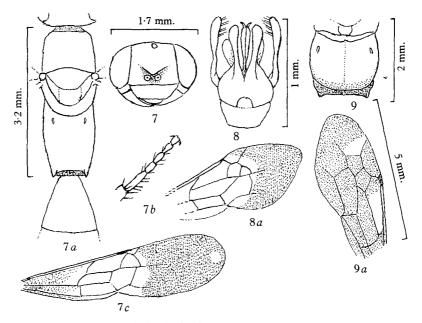


Fig. 7. Pseudoclavelia bituberculata \(\rightarrow \) head.

- Fig. 7a. Pseudoclavelia bituberculata thorax. Fig. 7b. Pseudoclavelia bituberculata anterior right tarsus.
- Fig. 7c. Pseudoclavelia bituberculata forewing.
- Fig. 8. Paracyphononyx diversipes of genitalia.
- Fig. 8a. Paracyphononyx diversipes apical half of forewing.
- Fig. 9. Pompilus guttaticornis ♀ epinotum.
- Fig. 9a. Pompilus guttaticornis anterior part of wing.

Clypeus twice as wide as long in the middle. Interocular distance on the vertex equal to the length of the first three joints of the flagellum and very little wider than across the base of the clypeus. Fourth to eleventh joints of the flagellum concave above and convex below, the second joint a little shorter than the third. Interocular distance on the vertex only a little greater than across the base of the clypeus, and equal to the length of the first three joints of the flagellum. Dorsum of the epinotum twice as wide at the base as long, the lateral margins feebly convex. The inner calcar of the middle and hind tibiae long, fully two-thirds as long as the basitarsus. Second cubital cell of the forewing two and a half times wider on the cubitus than on the radius; the third cubital cell petiolate, the petiole nearly as long as the second abscissa of the radius.

 \circ . 8-10 mm. long. The \circ of this species could easily be mistaken for an undersized *ruficrus* Klug, var. *arnoldi* Bischoff, and like that variety the hind femora and tibiae are reddish yellow, but the femora are of that colour except at the basal fourth. The wings are not so dark fuscous as in *arnoldi*, and the length of the petiole of the third cubital cell varies, in the allotype it is like that of the \circ , but in another specimen the second and third transverse cubital veins meet on the radius. The interocular distance on the vertex is a little greater than the length of the first two joints of the flagellum. It also differs from the var. *arnoldi* in having the second cubital cell less narrowed above, the width on the radius being three-fifths of that of the cubitus. The epinotal dorsum is narrower than in *arnoldi*, being three-fourths wider than long, whereas in *arnoldi* it is twice as wide as long.

Salisbury, Southern Rhodesia. 5 33 and 4 99. Although the colour of the hind femora and tibiae differ in the two sexes, there can be no doubt that the sexes are correctly correlated, as they were all taken at the same time on a flowering bush. The outer ramus of the outer paramera (stipites) is unlike any of the other African species. In my monograph of the genus in *Ann. Transv. Mus.* xvIII, 1936, 429, figures of the outer ramus of seven species were given. Types in N.M.S.R.

Pompilus guttaticornis sp.nov. (Figs. 9, 9a)

Q. 12-13 mm. long. Head, postnotum, epinotum and abdomen black. Pronotum, mesonotum, scutellum and disc of metanotum dark red. On the apex of the third joint of the flagellum and on the base of the fourth joint there is a small pale ochreous spot. On the upper side of the hind tibiae at the base there is a streak of the same colour and the sixth tergite, except at the sides and apex is also pale ochreous. Wings brownish fuscous. The medial cells of fore- and hindwings, the first cubital cell of the forewing and narrow area between the radius and cubitus, outside the third cubital cell, paler. Clypeus and lower third of the face with a decumbent and very fine and greyish pubescence, the rest of the body glabrous. Palpi short, the last three joints of the maxillary palpi united hardly as long as the first two joints of the flagellum. Mandibles with a small tooth on the upper margin at about two-thirds from the base.

Inner orbits almost parallel. Clypeus three and a half times wider than long, the apical margin feebly concave. All the joints of the flagellum excepting the first at least twice as long as wide. The second joint a little more than four times longer than wide and about one-eighth longer than the third. Pronotum three and a half times wider than long in the middle. Postnotum transversely striated, nearly as long as the metanotal disc.

Dorsum of the epinotum twice as wide at the base as long, with a median longitudinal impressed line, joining the declivity in a low arc, the declivity feebly flattened in the middle. Claws bifid. Second abscissa of the radius a little longer than the third, the recurrent veins meet the second and third cubital cells at the middle. Nervulus interstitial. The cubitus and parallel veins do not reach the apical margin. (H. J. Bredo) Kaputa, Lake Mweru, Northern Rhodesia (8 Jan. 1944) holotype. Four paratypes from Kaputa, Nsama and Buleya, Lake Mweru. All in N.M.S.R.

This very distinctively coloured Pompilid cannot be mistaken for any other species of the genus.

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