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THE SPHEGIDAE OF SOUTH AFRICA

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PART VI

With 25 text-figures

PHILANTHUS Group

GENERAL CHARACTERS. Mandibles not excised on the outer margin, the inner margin usually edentate, the apex simple. Maxillary palpi 6-, labial palpi 4-jointed. Clypeus with the median sclerite larger than the lateral sclerites, the latter in the ♂ bearing a moustache of long, and more or less agglutinated, hairs. Ocelli normal.

Mesopleurae without an epicnemium. In some genera the ♀ has a distinctly marginate pygidial area, in others it is marginate only at the base or not at all. Seven to eight ventral segments visible in the ♂.

Middle tibiae with one spur (excepting *Nectanebus*); tibiae and tarsi spinose, the ♀ usually with a distinct comb on the anterior tarsi.

Wings with three cubital cells, the second in some genera stalked on the radius; radial cell not appendiculate.

This group is arranged by Kohl as follows:

PHILANTHUS group	{ Subgroup PHILANTHUS s.l.	{ PHILANTHUS s.str. TRACHYPUS Klug. PHILOPONUS Kohl. APHILANTHOPS Patt.	{ PHILANTHUS Fab. ANTHOPHILUS Dhlb.
		{ Subgroup CERCERIS s.l.	{ CERCERIS Latr. EUCERCERIS Cresson. CERCERIS Dhlb. NECTANEBUS Spin. DIDESMUS Dhlb.

Of these only *Cerceris s.str.* and *Philanthus* occur in our region. It is, however, not improbable that the palaearctic genus *Philoponus* may later on be discovered within the Ethiopian region.

In the following pages I shall deal only with the genus *Philanthus*, since the S.A. species of the genus *Cerceris* have been monographed by Dr H. Brauns in a paper which will be included in a subsequent part of these *Annals*.

## PHILANTHUS Fab.

*Skript. naturh. Selsk. Copenhagen*, 1, p. 224. 1790.

CHARACTERS. Head wider than the thorax. Eyes reaching the base of the mandibles in the ♀, or very nearly so, but usually separated therefrom in the ♂ by a distinct cheek. Inner margins of the eyes subreniform, the excision shallow and obtusely angular. Antennae inserted fairly far apart, the face sometimes swollen between them. Inner margin of the mandibles edentate, the outer entire, the apex simple. Flagellum incrassate medially, more or less spindle-shaped. Pronotal collar not sunk below the level of the mesonotum. The episternal suture is usually distinct. Dorsum of epinotum rounded transversely, its posterior margin also rounded, the declivity oblique; a median basal area (triangular area, *area cordiformis*) sometimes present on the dorsum.

The abdomen is occasionally slightly constricted between the first and second segments, the former apically is rarely much narrower than the second at its base. The second sternite has on each side a narrow ovate area, feebly depressed and usually more delicately sculptured than the rest of the segment. In the ♀ the pygidial area is indistinct, having no raised lateral margins, but on the contrary, there is usually a narrow, smoother and slightly depressed border at the sides and at the apex.

Forewing: three cubital cells, the first and second recurrent veins entering the second and third cubital cells respectively; radial cell lanceolate; first submedial cell much longer than the second.

Hindwing: the cubital vein arises either at or beyond the end of the submedial cell; rarely before the same. Basal lobe long.

Legs spinose, the posterior tibiae more or less serrate on the outer margin. Anterior tarsi with a comb in both sexes, but only feebly developed in the ♂.

Distribution. Ethiopian and Holarctic regions, including Central America.

The species of this genus nest in sandy soil, and provision their young with various Apidae.

Of all our Ethiopian genera, this one and *Tachytes* are probably those which will give the student of the Sphegidae the greatest difficulty in the identification of the species. The study of a fairly large amount of material has led me to the conclusion that *Philanthus* is a genus of fairly recent origin, in which the specific characters have hardly had time to become fixed. Our African species appear to belong to a comparatively small number of ill-defined species groups, the individual members of which are closely allied, notwithstanding occasional sharply contrasted colour differences. That there is a considerable range of variation in colour is clearly apparent by the study of even only one species, *e.g. triangulum* F. Of the many structural characters indicated by Kohl in *Die Gattungen der Sphegiden* as of importance in the differentiation of the species, there are several which appear to me to furnish very little help in regard to our African species. Within the species groups mentioned above, there is, for instance, very little appreciable difference in the interocular width of the vertex, the width of the temples is also fairly constant relatively to the width of the eyes, the anterior margin of the median area of the clypeus is, generally speaking, astonishingly uniform, and also the shape of the apical abdominal segments in both sexes.

In nearly all our species, the median area of the clypeus in the ♀ has a very narrow black anterior margin, very slightly produced in the middle as a short and usually bisinuate lobe, with a small tooth on each side of the latter. This black portion is covered by the marginal fringe of short hairs, and its structure is not easily observable. In the descriptions which follow, special

reference to this black margin has usually been omitted, since it is present in nearly all our species. Similarly in the ♂, the anterior margin is also black, with three small blunt teeth in the middle. Only in a few species does the black colour extend backwards to any great extent, and then only as a quadrate patch in the middle which does not reach beyond the anterior half of the clypeus. There is no suture between the median and lateral sclerites, so that the exact form of the lateral sclerites is not easily defined, although it is of value in the discrimination of the species. A vertical line drawn from the anterior margin to the angle on the posterior margin (usually indicated by a black suffusion), where the median and lateral sclerites unite, roughly defines the limits of the lateral sclerites. Even so, the shape of the lateral sclerite in the ♂ is obscured by the presence of the moustache, which is inserted on the greater part of its anterior margin. It is at times necessary to push this bunch of hairs forward with a pin, before the true shape of the sclerite can be ascertained. (In the illustrations of the head, the moustache, except in two instances, and the mandibles in both sexes, have been omitted for the sake of clearness.)

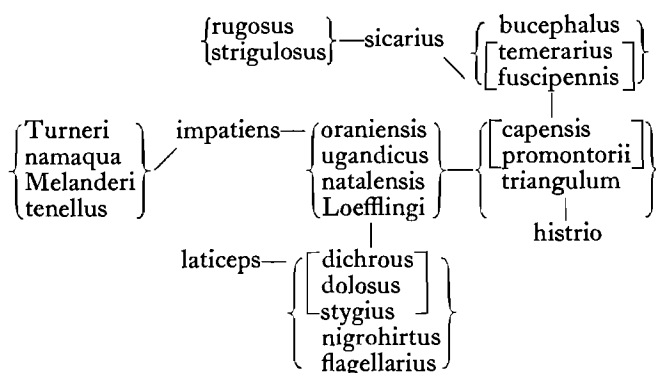
Probably owing to the lower face being coloured like the clypeus, there is to the naked eye a deceptive suggestion of difference in the proportions of the median area of the clypeus in the several species. Actually, however, it will be found by exact measurement that in nearly all species the median area is about as long as wide (measured across the angles of junction with the lateral sclerites). Moreover, the lateral sclerites are in nearly all cases and in both sexes about half as wide as the median. In the ♂, the lateral are shorter and more attenuated towards the eyes than in the ♀.

The apex of the pygidium in the ♀ is usually rounded, with a very small excision in the middle. This excision varies so little in extent that it is of no value in the separation of the species. In the ♂, the apical sternite is always more or less arcuately or angularly emarginate at the apex, but the emargination differs too little to furnish a reliable diagnostic character.

The abdomen in many of our species is often diffusely discoloured owing to the dried internal organs showing up through the thin integument. These smoky or brownish patches must not be confused with the true colours of the abdomen, which are, moreover, in themselves somewhat variable within the species. In fully half of our species, there is on the dorsum of the epinotum an area differentiated from the rest of the dorsum either by raised margins or by a difference in sculpture. This area, which is homologous with the median basal area of other Sphegids, covers the greater part of the dorsal surface of the epinotum, and according to the usage of continental authors has been termed the *area cordiformis*. In the following pages it is referred to as the 'triangular area,' a term more in conformity with its actual shape. In measurements of the first tergite, the length is to be taken along the tangent to the upper surface, and not along the curvature of the segment. The reader should bear in mind that the expression "otherwise like the other sex" which follows some of the descriptions must be understood to leave out of account the usual sexual differences, such as the different proportions of the antennal joints, the smaller number of spines on the tarsal comb of the ♂, etc. (All the species hitherto described, of which I have seen the types, are indicated in the following pages by an asterisk.)

In the keys to the species, only those are included of which I have seen examples. These keys are not as satisfactory as one might wish, but with such closely allied species as are found in this genus it is difficult to avoid using colours as diagnostic characters, and the keys are therefore put forward in the hope that they may prove of some little assistance.

The species appear to me to fall into groups which may be indicated according to the following plan. The names enclosed together in square brackets are, I believe, probably only different forms of one species.



#### KEY TO THE SPECIES OF *PHILANTHUS* ♀♀

- (6) 1. First tergite with a transverse depression behind the apical margin, the depression dull, coriaceous, widely clathrate and covered with a very fine and dense pubescence (fig. 10). (Vertex and mesonotum shining, very sparsely and coarsely punctured; triangular area of epinotum polished and impunctate.)
- (3) 2. First tergite ferruginous, longer than wide at the apex.  
**Melanderi** Brauns
- (2) 3. First tergite black, not longer than wide at the apex.
- (5) 4. Abdomen black, with pale yellow markings on at least some of the segments.  
**Turneri** Arnold
- (4) 5. Abdomen without yellow markings, the second to fourth segments ferruginous.  
**namaqua** Brauns
- (1) 6. First tergite not depressed behind the apical margin.
- (8) 7. Head three-quarters wider than the thorax at its widest, twice as wide across the clypeus<sup>1</sup> as across the vertex; the anterior margin of the clypeus deeply bisinuate, owing to the median area being strongly produced.  
**laticeps** Arnold
- (7) 8. Head narrower, the median area of the clypeus not greatly produced in front.
- (18) 9. Dorsum of epinotum with a triangular area distinctly defined from the rest of the segment by its polished impunctate surface (rarely slightly punctured near the apex). See fig. 4 c.
- (13) 10. Abdomen black, with sharply defined pale yellowish or yellowish white markings.
- (12) 11. Length 9–12 mm. Clypeus, lower face and abdominal markings yellowish white or cream coloured; disc of mesonotum sparsely and coarsely punctured; sides of epinotum without yellow markings.  
**impatiens** Kohl
- (11) 12. Length 14.5 mm. Clypeus, lower face and abdominal markings pale chrome yellow; mesonotum more finely, and not very sparsely, punctured; side of epinotum posteriorly with yellow maculae.  
**oraniensis** Brauns
- (10) 13. Abdomen mainly yellow or reddish yellow, the base of the first tergite more or less blackish or fusco-ferruginous, the last three or four

<sup>1</sup> By this expression is to be understood the greatest width across the clypeus, i.e. a line tangential to the anterior margin of the eyes, just above the base of the mandibles.

segments sometimes diffusely infuscated, very rarely sharply marked with black.

- (15) 14. Temples and vertex never ferruginous, the former with a sharply defined, sub-pyriform, pale yellow spot; wings hyaline, very faintly fuscous, very rarely with any yellowish tinge; mesonotum slightly shining, the puncturation not very regular in the middle.  
*Loefflingi* Dahlbom
- (14) 15. A long streak of ferruginous or reddish ochreous colour on the temples, reaching the vertex, its margins indistinct; wings hyaline, tinged with yellow; mesonotum dull, closely and evenly punctured.
- (17) 16. Posterior ocelli half as far again from the eyes as they are from each other.  
*ugandicus* Magr.
- (16) 17. Posterior ocelli only very slightly farther from the eyes than they are from each other (less than one-third of the diameter of one ocellus).  
*natalensis* Brauns
- (9) 18. (a) The triangular area of the epinotum occasionally defined by a narrow smoother border, but with substantially the same sort of sculpture as the rest of the upper part of the segment, and therefore not clearly defined (fig. 17); or (b) clearly defined by a marked difference of sculpture, together with, in some cases, a smoother and often shining border on each side. (Figs. 20 c, 21 b, 24.)
- (32) 19. Dorsum of epinotum as in 18 (a).
- (31) 20. Wings fuscous or fusco-hyaline; femora and tibiae black, the latter sometimes with yellow streaks in front; thorax jet-black, with or without yellow markings.
- (22) 21. Abdomen dark ferruginous (dull, microscopically reticulate-punctate).  
*dichrous* Kohl
- (21) 22. Abdomen yellow.
- (24) 23. Triangular area of epinotum dull, slightly defined by a depressed line or groove on each side; sixth tergite smooth and shining. (Flagellum short and thick, the second joint very little longer than its apical width; thorax, excepting the tegulae, entirely black, mesonotum coarsely rugoso-punctate).  
*flagellarius* Turner
- (23) 24. Triangular area of epinotum without lateral grooves, defined from the rest of the segment merely by its sparser puncturation and the shining surface between the punctures; sixth tergite longitudinally and closely striate.
- (26) 25. Pilosity of upper face and temples long, dense and black (markings of the head and thorax deep chrome yellow, the vertex behind the ocelli with an oblique yellow mark on each side which touches the margins of the eyes).  
*nigrohirtus* Turner
- (25) 26. Pilosity of upper face and temples short, that of the temples not black.
- (28) 27. Vertex and posterior two-thirds of the mesonotum very sparsely punctured and very shining; second joint of the flagellum barely longer than wide at the apex and only a little longer than the third; wings dark fuscous.  
*stygius* Gerst., race *atronitens* Arnold
- (27) 28. Mesonotum not very sparsely punctured; second joint of the flagellum at least one-third longer than its apical width.
- (30) 29. Mesonotum dull, closely punctured all over.  
*dichrous*, race *dolosus* Kohl
- (29) 30. Mesonotum less closely punctured in the middle than elsewhere.  
*dolosus* var. *abyssinicus* Arnold
- (20) 31. Wings hyaline, faintly tinged with yellow.  
*triangulum* F. var. *diadema* F.
- (19) 32. Triangular area of the epinotum as in 18 (b).
- (34) 33. Abdomen ferruginous (strongly punctured, the first three tergites closely so and dull, the remaining tergites more sparsely punctured and slightly shining); triangular area of the epinotum dull all over,

- coarsely reticulate rugose, margined on each side by a thin raised line.  
*sicarius* Smith
- (33) 34. Abdomen if ferruginous, not entirely so; triangular area of epinotum without raised lines.
- (36) 35. Triangular area of epinotum dull, microscopically reticulate-rugulose, the median groove rugose, the sides near the base slightly coriaceous, the rest of the segment strongly reticulate-rugose and partly punctured (15 mm. long, abdomen black, with small yellow markings, dull, a sparse puncturation on the first tergite only). *capensis* Dahlbom
- (35) 36. Triangular area of the epinotum not like that of 35.
- (38) 37. Abdomen dull, very finely reticulate-punctate, without large punctures on the first three tergites excepting a few on the sides of the first. First and third tergites, and the fourth and fifth more or less, ferruginous; the second, third and fourth with pale yellow markings (triangular area of the epinotum closely and fairly finely rugose, bordered on each side by a narrow and finely coriaceous margin). *histro* Gerst.
- (37) 38. Abdomen in greater part shining, with large punctures on all the tergites, the first two sometimes with small punctures but at least without a distinctly reticulate-punctate fundamental sculpture.
- (40) 39. Triangular area of epinotum strongly rugose or reticulate-rugose, margined on each side by a coriaceous and more or less punctured border (first two tergites closely punctured, fairly dull; mesonotum dull, closely and not very coarsely punctured; wings fuscous, paler distally. Length 17-18 mm.) *bucephalus*
- (39) 40. Triangular area of epinotum rugose, margined on each side by a smooth and shining border, which is widest at about the middle (wings pale flavo-hyaline).
- (42) 41. Sixth tergite without striae, only shallowly and sparsely punctured (antennae reddish ochreous, slightly darker above; abdomen in greater part reddish brown; first four segments usually with pale yellow markings; dorsum of epinotum like that of *strigulosus*). *rugosus* Kohl
- (41) 42. Sixth tergite distinctly longitudinally striate.
- (44) 43. Abdomen yellow, the first tergite nearly dull, closely, shallowly and finely punctured; the smooth border of the triangular area of the epinotum fairly narrow; the second joint of the flagellum half as long again as its apical width; length 14 mm. or less. *fuscipennis* Guérin
- (43) 44. First two tergites and greater part of the third ferruginous, the first shining, not closely punctured, the punctures small and deep; the smooth border of the triangular area of the epinotum wide; second joint of the flagellum twice as long as its apical width; length 18 mm. *strigulosus* Turner

KEY TO THE SPECIES OF *PHILANTHUS* ♂♂

- (4) 1. First tergite longer than wide at the apex.
- (3) 2. First tergite shining, sparsely and strongly punctured. *Melanderi* Brauns
- (2) 3. First tergite microscopically rugulose and dull, with a few small and shallow punctures only on the sides. *tenellus* Arnold
- (1) 4. First tergite wider at the apex than long.
- (8) 5. Triangular area of the epinotum distinctly defined from the rest of the segment by its polished and impunctate surface, excepting the median groove and sometimes a narrow space near the base.
- (7) 6. First tergite dull, closely and strongly punctured, the remaining tergites shining, with large and deep punctures, which are fairly sparse on the third and following segments. Abdomen mainly black, the first tergite always entirely so. *Turneri* Arnold

- (6) 7. First tergite shallowly and not very closely punctured, slightly glossy, the remaining tergites shallowly and not very sparsely punctured, almost dull. Abdomen mainly yellow, the first tergite with at least a yellow spot on each side, the second almost entirely yellow.
- (5) 8. (a) Triangular area of the epinotum not clearly defined, or (b) clearly defined by a raised line or smooth and shining lateral borders. *impatiens* Kohl
- (26) 9. Epinotum as in 8 (a).
- (11) 10. Abdomen distinctly punctured, the punctures deep but not very close. *triangulum* F. var. *diadema* F.
- (10) 11. Abdomen smooth, if punctures are present they are shallow and confined to the first tergite and to the sides of the following tergites.
- (19) 12. Wings distinctly smoky.
- (14) 13. The distance between the posterior ocelli and the eyes is distinctly greater than the diameter of one of the ocelli. *Loefflingi* Dahlbom
- (13) 14. Posterior ocelli separated from the eyes by a distance not greater than the diameter of one of the ocelli.
- (16) 15. Triangular area of epinotum shining, sparsely and strongly punctured; mesonotum with large and scattered punctures. *stygius* Gerst., race *atronitens* Arnold
- (15) 16. Triangular area of epinotum not shining, closely reticulate-punctate; mesonotum fairly closely punctured.
- (18) 17. Face and vertex with long black pilosity. *nigrohirtus* Turner
- (17) 18. Face and vertex with short pilosity. *stygius* Gerst.
- (12) 19. Wings hyaline, more or less tinged with yellow.
- (21) 20. Flagellum blackish above, ferruginous below. *capensis* Dahlbom
- (20) 21. Not more than the last two joints of the flagellum ferruginous.
- (25) 22. Dorsum of epinotum dull, shallowly reticulate-rugose, and also somewhat punctate between the rugae.
- (24) 23. Abdomen mainly chrome yellow (epinotum with a large yellow macula on each side covering the sides posteriorly and extending over a part of the declivity). *ugandicus* Magretti var. *xanthogaster* Cam.
- (23) 24. Abdomen less yellow than ferruginous and black (epinotum without yellow maculae). *promontorii* Brauns.
- (22) 25. Dorsum of epinotum not entirely dull, the margin of the triangular area at the sides basally and at the apex almost smooth and fairly shining. *ugandicus* Magretti
- (9) 26. Epinotum as in 8 (b).
- (28) 27. Triangular area of epinotum margined laterally by a thin raised line (the enclosed space rugose and reticulate); at least the first four tergites strongly and closely punctured. *sicarius* Smith
- (27) 28. Triangular area of the epinotum margined laterally by a narrow border, either (a) fairly smooth, dull and very finely rugulose, or (b) very smooth, shining and without sculpture.
- (34) 29. Epinotum as in 28 (a).
- (31) 30. Triangular area of the epinotum finely and closely reticulate-rugose, the surface outside the area more coarsely sculptured and reticulate-punctate; abdomen red and black, with pale yellowish white marginal bands on the third to fifth segments. *histrion* Gerst.
- (30) 31. Triangular area of the epinotum more coarsely sculptured than the surface outside it; abdomen without yellowish white marginal bands.
- (33) 32. Mesonotum dull, closely and evenly reticulate-punctate, more finely punctured than the vertex. *fuscipennis* Guérin, race *temerarius* Kohl
- (32) 33. Mesonotum coarsely punctured in the middle, and shining between the punctures, not more finely punctured than the vertex. *fuscipennis* Guérin

- (29) 34. Epinotum as in 28 (b).  
 (36) 35. Second to fourth joints of the flagellum more or less ferruginous below; second tergite with a chrome yellow spot on each side; length 13-14 mm. *rugosus* Kohl  
 (35) 36. Flagellum entirely black, excepting the end of the last joint; second tergite without yellow spots; length 18 mm. *strigulosus* Turner

*P. bucephalus* Smith cannot be placed easily within this key. In the structure of the epinotum it lies half-way between 27 and 28 (a), but it is distinguished from *sicarius* and all the species within paragraphs 28-35 by its large size, 15-16 mm., and the dark fuscous wings.

*P. triangulum* F. var. *diadema* F. (fig. 1 a, b). *Ent. Syst.* p. 373, ♀. 1775.  
 var. *diadema* F. *Spec. Insect.* 1, p. 471. 1781.

*P. frontalis* Gerstaecker. *Monatsber. Akad. Wiss. Berlin*, p. 509. 1857.

*P. transversus* Cameron. *Ann. Trans. Mus.* p. 147, ♂. 1910.

♀. 13-15.5 mm. long. Clypeus, lower face up to the emargination of the eyes and a bifurcate mark between the antennal sockets, pale yellowish or creamy white; anterior margin of the clypeus narrowly ferruginous; occiput, temples, a small area on the face within the emargination of the eyes, ferruginous; the rest of the face and the border of the occipital foramen black, the black colour extending from the upper face over the vertex to a variable degree. Antennae black, the base of the scape more or less reddish below; mandibles ferruginous, the apex black. Thorax black, with transverse bars of pale yellow on the collar of the pronotum, scutellum and postscutellum, variable in extent, often absent or reduced to two spots on the scutellum; pronotal tubercles ferruginous. Tegulae ferruginous, with a yellow spot in front which is often absent. Abdomen yellow, frequently one or more of the second to fourth tergites are stained blackish in the middle, the narrowly depressed apical margins darker than the rest of the segments, the fifth and sixth tergites are sometimes more or less reddish yellow, the first tergite is black at the base, the black colour extending triangularly backwards to a variable extent.

Fore legs, including the coxae and trochanters, reddish yellow; middle and hind legs yellow, with the bases of the femora, the coxae and trochanters black. Wings pale flavo-hyaline, darkest near the base, the veins and stigma reddish yellow.

Anterior margin of the clypeus fringed with short yellow hairs, the rest of the clypeus with a sparse whitish pubescence, the face with a greyish brown pubescence. Temples and thorax with a greyish pilosity, shorter on the dorsum than on the sides. Abdomen with a sparse and short pilosity at the sides and underneath, posterior femora with a row of long hairs on the posterior margin.

Clypeus and the yellow area of the face slightly shining, the former finely and sparsely punctured, the latter more closely so; the rest of the face closely reticulate-punctate, the vertex much more coarsely and less regularly punctured, the punctures becoming shallower and sparser at the sides, the temples very shallowly punctured. Sides of pronotum striate, the collar shallowly punctured above; mesonotum, mesopleurae, sides of the scutellum and postscutellum evenly punctured, the punctures as large as those on the vertex, the middle of the scutellum and postscutellum more shallowly and more sparsely punctured, the sides and declivity of the epinotum closely rugulose-punctate

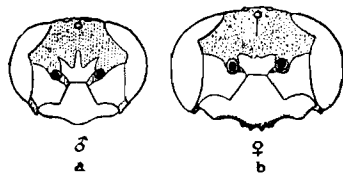


Fig. 1. *Philanthus triangulum* F. var. *diadema* F.  
 a, head of ♂; b, head of ♀.



and dull, the dorsum of the epinotum closely punctate, or almost reticulate-punctate, delimited from the rest of the segment only by its slightly less dull surface; in the middle there is a shallow longitudinal groove, slightly widened posteriorly and ending before reaching the brow of the declivity. Abdomen moderately shining, the segments sparsely punctured in the middle, more closely so at the sides, the fifth tergite more strongly punctured on its apical half, the sixth tergite shallowly punctured, the apical margin shallowly and angularly emarginate.

Anterior margin of the clypeus with two small teeth in the middle, and a blunter tooth on each side; these are not easily seen, being obscured by the fringe of hairs. Interocular distance on the vertex equal to a little more than the length of the first four joints of the flagellum. The second joint of the latter is barely one-third longer than the third. A fine carina extends a short distance forwards from the anterior ocellus. The posterior ocelli are separated from each other by as great a distance as they are from the eyes. Spines on the legs ferruginous, the comb of the anterior tarsi composed of long flattened spines, of which there are seven on the basal joint. The cubitus of the hind wing originates at the transverse median vein.

♂. 10-13.5 mm. long. Colouring, on the whole, like that of the ♀, but with the following differences. Cheeks (as long as the second joint of the flagellum) ferruginous; the yellow patch between the antennae is tridentate, the middle tooth narrower than the outer ones; the transverse yellow streaks on the pronotum, scutellum and metanotum are nearly always present, that on the scutellum only rarely absent or replaced by ferruginous. The abdomen sometimes has the apical and lateral margins of all the segments narrowly pale ferruginous; the seventh tergite is also of that colour, and the greater part of the third and fourth are often reddish yellow or fuscous; the first to fourth sternites are clouded in the middle with pale fuscous to an irregular extent, but chiefly towards the apical margin. The middle and hind femora are usually ferruginous, with only the apical fourth or so flavous. The sides of the face, from the emargination of the eyes upwards, are narrowly margined with ferruginous in some specimens. The sides of the epinotum are often ferruginous. The puncturation of the head and thorax is, in view of the smaller size of this sex, relatively deeper and larger than in the ♀. The abdomen is duller than in the ♀, and is sharply but not very closely punctured, the punctures being larger on the third to fifth tergites than on the others; the sternites are shallowly and sparsely punctured, except the last two, which are finely and closely so, and dull. Seventh sternite angularly emarginate, the apical angles rounded. Anterior margin of clypeus without teeth, the moustache is ochreous at the base, becoming darker towards the apex. Interocular width and the position of the ocelli as in the ♀. The second joint of the flagellum is more slender, being twice as long as wide at the apex. The median longitudinal groove on the dorsum of the epinotum is usually deeper and more distinct than in the ♀, and the puncturation there is also larger. Temples wider and more convex than in the ♀. A common species, widely distributed throughout the Ethiopian region. Apart from colour differences, the only characters which appear to me to distinguish our African examples from *triangulum* s.str. (e.g. specimens from Germany and Italy) are, the slightly narrower vertex in both sexes, and in the ♂♂ the thicker second joint of the flagellum and the closer puncturation of the abdomen.

In *triangulum* s.str. the abdominal segments are less extensively yellow, the tergites having a basal black band, more or less widened in the middle and sometimes almost reaching the apical margin at that point, so that the black colour covers a more or less triangular space. The ♂♂ are also coloured



in this manner, and although some of our smaller melanic examples (*e.g.* form *transversus* Cameron) are even blacker on the abdomen, yet the black pattern is not so distinctly triangular as in European specimens.

*P. capensis* Dahlbom (fig. 2 *a, b*). *Hymen. Eur.* I, p. 495, ♀. 1845.

♀. 15 mm. long. Black, the following parts yellow (on the head and thorax of a paler yellow than on the abdomen): clypeus, lower face, a bifurcate (sometimes tridentate) spot between the antennal sockets, a lanceolate streak on the temples above, the dorsal face of the pronotal collar more or less, the tegulae, the metanotum in the middle, a small irregular spot on each side of the first tergite near the apical margin, a quadrate patch on each side of the second tergite, covering more than the apical half of that segment and extending inwards apically as a narrow line barely meeting in the middle, and sinuous preapical bands on the third and fourth tergites which are widened laterally and often interrupted in the middle.

Apical margins of the first five segments rufo-testaceous; the pygidium ferruginous, its margins and apex flavo-ferruginous. Second to fourth sternites with subcrescentic preapical bands of yellow on each side. Coxae and trochanters black, the rest of the legs reddish ochreous, the femora darker, especially towards the base. Wings pale flavo-hyaline, the veins and stigma brownish yellow, the subcosta brown. Pilosity yellowish grey, fairly long, the first tergite also with a sparse pilosity at the sides and base. Antennae blackish above, ferruginous below, the scapes with a small yellow spot in front near the base. Mandibles dirty yellow, the apex piceous.

Clypeus and lower face slightly shining, the former sparsely, the latter more closely, finely punctured. Upper face dull, finely rugulose-punctate. Vertex and temples nearly dull, the former sharply, the latter shallowly, closely punctured. Thorax dull. Anterior face of the pronotal collar shallowly and fairly closely punctured, the sides of the pronotum closely striated. Mesonotum and mesopleurae fairly strongly and closely punctured, almost reticulate-punctate, the scutellum and postscutellum less closely punctured than the mesonotum, the sides of the epinotum shallowly and transversely rugulose-punctate, the declivity rugose and reticulate-punctate like the dorsum outside the triangular area; the latter is sharply delimited from the rest of the segment by its dull and almost smooth surface which under a high magnification is seen to be microscopically reticulate. The median groove is rugose and widened apically, more or less pyriform in shape. Tergites microscopically reticulate-rugulose and dull, the first with a sparse and very shallow puncturation, the fifth with a few preapical punctures, the pygidium sparsely and shallowly punctured near the base. Sternites moderately shining, microscopically reticulate-rugulose, the third and following sternites with large shallow punctures which become increasingly abundant towards the apical sternite.

Anterior margin of the median area of the clypeus black, produced in the middle into a short lobe, with a tooth on each side of the same. The interocular distance across the clypeus is half as great again as across the vertex, where it is equal to the length of the first four joints of the flagellum, plus half of the fifth joint. The second joint is two and a half times longer than its apical width, and as long as the third and fourth united. Posterior ocelli slightly nearer to each other than they are to the eyes. Dorsum of epinotum

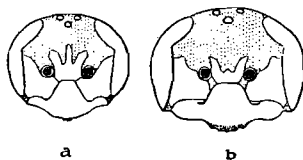


Fig. 2. *Philanthus capensis* Dahlb.

*a*, head of ♂; *b*, head of ♀.

as long as the scutellum. First tergite nearly twice as wide at the apex as long. Spines on the legs yellowish, the basal joint of the anterior tarsi with eight spines, the proximal spine very small.

♂. 13 mm. long. Colour, pilosity and sculpture (excepting the sculpture of the epinotum) as in the ♀, but the tibiae and tarsi outwardly are paler or chrome yellow, and the yellow on the second tergite is more extensive, so that only the basal margin and the middle third of the segment (excluding the preapical margin) are black. The first tergite is also more distinctly and closely punctured than in the ♀, and on the sternites the yellow colouring is more extensive, so that only the bases of the segments are black. The moustache is fusco-ferruginous, and the pilosity on the clypeus and lower face is more abundant. Second joint of the flagellum a trifle longer than the third and fourth united. Posterior ocelli as far from each other as they are from the eyes. The triangular area on the dorsum of the epinotum is not clearly defined except at the apex, where the sculpture is somewhat finer, the whole surface being closely reticulate-rugose. Anterior margin of the clypeus with three small teeth in the middle. Otherwise like the ♀.

Algoa Bay (Brauns); Mossel Bay (R. E. Turner).

\**P. promontorii* Brauns, n.sp. (*nom. in litt.*).

♂. 13–16 mm. long. A form closely allied to *capensis* Dahlb., and probably only a race of that species. The differences are chiefly in the size and colour; it differs from the ♂ of *capensis* as follows: Moustache black, antennae black, the apical joint ferruginous, the scapes with a yellow streak on the underside as in *capensis*. The yellow colour on the lower face is less extensive and the yellow spot between the antennal sockets is shorter, forming a more or less W-shaped transverse bar. The oblique streak on the temples is orange yellow, longer and wider than in *capensis* and almost reaching the ocular and occipital margins at its ends. The pattern of the markings on the abdomen is substantially the same as in *capensis*, but at first glance appears different owing to the black areas in that species being replaced in this one by yellowish red, except on the first tergite where the yellow maculae are larger than in *capensis*. On the second tergite the dirty yellow colour has no sharp margins but merges gradually into the reddish brown which colours the apical margin and a median triangular area. The margins of the transverse preapical bands on the third to fifth tergites are also diffuse. The puncturation of the head and thorax is relatively a little larger, deeper and less dense. The rugosity of the epinotum is stronger, but the triangular area is of the same shape as in *capensis* and quite as indistinct. The first tergite is less closely and more shallowly punctured. The pilosity of the face is darker, of a pale fulvous colour. The basal third or more of the fore and middle femora, and the basal two-thirds of the hind femora, are black. The dorsum of the epinotum is a little more sloping than in *capensis*. Mandibles reddish ochreous, the apices black. Otherwise like *capensis*.

Johannesburg, January (Kobrow). Type in R.M. coll.

*P. histrio* Fabr. (Plate II, fig. 2, 2a\*; text-fig. 3). *Syst. Piez.* p. 301. 1804.

*P. formosus* Smith. *Cat. Hymen. B.M.* IV, p. 471, ♂. 1856.

*P. trichocephalus* Cameron. *Ann. Trans. Mus.* II, p. 146, ♂. 1910.

*P. flavolineatus* Cameron. *Sjöstedt's Kilimandjaro-Meru Exped.* 8, p. 271. 1910.

♀. 12–13 mm. long. Head and thorax black; mandibles at the base, clypeus, lower face, a bifurcate mark between the antennal sockets and a small spot or streak between the fork, the pronotal collar above and the metanotum in the middle, lemon yellow. Vertex posteriorly, the occiput and temples

\* Vol. XI, part 1.

anteriorly, ferruginous. Apical third of mandibles piceous; scapes black above, dirty lemon yellow below, the first joint of the flagellum black, the remaining joints black above, ferruginous below. Pilosity whitish, not abundant. Second tergite black, the remaining tergites russet-brown, the second with a broad triangular pale ochreous mark on each side, the base of the triangles being placed obliquely and medially; the second to fifth tergites have a pre-apical band of ivory white, the bands widening in the middle and becoming wider on each succeeding segment. The first to fourth sternites blackish, with diffuse lemon yellow lateral spots and preapical bands, the fifth and sixth ferruginous. Coxae and trochanters black, the rest of the legs ferruginous with a black streak on the upper side of all the femora and an ivory white streak on the posterior tibiae outwardly. Wings pale flavo-fusco-hyaline and darker at the apex, the tegulae, costa, subcosta and stigma reddish ochreous, the other veins dark brown.

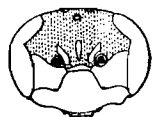


Fig. 3. *Philanthus histrio* Fabr.  
Head of ♀.

Clypeus shining, sparsely and finely punctured; lower face closely and finely punctured, moderately shining. Upper face dull, reticulate-punctate. Vertex and temples more coarsely and less closely punctured than the upper face. Neck and sides of the pronotum dull and rugulose, the vertical face of the collar slightly shining, fairly sharply but not closely punctured. Mesonotum, scutellum and metanotum dull, strongly and closely punctured all over; the mesopleurae as strongly punctured as the mesonotum but also somewhat obliquely rugose. Epinotum dull, strongly and closely reticulate-rugose, the triangular area distinctly defined by narrow, slightly tumid and feebly coriaceous lateral margins. The sides of the epinotum in front and the declivity below have the sculpture almost effaced, and are slightly shining. Tergites dull, microscopically reticulate-punctate, the first shallowly and fairly closely punctured at the sides, the fourth and fifth with a row of punctures behind the apical margin, the fifth in addition with a few large punctures behind the apical row, the pygidium with the lateral and apical margins smooth and shining, the rest of its surface finely rugoso-punctate. Sternites nitidulous, coarsely and sparsely punctured on the apical halves, the fifth and sixth punctured all over. Median area of the clypeus with a short rectangular lobe on the anterior margin and a small tooth on each side of the same. Interocular distance across the clypeus half as great again as across the vertex, where it is equal to the length of the first six joints of the flagellum. Posterior ocelli distinctly farther from the eyes than they are from each other. Second joint of the flagellum half as long again as the third. Dorsum of epinotum as long as the scutellum. First segment of the abdomen cupuliform, half as wide again at the apex as long in the middle; the second half as wide again apically as the first. Pygidium oblong, only very slightly narrowed apically, longer than wide at the base. Spines on the legs ferruginous, the basal joint of the anterior tarsus with seven spines.

♂. 12-13 mm. long. The yellow markings on the lower face are not so large as in the ♀, not reaching the inner orbits outwardly and inwardly not uniting below the antennal sockets, so that a small yellow triangle is left isolated behind the clypeus. The mark above and between the sockets is larger, not broken up into two or three separate spots. The black margin of the clypeus is broader and projects backwards in the middle as a quadrate macula. Scapes and first joint of the flagellum black, the second to fourth ferruginous, the rest fusco-ferruginous below, blackish above. The yellow streak on the metanotum is smaller than in the ♀, sometimes broken into two, or altogether absent. The third tergite is not entirely ferruginous, being black

for a short distance just behind the preapical yellow band; the fourth and fifth tergites are black, and these, as well as the sixth, have preapical yellow bands as in the ♀. The sixth and seventh tergites are pale ferruginous. Sternites darker than in the ♀, usually without the yellow maculae and transverse bands. Otherwise coloured like the ♀. Puncturation on the head and thorax finer than in the ♀, especially on the vertex and occiput; the rugosity of the epinotum also finer and closer. Second joint of the flagellum two-thirds longer than the third joint. Anterior margin of the clypeus with three small teeth in the middle. Otherwise like the ♀.

Generally distributed from Harar to Natal, including S. Rhodesia and Natal. (R.M. and T.M. colls.)

The following colour varieties of this species should be mentioned:

Var.  $\alpha$  ♂. Scapes with a yellow spot in front; middle and hind tibiae ivory yellow except at the extreme base; abdomen black, only the last two segments ferruginous; the yellow bands wider, the triangular marks on the second tergite larger and meeting at the base. The posterior femora entirely black.

Var.  $\beta$  ♂. Only the third and fourth joints of the flagellum ferruginous, the rest black. Abdomen black, the basal tergite reddish black, the depressed apical margins fusco-ferruginous; the triangular yellow marks on the second tergite infuscated, the preapical bands on the other tergites greyish yellow. (Kilimandjaro, Brit. Mus. coll.)

Var.  $\gamma$  ♂. First five abdominal segments black, the first tergite with an indistinct reddish spot on each side near the middle, the sixth and seventh segments ferruginous; the preapical yellow bands as in the type of the species. (Uganda, Brit. Mus. coll.)

*P. Loefflingi* Dahlbom (fig. 4 a, b, c). *Hymen. Eur.* 1, p. 495, ♀. 1845.

*P. innominatus* Bingham. *Ann. Mag. N.H.* (8), x, p. 212. 1902.

♀. 14–16 mm. long. Head and thorax black, with the following parts

pale lemon yellow: clypeus, lower face as far as the level of the upper margin of the antennal sockets, a patch between the latter (usually tridentate), a spot on the temples touching the eyes, the collar of the pronotum above, a spot on the tegulae, a quadrangular mark on the mesopleurae below the tegulae, the scutellum, and the postscutellum. With the exception of the clypeus and lower face, any or all of these yellow marks may be absent. Abdomen reddish ochreous, the base of the first tergite blackish. Legs black, the anterior and middle tibiae in front, and a spot near the apex of the same, yellow. Antennae black, the apical joint of the flagellum ferruginous. Wings hyaline, faintly tinged with fuscous, veins and stigma brown. Pilosity dirty yellow or greyish, not dense. Clypeus and yellow area of the face shining, the former smooth and impunctate, the latter finely and sparsely punctured posteriorly. Upper face dull, closely punctured and rugulose longitudinally. Vertex shining, strongly but not very closely punctured, the punctures on the temples becoming shallower and scantier below. Pronotal collar shallowly punctured, slightly shining; the sides of the pronotum dull and obliquely striated. Mesonotum strongly, evenly and fairly closely punctured, almost dull, the scutellum less closely, the postscutellum only feebly punctured. Mesopleurae a little less strongly punctured than the mesonotum. Sides and declivity of the epinotum dull, strongly transversely striato-punctate; the triangular area covers nearly the whole of the dorsum and is sharply delimited from the rest of the segment

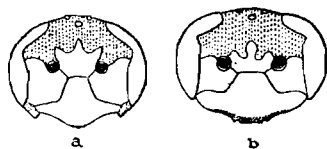


Fig. 4. *Philanthus Loefflingi* Dahlb.  
a, head of ♂; b, head of ♀.

by its smooth and shining surface. In the middle there is a well-defined longitudinal groove, widened apically into an ovoid pit. Abdomen smooth, slightly shining, the sternites with a few scattered punctures, the fourth and fifth somewhat more closely punctured at the sides. Interocular distance across the clypeus nearly twice as great as across the vertex, where it is equal to the length of the first four joints of the flagellum or nearly so. Flagellum fairly thick, the second joint as long as the third, plus half the fourth. Posterior ocelli nearer to each other than they are to the eyes. Dorsum of epinotum as long as the scutellum. First tergite as long as wide at the apex. Pygidial area as long as wide at the base, the apex rounded. Spines on the legs blackish, the basal joint of the anterior tarsi with seven spines.



Fig. 4 c. *P. Loefflingi* Dahlb. Dorsum of epinotum.

♂. 10–13 mm. long. Colour as in the ♀, but the yellow spot on the temples larger, and the interantennal spot generally sharply tridentate; the black on the first tergite more extensive. The upper face less rugulose and more strongly punctate than in the ♀. The puncturation of the head and thorax is distinctly larger and deeper than in the ♀. The first and second tergites dull, the first shallowly and sparsely punctured. The triangular area on the dorsum of the epinotum is dull, microscopically rugose or coriaceous, and therefore only feebly defined. Apical sternite angularly emarginate at the apex, more deeply so than in the majority of the other species. Moustache black. Cheeks as long as the second joint of the flagellum. Interocular distance on the vertex equal to the length of the second to sixth joints of the flagellum. The second joint of the latter is as long as the third plus one-half of the fourth. Posterior ocelli a little nearer together than in the ♀. Otherwise like the ♀. The wings in some specimens of the ♂ are fusco-hyaline, darkest at the base; the abdomen may also be more or less infuscated on the posterior half in both sexes.

A species distributed over the whole Ethiopian region as far south as Natal. I have seen specimens from the following localities: Nigeria, Uganda, Nyasaland, N.E. Rhodesia, Salisbury, Umtali and Bulawayo, and Johannesburg. (R.M. and T.M. colls.)

*P. Loefflingi* var. *Meneliki*, n.v.

♂. 11–12 mm. long. This variety differs from the type of the species in having the triangular area of the epinotum smooth and shining as in the ♀. The puncturation on the vertex and first tergite is shallower than in the type of the species and the wings are hyaline, faintly tinged with yellow, not pale smoky.

Harar, Abyssinia. (R. E. Turner), 2 ♂♂. Brit. Mus. coll.

*P. ugandicus* Magretti (fig. 5 a, b). *Bull. Mus. Paris*, IV, p. 188, ♀. 1908.

*P. pilifrons* Cameron. *Sjöstedt's Kilimandjaro-Meru Exped.* 8, p. 271, ♂. 1910; Turner, *Ann. Mag. N.H.* II, no. 12, p. 463, ♀, ♂. 1918.

♀. 14–18 mm. long. Very much like *triangulum* var. *diadema* but with a distinct triangular area on the epinotum, a wider face and a longer first abdominal segment.

Colour of head, thorax and legs as in *triangulum-diadema*, but with the last two joints of the flagellum ferruginous. Abdomen yellow, the black on the middle and base of the first tergite variable in extent, sometimes reaching the apical margin in the middle, leaving only a triangular patch of yellow on each side; fourth and fifth tergites black at the base. This coloration is that of a specimen from Johannesburg in the Brit. Mus. coll. (det. R. E. Turner),

but in the type the colour of the abdomen is mainly black, with the lighter colour disposed in narrow bands and spots on the third, fourth, fifth and apical segments. Without doubt the colour is very variable, the yellow merging into yellowish red or testaceous red in some cases. The sculpture of the head and pro-mesothorax is like that of *triangulum-diadema*, but the puncturation of the mesonotum is a shade larger and deeper. The dorsum of the epinotum has a large triangular area which is sharply delimited from the rest of the segment by its smooth, shining and sparsely punctured surface. The median groove is wide and shallow, ending in a deeper pit posteriorly. The first segment of the abdomen is only slightly wider at the apical margin than long, whereas in *triangulum* it is nearly twice as wide as long. The abdomen is slightly shining and punctured like that of *triangulum*. The interocular distance across the clypeus is almost twice as great as across the vertex, where it is equal to the length of the first four joints of the flagellum, plus half of the fifth. The posterior ocelli are separated from the eyes by a distance half as great again as the distance between the ocelli themselves. Second joint of the flagellum a little more slender than in *triangulum-diadema*. Venation and colour of the wings like that of *triangulum*, to which this form is so closely allied that it should probably be placed with it as a subspecies.

♂. 13 mm. long. The specimen before me, from the Brit. Mus. coll., is very similar to the ♂ of *diadema* in colour and sculpture. The scutellum is entirely black, but the postscutellum has a narrow band of yellow near the base. The first tergite is black, with a small round yellow spot on each side, and the basal half or more of the fourth and fifth segments is also black. The basal half of the anterior femora, and the basal two-thirds or more of the middle and hind femora are black, the rest of the legs pale ferruginous. The face has an outstanding pilosity much longer than in *diadema*. The distance between the posterior ocelli is only very slightly less than the distance between them and the eyes. The shape of the clypeus differs hardly at all from that of *diadema*, but there are two minute black teeth on the anterior margin. The second joint of the flagellum is more slender than in *diadema* and also a little longer, being a little longer than the third and fourth united. The triangular area of the epinotum is less distinct than in the ♀, owing to the inner half being punctured almost as closely as the surface outside the area. The first abdominal segment, as in the ♀, is longer than in *diadema*, and is shallowly and finely punctured. The rest of the abdomen is smooth and impunctate except the last two tergites which are finely punctured. Cheeks black, the back of the head with the red colour less extensive than in *triangulum-diadema*.

Naivasha (type); East Africa from Harar to Transvaal (teste R. E. Turner).

*P. ugandicus* var. *xanthogaster* Cameron (as species). *Sjöstedt's Kilimandjaro-Meru Exped.* 8, p. 269. 1910.

♂. 15 mm. long. Head black, the clypeus and lower face with the same colour and pattern as in *triangulum-diadema* ♂, the back of the head behind the eyes more or less reddish. Thorax black; a yellow band on the postscutellum, and two elongate spots of yellow on the sides of the epinotum. These yellow spots encroach on the declivity, and extend upwards a little way over the sides of the ill-defined triangular area of the dorsum. Abdomen yellow, the extreme base of the second to fourth tergites black, the first tergite

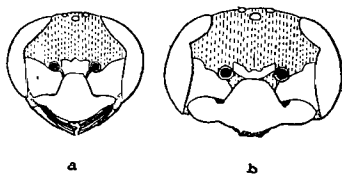


Fig. 5. *Philanthus ugandicus* Magretti. a, head of ♂; b, head of ♀.

black at the base, the black extending forwards in the middle as a wedge-shaped mark. The apical margins of the segments narrowly testaceous. Legs ferruginous, the anterior tibiae at the base and a longitudinal streak on the outer side of the middle and hind tibiae, yellow. Hind femora black on the inside. Wings in colour and venation like those of *diadema*, as is also the pilosity. Sculpture like that of *ugandicus* ♂, but the first tergite is more sparsely punctured. The triangular area of the epinotum is indistinct, owing to the puncturation invading the whole of its surface, so that it is as dull as the rest of the segment. Otherwise like the type of the species.

Apart from the yellow marks on the epinotum, which are probably very variable in extent, this form differs from *ugandicus* s.str. mainly in the extension of the puncturation over the whole of the triangular area of the epinotum. British East Africa.

\**P. natalensis* Brauns, n.sp. (*nom. in litt.*).

♀. 15 mm. long. Legs ferruginous, the middle and hind tibiae with the outer sides yellow; scutellum ferruginous, pronotal collar and postscutellum with transverse bands of yellow; abdomen yellow, becoming gradually reddish yellow towards the apex. Otherwise coloured like *triangulum-diadema* ♀. The mesopleurae and sides of the epinotum are finely, closely and obliquely rugulose, not punctate as in *diadema*, and are covered with a fairly dense, whitish and decumbent pilosity. Otherwise in sculpture and pilosity it is like *diadema*, excepting the epinotum. The dorsum of the latter has a triangular area which is clearly defined from the rest of the segment by its smooth and shining surface, which is punctured only at its extreme base and on the indistinct median groove. The epinotum is a little longer than in *diadema*, and the first tergite is also longer and narrower, in which it resembles *ugandicus* ♀. The shape of the clypeus is precisely like that of *ugandicus*. The first five joints of the antennae below and the last two joints are ferruginous. Pygidial area, tarsal comb and spines on the legs as in *diadema*.

Durban, July. Type in coll. Brauns.

\**P. oraniensis* Brauns, n.sp. (fig. 6 a, b) (*nom. in litt.*).

♀. 14.5 mm. long. Apical third of the mandibles blackish, the basal third, the clypeus, lower face as far as the emargination of the eyes, a trapezoidal macula between the antennal sockets, the scapes and first three joints of the flagellum, and a lanceolate spot on the temples, pale lemon yellow. The rest of the head black. Thorax black, with the pronotal collar, tegulae, a small spot on the pronotal tubercles, a triangular spot just behind the tubercles, the postscutellum, and a large patch on the sides of the epinotum, pale lemon yellow. Scutellum ferruginous. First tergite lemon yellow, black at the base and narrowly so behind the ferruginous and depressed apical margin, the two transverse black areas being connected in the middle by a wide longitudinal black bar; second tergite lemon yellow, narrowly black at the base, with a wide median black bar which reaches the testaceous apical margin; third to fifth tergites lemon yellow, with a transverse band of black at the base which is widened triangularly in the middle but does not reach the testaceous apical margin; sixth tergite pale yellow at the base, blackish apically, the black colour merging into ferruginous at its borders. Sternites reddish yellow, the fourth and fifth paler at the base. Anterior coxae black, the anterior trochanters, middle and hind coxae and

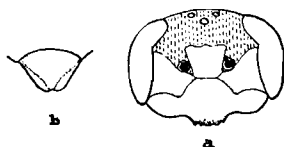


Fig. 6. *Philanthus oraniensis* Brauns.  
a, head of ♀; b, pygidium ♀.



trochanters black above and ferruginous below. Legs pale yellow, except the anterior and middle femora above and the basal four-fifths of the posterior femora, which are pale reddish. Third to sixth and the apical joints of the flagellum reddish underneath. Wings hyaline, slightly tinged with yellow, the extreme apex of the forewing pale fuscous, the veins and stigma ochreous. Pilosity yellowish white.

Clypeus and lower face slightly glossy, finely punctured, the former sparsely so, the latter fairly closely. Upper face dull, very closely striato-punctate longitudinally; vertex shining, sparsely punctured with large and small punctures intermixed, temples finely and fairly closely punctured and moderately shining. Collar of pronotum shining, finely and sparsely punctured, the neck and sides of the pronotum dull and finely striate. Mesonotum fairly shining, finely and closely punctured at the anterior and posterior margins, elsewhere irregularly and more coarsely punctured; scutellum and post-scutellum shining, very sparsely finely punctured. Mesopleurae dull, closely and finely punctured. Metapleurae and sides of the epinotum with a slight gloss, finely and indistinctly punctured. Declivity and dorsum, outside the triangular area, closely and finely punctured; the triangular area polished and impunctate, sharply delimited from the rest of the segment. Abdomen shining and smooth, the first five tergites finely and sparsely punctured except at the sides where the puncturation is closer and larger. Pygidial area much broader than in most of the species of the genus, one-third wider at the base than long.

Interocular distance across the clypeus a little more than half as great again as across the vertex, at which point it is equal to the length of the first five joints of the flagellum. Median area of the clypeus shorter than in *triangulum*, the anterior margin with a short lobe in the middle and a tooth on each side of the same. Posterior ocelli very slightly nearer to each other than they are to the eyes. Head wide, fully half as wide again as the thorax at its widest. Collar of pronotum very short, almost trenchant above. Dorsum of epinotum as long as the scutellum. First tergite, seen direct from above, as long as wide across the apex, the second tergite one-third wider at its apex than the first tergite. Spines on the legs pale yellowish red, the tarsal comb composed of fairly long spines, of which there are six on the basal joint. Cubitus of hind wing interstitial with the transverse median vein.

Bloemfontein, 1 ♀. Type in coll. Brauns.

*P. impatiens* Kohl (fig. 7 a, b). *Ann. K.K.N.H. Mus. Wien*, VI, p. 359, ♀ 1891.

♀. 9-12 mm. long. Black, the following parts pale yellowish or ivory white: basal half of the mandibles, clypeus, lower face, a bi- or tri-dentate patch between the antennal sockets, pronotal collar, a spot on the tegulae,

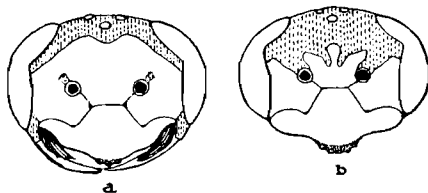


Fig. 7. *Philanthus impatiens* Kohl. a, head of ♂; b, head of ♀.

a small spot below them on the mesopleurae, and the postscutellum. The temples have a diffuse ferruginous streak between the occipital and ocular margins. Abdomen black, with the following parts pale yellowish or ivory

white; an ovoid macula narrowed inwardly and not meeting its fellow in the middle, on each side of the first tergite; the whole of the second tergite excepting a wide median longitudinal bar which does not reach the apical margin, a small spot on each side of the latter and the extreme basal and apical margins which are black; apical bands on the third to fifth tergites widened laterally. The sixth tergite is black at the extreme base, beyond that ivory white with the last fourth ferruginous. Sternites 1-5 black or reddish black, with a large yellowish white patch on each side of the second and third, and apical bands widened laterally on the fourth and fifth. Sixth sternite dark ferruginous. Scapes yellowish white, flagellum blackish above and reddish yellow below. Coxae and trochanters black, the middle trochanters reddish below, the rest of the legs ferruginous, with the middle and hind tibiae yellowish white outwardly. Tegulae ferruginous, stigma and costa ochreous, the other veins pale brown, the wings hyaline and slightly infuscated at the apex. Pilosity whitish, fairly long but nowhere dense. Clypeus, lower face and scapes moderately shining, the clypeus very sparsely and finely, the lower face more closely punctured. Upper face dull, closely, finely and longitudinally striato-punctate. Vertex and temples shining, sparsely and strongly punctured. Collar of pronotum smooth and shining, the sides of pronotum finely striate. Mesonotum and scutellum shining, coarsely, irregularly and sparsely punctured, as in *P. Turneri*. Postscutellum shining, very shallowly and sparsely punctured. Dorsum of epinotum smooth and shining almost all over, owing to the triangular area covering the dorsum except for a narrow lateral margin; the area is sharply delimited from the sides and declivity which are closely and strongly punctured above but sparsely so below. The median longitudinal groove on the dorsum is transversely striated and fairly deep. Abdomen shining, the first and second tergites fairly strongly and closely punctured at the sides, sparsely so in the middle, and impunctate at the base. The puncturation is much less close and coarser than in *Turneri*. The third to fifth tergites are more plentifully, but less coarsely punctured than in *Turneri*, but the punctures are nevertheless fairly large. Sixth tergite smooth and moderately shining at the base, the apical half duller and microscopically coriaceous. Sternites shining, the second to fifth very sparsely punctured, the sixth smooth or finely rugulose.

Clypeus very much like that of *Turneri*, but the median area is more convex and narrower across the apical margin. The interocular distance across the clypeus is not quite one and a half times greater than the distance across the vertex, at which point it is equal to the length of the first five joints of the flagellum (to the first six, according to Kohl). The second joint of the flagellum is half as long again as the third. The posterior ocelli are slightly nearer to each other than they are to the eyes. Dorsum of epinotum as long as the scutellum and metanotum united. Spines on the legs ochreous, the basal joint of the anterior tarsus with six spines. The cubitus of the hindwing is interstitial with the transverse median vein.

♂ (hitherto undescribed). 11 mm. long. Base of the mandibles, clypeus, scapes, first two joints of the flagellum underneath, and the face from the clypeus to a point below the anterior ocellus, lemon yellow. The sides of the face from a point a little below the emargination of the eyes, the vertex and temples black; a streak of ochreous yellow, narrowed below, on the upper half of the temples. Thorax and legs coloured as in the ♀, but all the tibiae and the first two joints of the tarsi are pale yellowish, and the posterior femora are piceous behind. First, third and fourth tergites coloured as in the ♀, the second entirely pale yellowish white except the extreme base and apex, the fifth and sixth also pale yellowish white but the fifth is also more or less

blackish at the base, and the seventh is pale yellowish white basally, testaceous apically. Sternites as in the ♀. Sculpture like that of the ♀, but the first tergite is more closely punctured and duller, and the remaining tergites a little more shallowly punctured and fairly dull, owing to a microscopic rugulose sculpture.

Interocular distance across the clypeus two-thirds greater than across the vertex, at which point it is equal to a little more than the length of the first six joints of the flagellum. The second joint of the latter is slightly longer than the following two joints united. Otherwise like the ♀.

De la Rey and Lichtenburg, Transvaal, January (H. Brauns); Aliwal North, December (R. E. Turner).

*P. Turneri* n.sp. (fig. 8 *a*, *b*).

♀. 11–12.5 mm. long. Black, the following parts pale cream-coloured: clypeus, lower face, a spot between the antennal sockets sometimes broken up into three spots, a streak broken in the middle on the pronotal collar, a spot on the tegulae, a streak on the postscutellum which is sometimes reduced to two small spots, a fairly large oblique patch on each side of the second tergite, apical bands on the third to fifth tergites. These apical bands are sinuous medially, interrupted in the middle and widened laterally; that of the fourth tergite is sometimes broken up into four discrete spots, and of the fifth to three spots, or the fifth may be entirely black. Coxae, trochanters and hind

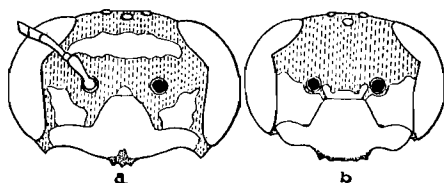


Fig. 8. *Philanthus Turneri* Arnold. *a*, head of ♂; *b*, head of ♀.

[Note. Fig. *a* is a little more magnified than fig. *b*.]

femora black, the fore and middle femora black basally and more or less ferruginous apically, the tibiae and tarsi ferruginous. Middle of the temples with a dark ferruginous spot which does not reach the margin of the eyes. Mandibles cream-coloured, becoming darker towards the apex which is black. Flagellum reddish ochreous below, black above, the scapes black and often with a cream-coloured spot below near the apex. Wings flavo-fusco-hyaline, the costa and stigma reddish yellow, the veins black. Pilosity grey, fairly long but nowhere dense. First tergite sparsely pilose; behind the apical margin it has a clathrate groove which is not easily seen as it is covered with a very fine whitish pubescence (cf. fig. 10). The groove, which extends right across the tergite, is not straight, being curved forwards in the middle.

Clypeus shining, sparsely punctured, the lower face shining, more finely and more closely punctured than the clypeus. Upper face dull, closely punctured, with indications here and there of a longitudinal striation. Vertex and temples shining, sparsely and coarsely punctured. Pronotal collar shining, its vertical face finely and sparsely punctured, the sides of the pronotum dull and closely striate. Mesonotum and scutellum shining, very coarsely and distantly punctured, the mesonotum a little more closely punctured near the anterior and posterior margins. Metanotum shining, with a few large punctures. Mesopleurae closely and strongly punctured, the sides of the epinotum and the declivity below shining, sparsely punctured; the sides anteriorly, like the metapleurae, obliquely striolate. The upper part of the declivity, and the

dorsum outside the triangular area, are dull and closely, strongly punctured. The triangular area is smooth and shining, sharply delimited from the rest of the segment, the median longitudinal groove deep and transversely striated.

First tergite shining, sparsely and strongly punctured at the base, the shining area extending angularly almost to the apical margin, the rest of the tergite dull, finely and closely punctured. The remaining segments shining, the second tergite strongly but not very closely punctured, the third to fifth sparsely punctured in the middle, more closely at the sides, the sixth tergite smooth; the sternites sparsely punctured, the punctures becoming gradually smaller and more abundant towards the apex of the abdomen.

Median area of the clypeus with the anterior margin produced into a short bisinuate lobe, on each side of which is a small tooth. Vertex wide, the interocular distance across the clypeus being only half as great again as across the vertex, where it is equal to the length of the first five joints of the flagellum. The second joint of the latter is half as long again as the third. The distance between the posterior ocelli is very nearly equal to their distance from the eyes. Pronotal collar linear in the middle, thicker at the sides. Dorsum of epinotum as long in the middle as the scutellum and postscutellum united. Abdomen fairly strongly depressed between the first and second tergites. Pygidium as long as wide at the base. Spines on the legs ferruginous, the tarsal comb long and composed of flattened spines, of which there are six on the basal joint. The cubitus of the hindwing is interstitial with the transverse median vein.

♂. 11–13 mm. long. Colour as in the ♀, but the face above the antennae has a transverse bar of cream-white, widest in the middle, and the pale areas of the lower face are narrower, being separated from the clypeus by fairly wide black spaces. The anterior margin of the median area of the clypeus has three distinct teeth, and is black, the black colour extending backwards in the middle as a short triangular, or sometimes quadrate spot. The pale bands on the third to fifth tergites are very much reduced, being widely interrupted in the middle, especially on the fifth tergite. Antennae black; mandibles dirty ochreous at the base. Anterior femora ferruginous, the middle and hind femora more or less ferruginous in front, and black behind; tibiae ferruginous inwardly, cream-white outwardly; the tarsi yellowish. First tergite without the apical band of pubescence which is present in the ♀. Sculpture like that of the ♀ but everywhere a little coarser, the first tergite being almost as strongly punctured at the sides as at the base, and moderately shining all over between the punctures. As in the ♀, the apical margins of the segments are piceous, depressed and impunctate. First and second sternites shining, sparsely and coarsely punctured, the remaining sternites duller, fairly closely punctured, the puncturation becoming progressively finer on each segment towards the apex. The triangular area of the epinotum is shining as in the ♀, but at the base on each side of the median groove it is finely rugose and somewhat dull. Second joint of the flagellum long, a trifle longer than the third and fourth united, not much wider at the apex than at the base. Interocular distance on the vertex nearly equal to the length of the first six joints of the flagellum. Moustache black. Cheeks as long as the third and fourth joints of the flagellum united.

Ceres, C.P., 15 ♀♀, 4 ♂♂, November (R. E. Turner). Types in Brit. Mus. coll.

\**P. Melanderi* Brauns, n.sp. (figs. 9 a, b; 10), (*nom. in litt.*).

♀. 11 mm. long. Head and thorax black; mandibles except at the apex, clypeus, lower face at the sides, and a U-shaped mark between the antennal

sockets, pale ochreous. Collar of pronotum above, tegulae in front, a small spot below them and the metanotum in the middle, pale yellowish white. First abdominal segment ferruginous, the second tergite black, suffused with ferruginous in the middle and with a large subquadrate spot of yellowish white on each side; third to sixth tergites black, with apical bands of yellowish white widened laterally on the third to fifth, the sixth with a spot of dull yellow on each side near the base. Second sternite pale ferruginous, the third black at the base and ferruginous apically, with a spot of pale yellow on each side. Fourth and fifth sternites ferruginous, diffusely blackish near the apical margin, the sixth black. Coxae, trochanters and posterior femora excepting their apices, black. Tibiae and tarsi ferruginous, the tibiae pale yellow outwardly. Antennae black above, reddish ochreous below, the scapes lemon yellow below. Wings pale fusco-hyaline, the stigma ochreous, the veins brown. Pilosity white, short and very scanty on the head and thorax, absent from the abdomen except on its apical half below. First tergite with a preapical groove similar to that in *P. Turneri*, and covered with a very fine and dense whitish pubescence.

Clypeus shining, sparsely and finely punctured. Lower face slightly shining, closely and finely punctured. Upper face dull, finely and closely striato-punctate. Vertex and temples shining, coarsely, irregularly and sparsely punctured. Collar of pronotum shining, almost impunctate. Mesonotum shining, sparsely punctured with large and deep punctures, which are grouped distantly in twos and threes on the disc. Scutellum and postscutellum shining, finely, shallowly and very sparsely punctured. Mesopleurae shining, sparsely and coarsely punctured. Dorsum of epinotum polished and impunctate, with a narrow and almost smooth median groove, the sides and declivity above closely punctured, the sides in front and the declivity below fairly smooth and a little shining. First tergite smooth and shining on the declivous base, dull and fairly closely punctured elsewhere; the remaining tergites shining, very sparsely punctured in the middle, a little more closely at the sides, the punctures on the second and third larger than on the others. Sternites shining, shallowly and very sparsely punctured. Face moderately swollen between the antennae, the swollen part with a short longitudinal groove in the middle. Interocular distance across the clypeus half as great again as across the vertex, where it is equal to the length of the first four joints of the flagellum, plus half of the fifth joint. Posterior ocelli a little nearer to the eyes than they are to each other. Second joint of the flagellum as long as wide at the apex, a little shorter than the third and fourth united. Dorsum of epinotum as long as the scutellum and postscutellum united, fairly narrowed and rounded posteriorly. First tergite slightly longer than it is wide at the apex, two-thirds longer than the second, which is distinctly depressed and constricted from the first at the base. Spines on the legs pale yellow, the basal joint of the anterior tarsus with six flattened spines.

♂. 10 mm. long. Antennae black, the scapes with a spot of yellow near the apex. Clypeus, lower face and half of the upper face pale chrome yellow, excepting a band of black

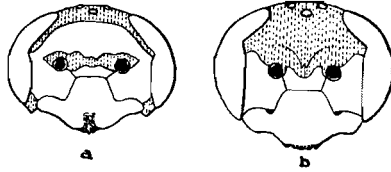


Fig. 9. *Philanthus Melanderi* Brauns.  
a, head of ♂; b, head of ♀.



Fig. 10. *Philanthus Melanderi* Brauns, ♀.  
Epinotum and abdomen.

between the antennal sockets which is sometimes broken up into two spots. Temples with a pale yellow spot. Collar of pronotum in its upper third entirely pale yellow. Tibiae and tarsi pale yellowish white, the inner side of the tibiae sometimes darker or ochreous to ferruginous. First tergite ferruginous as in the ♀, black only at the base and apex. The yellow bands on the other tergites as in the ♀, but sometimes that of the third is much larger, covering the greater part of the tergite except the apical margin and the base at the sides. The first tergite is more sparsely and more coarsely punctured than in the ♀ and somewhat shining. The sculpture on the rest of the body is a little finer than in the ♀. Second joint of the flagellum as long as the third and fourth united. Moustache black. Anterior margin of the clypeus feebly bisinuate in the middle, hardly tridentate.

Willowmore, C.P. (Brauns). Type in coll. Brauns.

*P. tenellus* n.sp. (fig. 11).

♂. 9-10.5 mm. long. Black, the following parts pale yellowish white: clypeus, lower face at the sides as far as the emargination of the eyes, a rhomboidal spot between the antennal sockets which is usually tridentate above, a lanceolate spot on the middle of the temples adjacent to the margin of the eyes, the pronotal collar above, the tegulae, occasionally the pronotal tubercles, the metanotum excepting its sides, a small spot (often absent) on each side of the first tergite, a large oblique mark on each side of the second tergite extending from the apical margin to about the posterior third of the segment and widely separated from each other in the middle, narrow preapical bands on the third to fifth tergites and on the second to fifth sternites, on the sternites often interrupted in the middle or broken up into spots. The sixth and seventh tergites are ferruginous, but the sixth is also sometimes black basally. Tibiae, tarsi and anterior femora on the upper sides near the apex pale yellowish white, the femora black above and reddish below, fairly frequently reddish all over. Anterior and middle coxae yellowish white below, black behind, the trochanters black above and ferruginous below. Antennae black, the scapes and first joint of the flagellum yellowish white below, the second to fourth joints underneath and the apical half of the last joint, reddish ochreous. Mandibles dirty yellow, the apex piceous. Moustache dark brown. Pilosity white, not dense.

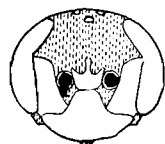


Fig. 11. *Philanthus tenellus* Arnold, ♂.

Clypeus and lower face moderately shining, the former sparsely, the latter fairly closely and finely punctured. Upper face as far as the anterior ocellus dull, closely and longitudinally striato-punctate. Vertex coarsely, but not very closely punctured, shining; the temples more shallowly punctured than the vertex. Pronotal collar moderately punctured on its vertical face, the sides of the pronotum finely punctured. Mesonotum and scutellum shining, fairly strongly punctured, the former less closely in the middle than elsewhere, the punctures in the middle being separated by spaces two or three times the average diameter of a puncture. Mesopleurae dull, closely punctured and more finely so than the mesonotum. Metanotum sparsely and finely punctured. Dorsum of epinotum polished and shining, impunctate, sharply delimited from the sides and declivity which are closely punctured. The triangular area has a median longitudinal groove, narrow at the base, considerably widened apically, transversely rugose. Dorsal surface of abdomen with a greasy lustre, due to a very fine or almost microscopic reticulate-rugulose sculpture; the fifth and sixth tergites are more shining and have a preapical row of punctures, the seventh is shining, sharply and sparingly punctured. Sternites shining,

finely punctured, the second to fifth sparsely, the last two fairly closely. Extreme anterior margin of the clypeus black and with three small teeth in the middle. Interocular distance across the clypeus one-third greater than across the vertex, at which point it is equal to a little more than the length of the first five joints of the flagellum. Second joint of the flagellum twice as long as the third. Posterior ocelli as far from the eyes as they are from each other. Collar of pronotum short, almost linear in the middle. Dorsum of epinotum nearly as long in the middle as the scutellum and metanotum united. Abdomen slender, the first segment one-fourth longer than wide at the apex, and one-third longer than the second segment. Basal joint of the anterior tarsus with five spines, all the spines on the legs pale yellowish white. Wings hyaline, iridescent, the veins and stigma dark brown.

Bulawayo, September; numerous ♂♂ on the flowers of a *Combretum*. Type in the R.M. coll. (R.M. and T.M. colls.)

\**P. namaqua* Brauns, n.sp. (fig. 12 a, b), (*nom. in litt.*).

♀. 9.5 mm. long. Mandibles dirty yellow, the apices piceous; clypeus and lower face creamy white, the space between the antennal sockets with only a very small spot of the same colour, the rest of the head black. Thorax, first, fifth and sixth tergites black, the first sternite reddish black, the second to fourth tergites and the other sternites ferruginous, the fourth tergite blackish at the base and apex, the lateral lanceolate and dull marks on the second sternite black. Scape and first joint of the flagellum piceous, the rest of the antenna brownish, somewhat paler below. Legs ferruginous, the coxae and trochanters black. Wings pale fusco-flavo-hyaline, the veins brown, the stigma ochreous. Pilosity greyish, short and very sparse, a little more abundant on the upper face and sides of the epinotum than elsewhere. Clypeus shining, the median area finely and sparingly punctured, the lateral sclerites almost impunctate; the yellow area of the lower face duller than the clypeus, finely and closely punctured. Upper part of the face dull, finely longitudinally rugulose and punctulate between the rugae. Vertex and temples shining, sparsely sprinkled with fairly large punctures. Pronotum shining, sparsely punctulate, the sides obliquely striolate. Mesonotum and scutellum shining, with a few large punctures; the posterior margin of the mesonotum is, however, a little more closely punctured than the rest of the segment. Mesopleurae dull, fairly closely and strongly punctured. Metanotum shining and impunctate. Triangular area of the epinotum polished and impunctate, sharply delimited thereby from the rest of the segment, the sides of which are finely punctured, fairly closely so above, more sparingly below and slightly shining. The declivity is dull, finely and closely punctured. First tergite dull, finely and closely punctured except on the declivous base which has a few large punctures and is shining. Behind the apical margin there is a narrow, dull and coriaceous depression, densely pubescent, and similar to that of *P. Turneri*. The rest of the abdomen is shining. Second to fifth tergites are sharply punctured, sparsely so in the middle, more abundantly at the sides and just behind the apical margin. The pygidial area is impunctate, wide and not much narrowed towards the rounded apex, as wide at the base as long. The sternites have a scattered and shallow puncturation. Median area of the clypeus about as long as wide, its anterior margin straight, with a small tooth on each side. The interocular distance across the clypeus is only one-half longer than across

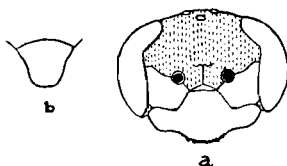


Fig. 12. *Philanthus namaqua* Brauns, ♀.  
a, head; b, pygidium.

the vertex, where it is equal to the length of the first five joints of the flagellum; the second joint of the latter is nearly twice as long as the third. The distance between the posterior ocelli is equal to their distance from the eyes. Pronotal collar short, linear and trenchant above. Dorsum of epinotum as long as the scutellum and metanotum united, its triangular area with a deep longitudinal and transversely striated groove. Abdomen deeply impressed between the first and second segments. Spines on the legs ferruginous, the comb of the anterior tarsi with six spines on the basal joint. Cubitus of the hindwing interstitial with the transverse median vein.

Port Nolloth (L. Peringuey). Type in coll. Brauns.

*P. laticeps* n.sp. (fig. 13).

♀. 14 mm. long. Head and thorax black, excepting the following parts which are pale chrome yellow: base of the mandibles on the outer side, clypeus, lower half of the face as far as the antennal sockets, collar of pronotum, a spot on the tegulae, the scutellum and the metanotum. Legs piceous, the anterior femora and tibiae in front, and the middle tibiae on the outer side, dirty yellow. Abdomen ochreous yellow, the pygidial area yellowish red, the second to fifth segments irregularly stained with fuscous, chiefly at the sides and base. Wings fuscous, the stigma and veins blackish. Upper face and vertex with a very short, black and erect pubescence. Temples and thorax with a greyish pilosity. Clypeus and yellow area of the face almost impunctate, smooth and shining. Upper part of the face dull, closely and finely punctured and also somewhat longitudinally rugulose in addition; a narrow area bordering the inner margin of the eyes from the emargination upwards is depressed, smooth and shining. Vertex smooth, nitidulous, coarsely and sparsely punctured; the temples and occiput moderately shining, shallowly and fairly closely punctured. Pronotum dull, finely and transversely rugulose, its collar smooth and shining. Mesonotum dull, closely and finely punctured, the scutellum and postscutellum impunctate, smooth and shining. Mesopleurae strongly rugoso-punctate. Metapleurae and sides of the epinotum finely rugulose, the declivity closely and finely punctured. The triangular area of the epinotum is distinctly defined apically, less clearly at the sides, and is finely and closely punctured like the rest of the dorsum, except in the middle where it is shining and impunctate. The median groove shallow at the base. Sternites and the third to fifth tergites shining, the tergites punctured only at the sides, the pygidial area shallowly striato-punctate. Head wide, three-quarters wider than the thorax at its widest, twice as wide across the clypeus as across the vertex, where its width is equal to the length of the first four joints of the flagellum. Anterior margin of the clypeus deeply bisinuate, owing to the marked projection of the median area, which is also very convex lengthwise; viewed from the side, this convexity is seen to be due to the anterior half being somewhat abruptly depressed from the posterior. The median area has a black impressed line a little behind the anterior margin, and is as long as wide; the lateral sclerites are short, or twice as wide as long. Posterior ocelli nearly twice as far from the eyes as they are from each other. Collar of pronotum thick, twice as long as the first joint of the flagellum, the vertical face short. Dorsum of epinotum very oblique and short, not quite as long as the scutellum. Spines on the legs blackish, the comb of the anterior tarsi composed of short spines (not flattened), of which there are eight on the basal joint. Abdomen with a sparse yellowish pilosity on the ventral surface.



Fig. 13. *Philanthus laticeps* Arnold, ♀.



The cubitus of the hindwing arises a little beyond the end of the submedial cell.

Lafia, N. Nigeria, January (J. J. Simpson), 1 specimen. Type in Brit. Mus. coll.

\**P. dichrous* Kohl. *Ann. K.K.N.H. Mus. Wien*, ix, p. 289, ♀. 1894.

This form appears to me to be only a variety, or at the most a subspecies, of *dolosus* Kohl. The latter bears the dominant livery of the group, *i.e.* black thorax with yellow maculae and a yellow abdomen. It is, however, unfortunate that the description of *dichrous* appears on a page preceding that of *dolosus*, so that according to the rules of nomenclature of the International Zoological Congress *dichrous* takes priority, and *dolosus* must be relegated to subspecific rank. As the latter, in the matter of colour, is more typical of the species-group, it has been described in greater detail, so that it is only necessary to indicate here in what way the type of the species differs from the race.

♀. 10-13 mm. long (teste Kohl, the type in coll. Brauns measures 11 mm. long). Colour of the head, thorax and legs like that of *dolosus* (type specimen), but with no yellow marks on the thorax except a small spot on the tegulae; abdomen dull red, the middle segments somewhat darker. Temples, vertex and occiput more closely and more finely punctured than in the race, and duller; the scutellum and postscutellum are also more finely punctured. The median groove on the dorsum of the epinotum is transversely striated and more distinct, but this character is decidedly variable in the several examples of *dolosus* which I have seen. The pygidium, especially outside the striated area, is more shining. The cubitus of the hindwing arises a little farther away from the end of the submedial cell. Otherwise no other differences are apparent, the proportions of the head and the shape of the clypeus being also precisely the same.

Batta, West Africa; Edijan, Ashanti (J. J. Simpson); Stanleyville, B. Congo (J. Bequaert). Type (Batta) in coll. Brauns; (Edijan) in Brit. Mus. coll.

\**P. dichrous*, race *dolosus* Kohl (fig. 14 a, b) (as species). *Ann. K.K.N.H. Mus. Wien*, ix, p. 290, ♀. 1894.

♀ 12 mm. long. Head and thorax black, with the exception of the following parts, which are lemon yellow: base of the mandibles, clypeus, the lower face as far as the level of the posterior margin of the clypeus, a spot between the antennal sockets, a small spot on each side of the collar of the pronotum (probably variable in extent), the tegulae in front and a small spot on the pleurae below them. Antennae and legs black, a streak on the anterior femora and tibiae and on the middle tibiae in front, lemon yellow; a small spot on the apex of the middle femora also of that colour. Abdomen yellow, the first to fourth sternites stained irregularly with blackish colour, the pygidium reddish yellow. Wings pale fuscous, without any bluish lustre. Pilosity on the head, thorax and abdomen yellowish white and fairly sparse. Clypeus and the yellow area of the face smooth, slightly shining, finely and very sparsely punctured. A narrow margin bordering the eyes, from the sinus to the vertex, is smooth and shining; the rest of the face, as far as the posterior ocelli, is closely and finely longitudinally striate. Vertex, occiput and temples shining, irregularly punctured, the punctures deepest and largest on the vertex, shallow on the temples. Collar of pronotum transversely rugulose on the vertical face, shallowly punctured on the dorsal, the sides of the neck dull



Fig. 14. *Philanthus dichrous*, race *dolosus* Kohl, ♀. a, head; b, pygidium.

and aciculate. Mesonotum strongly punctured, at the sides and in front closely reticulate-punctate. Scutellum and metanotum sparsely punctured in the middle, closely and more finely at the sides and behind. Dorsum of the epinotum and upper part of its declivity closely punctured and dull, almost reticulate-punctate, the declivity fairly smooth below; the sides of the epinotum have a fine, or almost obliterated, striation, and the median longitudinal groove on the dorsum is shallow and impunctate. Abdomen nitidulous, smooth, sparsely punctured below, the apical sternite dull, the pygidial area longitudinally striolate at the base, the striae not reaching the apex, feebly marginate on the basal half of the sides, its apex fairly widely truncate.

Anterior margin of the median area of the clypeus black, furnished with a small tooth on each side. Interocular distance across the clypeus almost twice as great as across the vertex, where it is equal to the length of the first four joints of the flagellum. Posterior ocelli slightly nearer to each other than they are to the eyes. Face somewhat excavated just above the antennal sockets. Temples at their widest point almost as wide as the eyes. Collar of pronotum rounded at the sides. Anterior third of the mesonotum with a narrow and shallow median groove, the middle longitudinal third of the segment slightly raised. Dorsum of epinotum not longer than the scutellum, twice as wide at the apex as long in the middle, the triangular area defined by a very fine line on each side. Spines on the legs black, the comb of the anterior tarsi composed of short spines.

Mussuca, W. Africa, July. Type in coll. Brauns.

Kohl refers to this form a specimen from the Congo which has a yellow streak on the pronotal collar and an entirely yellow scutellum and post-scutellum, at the same time suggesting that the colour is probably very variable. The examination of seven ♀♀ in the Brit. Mus. collection (derived from the Gold Coast, Togo, Gambia and N. Nigeria) fully confirms this view. They all have the yellow streak on the collar, and the yellow scutellum and post-scutellum; the yellow spots on the tegulae and pleurae are larger than in the type, but otherwise they are indistinguishable from it.

*P. dichrous*, race *dolosus*, var. *abyssinicus* v. nov.

This form is based on a specimen in the Brit. Mus. collection labelled *dolosus* (det. R. E. Turner?).

♀. 12 mm. long. This variety differs from *dolosus* as follows:—Pilosity of upper face, temples and thorax blackish. Sculpture of the face finer, the striation distinct only on top, merging below into elongate punctures. Punctuation of the mesonotum and scutellum more widely spaced and relatively coarser. Dorsum of the epinotum longer and also narrower apically, less than twice as wide there as long in the middle; the triangular area is distinctly delimited by its much finer and shallower puncturation and by the shining spaces between the punctures, at the base it is almost impunctate. The interocular distance across the clypeus is fully twice as great as across the vertex, and the posterior ocelli are as far from each other as they are from the eyes. The vertex is longer than in *dolosus*, and the temples somewhat wider. The first tergite is narrower towards the base, subtriangular viewed from above, whereas in *dolosus* it is more cupuliform and more abruptly declivous in front. The colour is essentially the same, but the collar of the pronotum is entirely black; the first tergite black over the basal half, the second to fourth tergites irregularly clouded with blackish.

Harar, Abyssinia (R. E. Turner); B.M. no. 1911-216. Type in Brit. Mus. coll.

*P. stygius* Gerst. (fig. 15). *Monatsb. Akad. Wissenschaften Berlin*, p. 509, ♂. 1857.

♂. 9.5–11 mm. long. Head and thorax black; clypeus, lower face, a spot on each side of the middle between the antennal sockets and the anterior ocellus, a small spot on the lower temples and adjacent to the eyes, the pronotal collar above, the tegulae, scutellum and postscutellum in the middle, pale yellow or yellowish white. Abdomen ochreous to reddish yellow, the basal half of the first tergite more or less black, some of the other tergites also more or less clouded with fuscous. Legs black, the anterior tibiae and first joint of the tarsi and the middle tibiae with a narrow streak of yellow in front; the anterior and middle femora with a small spot of yellow on the upper surface near the apex. Wings fusco-hyaline, stigma and veins dark brown. Pilosity scanty, dark on the head and thorax, but whitish on the temples. Clypeus and lower face slightly shining, with a few large punctures. Upper face dull, closely punctate and also rugulose longitudinally. Vertex and temples fairly closely and strongly punctured, shining between the punctures. Pronotal collar smooth above, its anterior face closely punctured and dull.

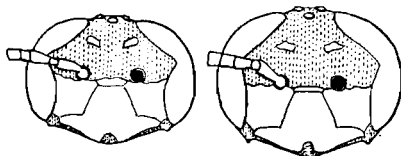


Fig. 15. *Philanthus stygius* Gerst., ♂.  
Fig. 16. *P. stygius*, race *atronitens* Arnold, ♂.

Mesonotum coarsely and closely punctured, except in the middle where the punctures are more distantly spaced, and at the anterior angles where the puncturation is fairly fine. Scutellum and postscutellum coarsely and sparsely punctured. Mesopleurae as coarsely, but not so closely punctured as the mesonotum. Epinotum dull, closely punctured or almost reticulate-punctate above, without a distinct triangular area, transversely striated in the middle at the base, the median groove wide and transversely striated, the sides and declivity above with larger punctures than on the dorsum, the sculpture below on those parts somewhat obliterated. Tergites microscopically rugulose, slightly shining, shallowly and sparsely punctured at the sides. Sternites shining, very shallowly and sparsely punctured. Interocular distance across the clypeus two and a half times greater than across the vertex, at which point it is equal to the length of the second and third joints of the flagellum. The second joint of the latter is nearly as long as the third and fourth united. Posterior ocelli slightly nearer to the eyes than they are to each other, their distance from the eyes being a little less than the diameter of one of them.

The above description is based on two specimens from the Luangwa Valley, N.E. Rhodesia, in the Brit. Mus. coll.

*P. stygius*, race *atronitens* n.r. (figs. 16, 17).

♂. 9–10 mm. long. Colour like that of the type of the species, but with darker wings. Upper face more strongly sculptured, striato-punctate. Mesonotum shining, more strongly and much more sparsely punctured than in the type of the species, most of the punctures on the posterior two-thirds of the segment being separated by spaces equal to at least five times the diameter of the largest puncture. Dorsum of epinotum



Fig. 17. *P. stygius*, race *atronitens* Arnold.  
Dorsum of epinotum.

longer, its triangular area distinctly defined by its shining surface and strong, sparse puncturation. Flagellum thicker than in the type of the species, the second joint being not longer than the third plus half of the fourth.

♀. 11 mm. long. Upper face without yellow maculae. Pronotum, scutellum and postscutellum entirely black, otherwise coloured like the ♂. Interocular distance across the clypeus nearly twice as great as across the vertex, where it is equal to slightly more than the length of the first four joints of the flagellum. The second joint of the flagellum is only very little longer than wide at the apex, and barely one-third longer than the succeeding joint. Posterior ocelli as far from the eyes as they are from each other, the distance being equal to twice their own diameter. Pygidium dull, closely, finely and longitudinally striated. Otherwise like the ♂.

Bulawayo, Sawmills and Khami Ruins, S.R., April to July, frequenting the flowers of a *Polygonum*. Types in R.M. coll. (R.M. and T.M. colls.)

*P. nigrohirtus* Turner (fig. 18 a, b). *Ann. Mag. N.H.* 11, No. 12, p. 461, ♀, ♂. 1918.

♀. 12 mm. long. Head and thorax black, with the following parts lemon yellow: base of the mandibles, clypeus, lower face up to the level of the antennal sockets, a small spot on the temples below, an oblique spot on the vertex extending inwards from the margin of the eyes, collar of the pronotum, a spot on the tegulae, a larger spot on the episternum of the mesothorax, scutellum and postscutellum. Legs black, the anterior and middle tibiae lemon yellow on the upper surface. Abdomen ochreous, the extreme base of the first tergite black, the first sternite blackish. Wings fuscous, stigma and veins black. Pilosity of the head, thorax and femora long and black, fairly dense except on the clypeus and lower face.

Clypeus and lower face shining, sparsely punctured. Upper face dull, closely and longitudinally striate, vertex and temples shining, finely, closely and shallowly punctured. Pronotum dull and transversely rugulose. Mesonotum closely and finely punctured in front, less so behind, the middle shining, sparsely punctured with large shallow punctures. Mesopleurae dull, closely punctured, the punctures shallow and elongated. Scutellum and postscutellum almost smooth. Epinotum fairly closely punctured above, less closely and very shallowly and a little shining below, without a defined triangular area, the dorsum with a wide median longitudinal groove which is transversely striated. Abdomen smooth and shining above, the sternites feebly punctured; the pygidial area longitudinally striated at the base, its lateral and apical margins smooth, about as wide at the base as long, the apex rounded.

Median area of the clypeus as long as wide, its anterior margin almost straight in the middle, with a small tooth on each side. Interocular distance across the clypeus nearly twice as great as across the vertex, at which point it is almost equal to the length of the first four joints of the flagellum. The second joint of the latter is barely one-fourth longer than the third. The distance between the posterior ocelli is almost as great as their distance from the eyes. Collar of pronotum linear in the middle, thicker and convex on each side. Dorsum of epinotum not much longer than the scutellum. Spines on the legs black, the basal joint of the anterior tarsus with seven spines. The cubitus of the hindwing arises beyond the end of the submedial cell.

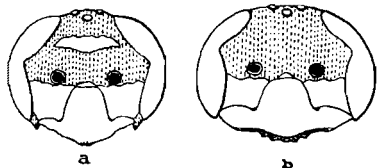


Fig. 18. *Philanthus nigrohirtus* Turner.  
a, head of ♂; b, head of ♀.

♂. 11 mm. long. Yellow markings paler than in the ♀, of a creamy white colour, except a transverse band on the face situated between the antennae and the anterior ocellus, which is lemon yellow; this band may be broken up into two spots. The vertex is immaculate. The scutellum and postscutellum and mesopleurae are sometimes entirely black. The abdomen is darker than in the ♀, pale ferruginous yellow. Otherwise coloured like the ♀.

The sculpture is decidedly stronger on the head and thorax than in the ♀, the punctures being larger, deeper, and more abundant. The dorsum of the epinotum is dull, closely and strongly punctured, the median groove wider than in the ♀. At the sides posteriorly the triangular area is faintly indicated by a raised margin. The abdomen is duller than in the ♀, the fundamental and almost microscopically rugulose sculpture being more distinct. Flagellum stout as in the ♀, the second joint nearly half as long again as the third. The moustache is black; cheeks as long as the first joint of the flagellum. Interocular distances above and below as in the ♀.

Uganda and Kenya Colony.

Of this species I have seen a ♀ from Mt Kokanjiro, Uganda, and a ♂ from the Ankole-Toro Border, east of Lake George, both from the British Museum collection.

*P. nigrohirtus*, race *calvus* Turner. *Loc. cit.* p. 462.

This race from the Luangwa Valley, N.E. Rhodesia, lacks the long black hairs on the head and thorax, and the ♀ has the vertex immaculate. Otherwise it is like the type of the species.

*P. flagellarius* Turner (fig. 19). *Ann. Mag. N.H.* II, No. 12, p. 460, ♀. 1918.

♀. 12 mm. long. Head and thorax black, with the following parts pale chrome yellow: clypeus, lower face, a small spot on the tegulae, and the mandibles; the apex of the mandible is piceous. Abdomen ochreous, the last three segments somewhat darker. Anterior and middle tibiae and tarsi, posterior tarsi and the anterior and middle femora in front, yellow. Wings fuscous, the veins and stigma blackish. Head with a whitish pubescence, short on the face, a little longer on the temples; thorax with a scanty and short whitish pilosity. Clypeus and lower face shining, the former very sparsely, the latter more closely and more finely punctured. Upper face dull, closely and longitudinally rugulose-punctate, the vertex coarsely and fairly closely punctured and fairly dull, the temples more closely and more finely punctured. Pronotum dull, the collar finely, sparsely punctured. Mesonotum, scutellum, postscutellum and mesopleurae strongly and closely punctured, the mesonotum more coarsely so than the rest, almost irregularly cribrate. Sides of epinotum dull, finely and transversely rugulose, the declivity closely and finely rugose, the dorsum strongly rugose, the triangular area fairly distinctly defined by shallow grooves at the sides, the apex of the triangle with a shallow, indistinct and rugose fovea. First and second tergites dull, microscopically reticulate-punctate, the following tergites somewhat shining except at their sides, which like those of the first two tergites are finely and closely punctured. Sternites, excepting the second, shining, coarsely and sparsely punctured at the sides. The dull, smooth, and ovoid areas on each side of the second sternite are ferruginous and very distinct. Interocular distance across the clypeus nearly twice as great as across the vertex. Anterior margin of the clypeus with the usual short lobe in the middle and the small teeth on each

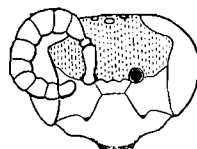


Fig. 19. *Philanthus flagellarius* Turner, ♀.

side of the same. Posterior ocelli as far from each other as they are from the eyes. Antennae short and very thick; the second joint of the flagellum not much longer than its apical width, the third to eighth joints wider than long. Basal joint of the fore tarsus with six spines on the outer margin. Dorsum of epinotum a little longer than the scutellum.

Usangu district, Tanganyika Territory, December; Lilongwe district, Central Angoniland, May to June. Type in Brit. Mus. coll.

*P. fossulatus* Turner. *Ann. Mag. N.H.* 11, No. 12, p. 459, ♀. 1918.

"♀. Nigra; clypeo, mandibulis basi, scapo subtus, facie usque ad emarginationem oculorum, fronte macula, femoribus anticis subtus, femoribusque intermediis macula parva apicali flavis; pronoto margine postico, callis humeralibus, tegulis, mesopleuris antice, postscutello, tergito primo macula utrinque, secundo fascia obliqua utrinque, tertio, quarto quintoque fascia apicali, sexto macula magna utrinque, sternitis 3-5 fascia undulata antice bisinuata, secundo fascia lata postice emarginata, sexto fere toto, tibiis tarsisque albidis; flagello, coxis, trochanteribus, femoribus, segmentis abdominalibus primo, secundo, sextoque, tertio apice quintoque basi ferrugineis; alis hyalinis, venis fuscis, stigmatibus costae testaceis. Long. 10 mm."

"♀. Clypeus very broadly rounded anteriorly, with a few scattered and shallow punctures; antennae inserted nearer to the eyes than to each other, the front between them distinctly swollen. Front very closely and finely punctured-rugulose, the vertex much more strongly punctured. Antennae not very stout; second joint of the flagellum slender at the base, gradually thickened to the apex, about as long as the third and fourth joints combined, third joint a little broader at the apex than long. Ocelli in a broad triangle, the posterior pair fully half as far again from each other as from the eyes. Pronotum as broad as the mesonotum, smooth and shining, the mesonotum shining, with large and rather sparse punctures; scutellum and postscutellum shining, the former with a few small punctures. Tergites shining, rather closely covered with large and very deep punctures, on the fourth tergite the punctures become sparser and shallow at the apex, those on the fifth tergite are small and scattered, sixth tergite almost smooth; sternites shallowly and sparsely punctured. Median segment finely and closely punctured; the basal triangular area large, covering almost all the dorsal surface, smooth and shining with a well-marked median sulcus and without marginal carinae. Cubitus of the hind wing interstitial with the transverse median nervure, the fore wings with a small fuscous cloud at the extreme apex."

*Hab.* Bohotle, Somaliland (A. F. Appleton). Type in Brit. Mus. coll.

*P. major* Kohl. *Ann. K.K.N.H. Mus. Wien*, VI, p. 352, ♂, ♀. 1891.

"14-20 mm. long (♂ 14-17, ♀ 16-20 mm.).

"Black; with the following parts yellow: clypeus, lower face, a bi- or tridentate spot between the antennal sockets, a spot on each side of the back of the head, the antennae (entirely in the ♀, but with the apical joints blackish above in the ♂), maculae on the sides of the first four tergites, the whole of the fifth and sixth, and in the ♂ also the seventh, the tegulae and the legs, the coxae excepted. Mandibles reddish yellow, their apices black. The lateral maculae are largest on the second segment<sup>1</sup>, those on the third and fourth are sometimes united posteriorly by a transverse streak. The sternites are also more or less yellow or reddish yellow. The thorax is either entirely black, or at the most has only two yellow streaks on the pronotal collar. Wings

<sup>1</sup> "Auf dem 3. Ringe," presumably the second abdominal segment, since Kohl counts the epinotum as the first.

moderately infuscated. Cubitus of the hind wing interstitial with the transverse median vein. Pilosity dirty white or yellowish. The coloration is nevertheless variable. Head relatively very large. The median area of the clypeus in the ♀ has a peculiar shape; the basal part is raised and therefore distinctly demarcated from the apical half. Its anterior margin is produced into a short lobe, as wide as the length of the third joint of the flagellum, feebly and arcuately emarginate, without forming distinct lateral teeth. In the ♂ the clypeus is normal, with three barely distinguishable teeth in the middle of the anterior margin. In the ♀ the eyes reach the base of the mandibles, but in the ♂ they are separated therefrom by cheeks which are as long as the third and fourth joints of the flagellum united, but certainly shorter than the second joint. Interocular distance on the vertex in the ♀ fully as long as the second to fifth joints of the flagellum, plus half of the sixth joint, or to the length of the second to fifth posterior tarsal joints and a little longer than the posterior metatarsus; in the ♂ it is equal to the length of the second to fifth joints of the flagellum, or as long as the second and third posterior tarsal joints, and shorter than the posterior metatarsus.

"Posterior ocelli in the ♂ as far from each other as they are from the eyes, in the ♀ not quite so far. Antennae slender compared with *P. triangulum*. In the ♂ the second joint of the flagellum is as long as the third and fourth, plus half of the fifth joint, in the ♀ about as long as the third and fourth. Head below the ocelli closely punctured, dull, with pale yellow hairs, behind the ocelli shining, fairly sparsely punctured, the punctures much coarser. Clypeus in the ♀ smooth, shining and sparsely punctured, the lower face densely punctured; in the ♂, the clypeus also is densely punctured. Collar depressed, thin; mesonotum and scutellum shining, fairly sparsely punctured in the middle, more densely towards the margins. The pronotal tubercles extend back as far as the tegulae. Episternal suture on the mesopleurae distinct, the latter are closely punctured. Epinotum closely rugoso-punctate, the triangular area with a median longitudinal groove. First abdominal segment moderately closely punctured, the following segments sparsely punctured in the ♀, fairly closely so in the ♂. . . . The sternites are sparsely pilose in the ♂, unlike many other species in which they are clearly pilose, therein resembling *P. triangulum*. Basal joint of the anterior tarsi with seven spines in the ♀, six in the ♂, the proximal spine in both sexes short and weak."

Port Natal and Cape of Good Hope.

*P. rugosus* Kohl (fig. 20 a, b, c). *Ann. K.K.N.H. Mus. Wien*, VI, p. 357, ♂, ♀. 1891.

♀. 13-14 mm. long. Head and thorax black, the clypeus, lower face, a broad V-shaped mark between the antennae, and the mandibles excepting their apical third, pale chrome yellow. An oblique and broad streak on the temples, and the pronotal tubercles, ferruginous. Antennae ferruginous, sometimes blackish above, the scapes in front yellow. Abdomen mainly ferruginous, the first tergite often blackish at the sides and base, the third and fourth tergites sometimes black on their basal halves, the second with a curved oblique spot of yellow (pale chrome yellow, but sometimes cream yellow), on the outer fourth of each side, variable in size and shape. The third and fourth tergites with narrow preapical bands of yellow, dilated at the sides and usually interrupted in the middle. The lateral foveae on the second sternite are black. Legs ferruginous, the fore and middle tibiae and tarsi paler outwardly, somewhat yellowish. Tegulae ferruginous; wings hyaline, tinged with yellow, the extreme apex of the forewing somewhat darker, costa and stigma ochreous, the other veins testaceous red. Pilosity long, white,

fairly long on the head, thorax and first tergite. Clypeus and lower face slightly shining, the former sparsely, the latter more closely, finely punctured. Upper face dull, closely and evenly reticulate-punctate, without any trace of a longitudinal striation. Vertex and temples strongly but not very closely punctured, shining between the punctures. Collar of the pronotum sharply but not closely punctured, the sides closely striate. Mesonotum and scutellum moderately shining, strongly punctured, the former closely so in front and a little dull, in the middle a little sparsely punctured. Mesopleurae closely and strongly punctured, the postscutellum not quite so strongly punctured as the scutellum. Sides of epinotum with a slight gloss, closely and shallowly

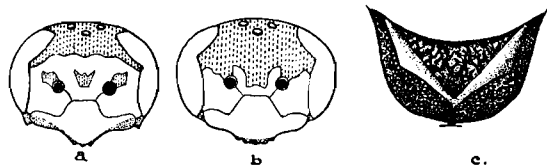


Fig. 20. *Philanthus rugosus* Kohl. a, head of ♂; b, head of ♀; c, ♀, dorsum of epinotum, semi-diagrammatic.

punctured, the declivity and the dorsum outside the triangular area dull, strongly and closely punctured, almost reticulate-punctate. The triangular area of the dorsum is very distinct, being bounded on each side by a smooth and shining margin, widest at about its middle; within the margins it is strongly reticulate-rugose, depressed apically but without a distinct median groove. First tergite dull, strongly and fairly closely punctured at the sides, sparsely punctured and fairly shining in the middle, the remaining tergites strongly punctured, sparsely so in the middle, more closely so at their sides, the punctures becoming smaller progressively on each tergite towards the apex of the abdomen. Pygidium dull and coriaceous in the middle, with a few fine and shallow punctures, the margins smooth and shining. Sternites shining, sparsely and coarsely punctured, the fifth more closely so than the rest.

Clypeus with the usual short lobe in the middle and a small tooth on each side. Interocular distance across the clypeus half as great again as across the vertex, at which point it is equal to the length of the first five joints of the flagellum, plus half of the sixth joint. The second joint of the flagellum is a little shorter than the third and fourth united. Posterior ocelli distinctly nearer to each other than they are to the eyes. Dorsum of epinotum not much narrowed posteriorly, as long as the scutellum and metanotum united. Spines on the legs ferruginous, the tarsal comb composed of flattened spines, of which there are seven on the basal joint.

♂. 14–16 mm. long. Colour for the greater part like that of the ♀, but the whole of the lower face is yellow, leaving only a small triangular spot of black between the antennal sockets, and a patch of black adjacent to and above the sockets. The streak on the temples is brighter, being yellow instead of reddish, at least on the inside. The pronotal collar is often chrome yellow above, sometimes entirely so or occasionally interrupted in the middle, or it may be entirely black. The tegulae in front are yellow, and there is sometimes a narrow transverse band of the same colour on the metanotum. The yellow on the abdomen is as a rule darker than in the ♀, or deep chrome yellow, and the markings are larger. The first tergite sometimes has a transverse bar of yellow on each side at about the middle, the second has subquadrate spots which are larger than in the ♀. Flagellum blackish, the second to fourth and the apical joints more or less ferruginous below. Tibiae outwardly and the



tarsi, lemon yellow. Sculpture like that of the ♀ but a good deal coarser, the upper face with a trace of longitudinal striation between the punctures. Second joint of the flagellum a trifle longer than the third and fourth united. Clypeus with three teeth on the anterior margin.

Capetown (Brauns); Ceres district, C.P. (R. E. Turner), December.

*P. strigulosus* Turner. *Ann. Mag. N.H.* II, No. 12, p. 464, ♀, ♂. 1918.

♀. 18 mm. long. Head and thorax black; clypeus, lower face, mandibles except at the apex, and a transverse lanceolate streak above the antennal sockets, pale yellow. A streak on the temples, touching the eye margin, dirty reddish yellow. Tegulae yellow. First three tergites ferruginous, the first tergite at the base and the third on the apical margin blackish, the remaining tergites blackish, the fourth and fifth with narrow and dull yellow streaks on the sides. Second and following sternites yellow, with ill-defined fuscous patches, chiefly towards the apical margin. Coxae, trochanters and the greater part of the hind femora black, the rest of the legs yellow, but with the fore and middle femora more or less reddish at the base above. Wings flavo-hyaline, the apex of the forewings pale fuscous, the veins and stigma reddish ochreous. Pilosity short, fulvous or dark yellow on the head, brownish on the thorax, the ventral surface of the abdomen with short yellowish hairs, the first tergite sparsely pilose on the sides. Lower face and clypeus shining, the former very finely and fairly closely punctured, the clypeus with only a few large punctures. Upper face dull, finely and closely reticulate-punctate. Vertex and temples shining, coarsely and not very closely punctured. Collar of pronotum shining, finely and closely punctured, the sides dull and rugulose-striate. Mesonotum closely and strongly punctured in front and at the extreme base, elsewhere shining and very sparsely punctured, the punctures almost confined to five longitudinal bands; scutellum shining, very sparsely punctured except at the margins. Metanotum more closely punctured and fairly dull. Mesopleurae dull, closely and strongly reticulate-punctate. Sides of epinotum nitidulous, finely and obliquely rugulose, the declivity and the portion of the dorsum outside the triangular area dull and closely punctured. The triangular area is like that of *rugosus*, but the smooth margins are less angulated outwardly at the middle, and the enclosed space is more strongly, and also obliquely rugose. Tergites more finely punctured than in *rugosus*. The first and second are more closely and more finely punctured than the rest, and the sternites are sparsely and a little more coarsely punctured than the tergites. The whole abdomen fairly shining, except the pygidium which is dull and longitudinally striate, with smooth margins. Interocular distance, and the arrangement of the ocelli, are the same as in *rugosus*. Second joint of the flagellum nearly as long as the third and fourth united. Spines on the legs yellowish, the anterior metatarsus with eight spines on the outer margin.

♂. 17 mm. long. The transverse bar of yellow above the antennal sockets is larger than in the ♀. The first tergite is more extensively black at the base, the second and third paler or almost yellow at the sides, the lateral yellow streaks on the fourth and fifth diffuse but wider than in the ♀. Wings somewhat more fuscous at the apex than in the other sex. Sculpture a little coarser on the abdomen and finer and closer on the head and thorax than in the ♀, the mesonotum almost as closely punctured in the middle as in front. As in the ♀, the median area of the clypeus is somewhat longer than in most of the other species of this genus, being a little longer than wide across the middle; the anterior margin lacks teeth.

Johannesburg and Basutoland, March–April. This species is closely allied to *rugosus*.

*P. sicarius* Smith (fig. 21 a, b). *Cat. Hymen. B.M.* iv, p. 472, ♀. 1856.

♂. 11 mm. long. Head and thorax black, with the following parts pale yellow: clypeus, a more or less triangular mark on each side of the lower face separated from the clypeus and from the inter-antennal macula by wide black spaces, a very open U-shaped mark between the antennal sockets, a transverse bar widest in the middle between the latter and the anterior ocellus, a streak behind the eyes on the temples, the tegulae, a streak on each side of the pronotal collar, and a spot on the front of the scapes. Antennae black, the apical joint ferruginous. Abdomen ferruginous (burnt sienna red), with ill-defined transverse marginal bands of yellow, widened laterally, on the fourth and fifth tergites. Wings fuscous, the veins blackish. Legs reddish yellow, the femora more or less black except near the apex. Face, vertex, thorax and last four tergites with a very short, sparse and greyish pubescence, only the temples and sternites with longer hairs. Clypeus and pale areas of the lower face almost dull, fairly closely and not coarsely punctured. Upper face dull, closely and finely reticulate-punctate, the vertex and temples dull, more coarsely and less closely punctured than the upper face. Anterior face of pronotal collar moderately shining, finely and not closely punctured. The rest of the thorax dull, and excepting the triangular area of the epinotum and the metapleurae, closely and strongly reticulate-punctate. The metapleurae are transversely striated; the triangular area of the epinotum is strongly reticulate-rugose and clearly defined by a raised line on each side. Near the apex of the triangle there is an ovoid and indistinct depression. Declivity of the first tergite smooth and shining in the middle, the rest of that tergite and also the second and third, dull, closely and strongly punctured; the fourth to sixth tergites are more strongly and less closely punctured and slightly shining, the seventh smooth and shining. The second and third, and apical halves of the fourth to sixth sternites are irregularly and fairly strongly punctured and shining; the third to fifth slightly tumid at the sides posteriorly, the fourth and fifth dull and rugulose on their basal halves, the apical sternite deeply and semicircularly emarginate at the apex. Interocular distance across the clypeus half as great again as across the vertex, at which point it is equal to the length of the first five joints of the flagellum. Second joint of the flagellum as long as the third and fourth united. Posterior ocelli as far from each other as they are from the eyes. Dorsum of epinotum as long as the scutellum, very little narrowed posteriorly, the posterior angles very slightly rounded. First segment of the abdomen wide, two and a half times wider than long in the middle, not much narrower above the declivous face than across the apex; second segment twice as wide as long, and about as long as the first.

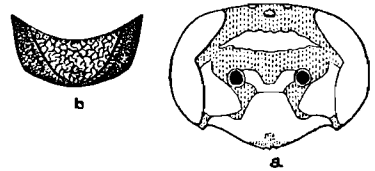


Fig. 21. *Philanthus sicarius* Smith, ♂. a, head; b, dorsum of epinotum.

(This description of the ♂ is based on a specimen in the Brit. Mus. coll., ex F. Smith coll., from Fernando Po.)

♀. Length 5 lines. Head and thorax black; abdomen and legs ferruginous; the wings dark fuscous, paler at their base; the mandibles, clypeus, face on each side, two spots between the antennae, a transverse line above, the scape in front, and a spot behind the eyes, yellow; a black line on each side of the clypeus, not extending to the anterior margin of the face; the tips of the mandibles black; the flagellum beneath and the apical joint entirely fulvous;

an interrupted line on the collar and a spot on the tegulae yellow. Abdomen closely and finely punctured, and more or less yellow beneath.

"*Hab.* West Africa (Whydah); Fernando Po."

*P. fuscipennis* Guérin (fig. 22 *a, b*). *Iconog. règn. anim.* III, p. 443. 1845.

*P. consimilis* Kohl. *Ann. K.K.N.H. Mus. Wien*, VI, p. 349, ♀, ♂. 1891.

*P. reticulatus* Cameron. *Sjöstedt's Kilimandjaro-Meru Exped.* 8, p. 270. 1910.

♀. 14 mm. long. Head and thorax black; the mandibles excepting the apex, clypeus, lower face, a wide U-shaped mark between the antennal sockets, a transverse bar above them, and a streak on the temples touching the ocular margin in its lower half, pale yellow. Antennae ferruginous below, blackish above, the scapes with a small yellow spot in front. The streak on the temples is sometimes ferruginous towards the vertex. Collar of pronotum above, tegulae, pronotal

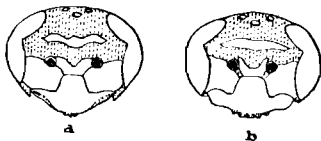


Fig. 22. *Philanthus fuscipennis* Guérin.  
*a*, head of ♂; *b*, head of ♀.

tubercles and a quadrangular spot behind them on the mesopleurae, pale yellow. Scutellum and postscutellum in the middle yellow, sometimes ferruginous, or entirely black. Abdomen ochreous, the depressed apical margins of the tergites, the first tergite at the base and the pygidium somewhat darker. Coxae black, trochanters ferruginous, the rest of the legs ochreous, with the femora more or less reddish yellow basally. Wings varying from pale flavo-hyaline through flavo-fusco-hyaline to fuscous, costa and stigma dark ochreous, the veins brown. Pileosity short, yellowish and sparse, the first tergite almost glabrous except at the sides. Clypeus smooth, shining, and very sparsely finely punctured. Lower face finely punctured, fairly closely so above where it is dull. Upper face dull, very finely and closely reticulate-punctate. Vertex and temples shining, sparsely and coarsely punctured. Collar of pronotum moderately shining, finely and fairly closely punctured. Mesonotum shining in the middle, coarsely punctured, closely so in front and behind, less closely at the sides, sparsely and irregularly in the middle. Mesopleurae strongly and closely rugoso-punctate. Epinotum outside the triangular area closely reticulate-rugose, the sides in front with the sculpture more or less effaced; triangular area coarsely and closely rugose, defined at the sides by a narrow, nearly smooth and slightly raised margin. First tergite nearly dull, closely and finely punctured, the remaining tergites shining, sparsely and shallowly punctured, fairly closely so at the sides, the punctures becoming larger and deeper on each succeeding segment towards the apex of the abdomen. Pygidium dull, closely and finely striate longitudinally, and, in addition, sparsely punctured at the base, the margins smooth. Sternites shining, the second to fifth with elongated and large punctures. Median lobe and teeth on the anterior margin of the clypeus quite distinct. Interocular distance across the clypeus nearly half as great again as across the vertex, where it is equal to little more than the length of the first four joints of the flagellum. The second joint of the flagellum is one and a half times as long as its apical width and only one-quarter longer than the third. Posterior ocelli as far from each other as they are from the eyes. Dorsum of epinotum as long as the scutellum. Tarsal comb composed of flattened spines, of which there are seven on the basal joint.

♂. 11 mm. long. Median area of the clypeus longer than wide, its anterior margin furnished with three small teeth. Antennae black, the tip of the apical joint ferruginous, the second joint of the flagellum two and a third times as long as its apical width, and as long as the third and fourth united. Posterior

ocelli a little nearer to each other than they are to the eyes. Otherwise like the ♀.

Cape Colony, Transvaal, Orange Free State and Rhodesia. According to Turner, this species is distributed over the whole Ethiopian region.

At one time it appeared to me that some examples from Rhodesia could be separated from the type as a subspecies, on account of the fuscous wings, dark posterior tibiae and a slightly coarser puncturation of the mesonotum. However, the examination of a fairly large amount of material from the more southern portions of the South African subregion shows that these characters are occasionally to be found there also, together with intermediate forms which would make such a separation entirely artificial. It would seem that as a rule the ♂♂ from Rhodesia have the wings distinctly fuscous, the ♀♀ sometimes so, but the latter are more often flavo-hyaline than not. These Rhodesian specimens, together with half of those from the Transvaal, and three ♂♂ from Knysna have the scutellum and postscutellum immaculate. It should be noted that the temples are much wider in the ♂♂ than in the ♀♀ of this species; viewed from the side, the temples in the ♂♂ at their widest point being fully as wide as the eyes, and distinctly less in the ♀♀.

\**P. fuscipennis* Guérin, race *temerarius* Kohl (as species). *Ann. K.K.N.H. Mus. Wien*, ix, p. 290, ♂. 1894.

A comparison of the type of *temerarius* with a large series of *fuscipennis* ♂♂ makes it plainly apparent that Kohl's species must be subordinated to *fuscipennis* as a subspecies. In his original description, Kohl unfortunately compared it with *triangulum*, a species with which it has little in common, whereby its validity to specific rank was enhanced, whereas a comparison with Guérin's species would have shown how closely those two forms are allied. It differs in fact from *fuscipennis* mainly by the much closer and finer sculpture of the mesonotum and scutellum. On the mesonotum the puncturation is barely coarser in the middle than at the sides, the punctures being so close together that the sculpture can be described as reticulate-punctate. In *fuscipennis*, the punctures in the middle part of the mesonotum are much larger than those round the margins, and some of them at least are separated by shining spaces which are fully equal to twice the diameter of the largest puncture. The puncturation of the dorsum of the epinotum, outside the triangular area, is also slightly finer and closer in the race than in *fuscipennis*. No reliance can be placed on the coloration which is exceedingly variable in the whole genus, but it may be noticed that the posterior tibiae in the type of *temerarius* are blackish, shading into ferruginous below near the apex.

Of three specimens from Walikale and Coquilhatville, Belgian Congo, collected by Dr Bequaert, which are certainly to be assigned to this race on account of the structure and sculpture, two have the abdomen dark ferruginous and one has the second and third tergites in greater part yellow, the first yellow on the apical third, and the fourth and succeeding tergites ferruginous in the middle and dull yellow at the sides. The wings in these specimens from the Congo are also darker but not so dark as in the Rhodesian specimens of *fuscipennis*.

The type from Batta, West Africa, is in the collection of Dr Brauns.

*P. bucephalus* Smith (figs. 23 a, b, and 24). *Cat. Hymen. B.M.* iv, p. 472, ♂. 1856.

*P. spilaspis* Cameron. *Ann. Trans. Mus.* ii, p. 145, ♂. 1910.

♀. 17 mm. long. Head and thorax black; clypeus, lower face up to the level of the antennal sockets, mandibles excepting their piceous apical third,

a narrow streak on the temples adjacent to the margin of the eyes, a spot on each side of the pronotal collar and the anterior half of the tegulae, yellowish white. The scutellum sometimes has a small spot of yellowish white in the middle. Abdomen varying from yellow to ferruginous, the first tergite more or less blackish over its basal half, the third to fifth tergites usually darker than the first two, the pygidium flavo-ferruginous. First sternite black, the other sternites yellow, the foveae on the second ferruginous. Coxae, trochanters, femora and tibiae black, the fore and middle tibiae more or less fusco-ferruginous below, the middle femora with a small spot of yellow at the apex, the tarsi flavo-ferruginous. Wings fuscous (brown by transmitted light), paler distally but with the apex beyond the cells as dark as the base, stigma brownish red, the veins dark brown. Clypeus and lower face glabrous, the rest of the head and the thorax with a very short, dense and brownish pubescence, intermixed with longer paler hairs on the lower part of the temples and the sides of the thorax. Sternites with an abundant, yellow and outstanding pubescence. Clypeus and lower face with a greasy lustre, the former almost impunctate, the latter very shallowly and exceedingly finely punctured. Upper face dull, finely and closely reticulate-punctate; vertex fairly dull, closely punctured, the punctures not very large, the temples shining, fairly closely punctured above, sparsely so below. Neck of pronotum rugulose, the collar slightly shining and finely punctured. Mesonotum dull,

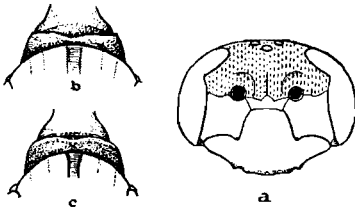


Fig. 23.



Fig. 24.

Fig. 23. *Philanthus bucephalus* Smith. a, head of ♀; b, pronotum of ♀; c, race *rotundicollis*, pronotum ♀.

Fig. 24. *Philanthus bucephalus* Smith, ♀. Dorsum of epinotum.

closely, sharply punctured, the punctures not large, here and there almost reticulate-punctate, only a narrow area in the middle with sparser puncturation. Scutellum and postscutellum shining and sparsely punctured in the middle, with larger punctures than those of the mesonotum, at the sides dull, closely and finely punctured. Mesopleurae dull, closely and fairly finely punctured. Dorsum of the epinotum outside the triangular area, the declivity and upper part of the sides dull, closely and strongly reticulate-punctate; the lower part of the sides shallowly rugulose-punctate and slightly shining. The triangular area is margined on each side by a slightly raised and closely punctured border, within these margins the area is coarsely reticulate-rugose, with an ill-defined depression near the apex. First two tergites closely and finely punctured, the first fairly dull, the second shining; third to fifth tergites shining, more coarsely punctured than the first two, sparsely punctured in the middle, more closely so at the sides, the punctures increasing in size on each succeeding segment. Pygidial area closely striolate, the apical fourth smooth and shining. Sternites shining, the second sparsely, coarsely and shallowly punctured; on the remaining sternites the punctures become progressively smaller and closer; the ventral surface of the pygidium slightly hollowed out, so that it is submarginate on each side. Median area of the clypeus a little longer than wide, its anterior margin with a very short and wide lobe, with

a small obtuse tooth on each side. Face somewhat swollen in the middle above the clypeus, with an impressed longitudinal line in the middle of the swelling. Interocular distance across the clypeus nearly twice as great as across the vertex, at which point it is equal to a little more than the length of the first four joints of the flagellum. Second joint of the flagellum barely half as long again as its apical width, one-fourth longer than the third. The flagellum is fairly stout, the third to ninth joints wider than long. Posterior ocelli nearly twice as far from the eyes as they are from each other. Pronotal collar short, slightly concave on its anterior face above, the shoulders subrectangular. Epinotum not longer than the scutellum. First tergite twice as wide at the apex as long in the middle. Tarsal comb ferruginous, the basal joint with eight spines, the spines on the tibiae black, on the tarsi ferruginous. The cubitus of the hindwing originates slightly beyond the transverse median vein.

♂. 15 mm. long. Anterior tibiae and femora ferruginous, the base of the femora black. Upper face with a transverse bar of yellow above the antennal sockets. Wings darker than in the ♀, otherwise coloured like that sex. Interocular distance across the vertex equal to the length of the first five joints of the flagellum. The second joint of the latter is two and a quarter times as long as its apical width, and about as long as the third and fourth united. Posterior ocelli as far from the eyes as they are from each other. Moustache black. Median area of the clypeus without teeth on the apical margin. Seventh tergite smooth, with one or two large punctures near the base, the apex arcuately emarginate.

Salisbury and Sawmills, S.R.; Dondo, P.E.A. (R.M. coll.)

*P. bucephalus*, race *rotundicollis* n.r. (fig. 23 c).

♀. 17 mm. long. This form differs from the type of the species as follows. Sculpture on the middle of the mesonotum somewhat coarser, on the upper face and vertex finer. Collar of pronotum on its dorsal surface smooth, shining, sparsely punctured, as thick in the middle as at the sides, the shoulders widely rounded, not rectangular as in the type of the species. First abdominal segment, excepting the narrow depressed apical margin, entirely black. Pygidial area less closely striolate.

Abak, S. Nigeria (M. Jeffries). Type in R.M. coll.

*P. pallidus* Klug. *Symb. phys.* v, Tab. 47, fig. 8, ♂. 1845; Kohl, *Ann. K.K.N.H. Mus. Wien*, vi, p. 362. 1891.

This species, unknown to me in nature, has been recorded from Abyssinia, and should therefore be included in these pages. Kohl's fuller description is quoted herewith:

"9-13 mm. long. Yellow, inclining to ferruginous here and there. The apical half of the flagellum darker above. In respect to the colour this species also is no doubt very variable. Wings clear hyaline. Cubitus of hind wing interstitial with the transverse median vein. Pilosity whitish.

"Clypeus apparently without any distinctive features, smooth and shining, its puncturation barely observable. Frons strongly swollen, fairly densely punctured. The puncturation behind the ocelli sparse but fairly coarse. The interocular distance on the vertex is equal to the length of the first six joints of the flagellum, or to the length of the metatarsus of the hind leg, or to the length of the second to fourth joints of the hind tarsus. The cheeks are as long as the third joint of the hind tarsus plus half of the fourth joint. The posterior ocelli are about as far from each other as they are from the eyes.

"Collar rounded at the sides, *i.e.* without humeral angles, only slightly depressed in the middle. Scutellum and mesonotum shining, coarsely and

fairly sparsely punctured; on the latter the three parallel longitudinal grooves are distinctly defined, as in *P. Komarowii* F. Morawitz. The puncturation on the mesopleurae is denser than on the mesonotum. Episternal suture distinct. Dorsum of epinotum shining, the declivity and parts adjacent to the shining area densely punctured, the sides towards the metapleurae merging into a fine striolate sculpture. Tergites fairly densely and sharply punctured, the posterior tergites somewhat more shallowly and more finely punctured than the basal ones. Sternites 4-8 with an outstanding and fairly dense pubescence. Metatarsus of the fore legs with six spines on the outer margin.

"Egypt, Abyssinia."

The following species are unknown to me in nature, and I have not been able to obtain access to the original descriptions: *P. taantes* Gribodo; *camerunensis* Tullgren; *limatus* Bingham (Ruwenzori); *ruandanus* Bischoff (Ruanda, E. Africa) and *histrion*, race *eritreanus* Bischoff; *tricolor* Fairmaire (Gaboona).

Of *P. usambarensis* Stadl. only a figure has been published (*Deutsch Ost-Afrika*, Plate, fig. 11) and it is therefore only a *nomen nudum*. To judge by the figure, Stadelmann's species is probably synonymous with *fuscipennis*, race *tenerarius*.