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THE SPHEGIDAE OF SOUTH AFRICA

By GEORGE ARNOLD, D.Sc., A.R.C.Sc., F.E.S.

PART II

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THE SPHEGIDAE OF SOUTH AFRICA

By GEORGE ARNOLD, D.Sc., A.R.C.Sc., F.E.S.

*Curator of the Rhodesia Museum, Bulawayo*

PART II

With Plate V, 18 figures and diagram

IN the key to the genera, published in the first part, the genus *Miscophoides* Brauns was omitted by an oversight. This should follow paragraph 4 of the key as follows:

- (4 b) 4 a. Venation greatly reduced, the radial, cubital and discoidal cells of the fore wing all obsolete. Pronotum large, fully as long as the mesonotum. *Miscophoides* Brauns
- (4 a) 4 b. At least one cubital cell present.

In addition to this, a new genus has to be inserted in the key. It is represented by a small Larid allied to *Tachysphex*, from which it differs by the absence of the episternal suture, the greater development of the pronotum, and by the presence of two sinuous raised lines on the face, enclosing a very open lyre-shaped space. The key, after paragraph 77, should therefore be emended as follows:

- (77) 78. Sixth tergite entire; sting sheath hidden.
- (78 b) 78 a. Face with two sinuous raised lines extending outwards from above the antennal sockets to about the middle of the eyes; the latter not strongly convergent above, the face wide; episternal suture absent; pronotum not much depressed below the level of the mesonotum, not linear behind, but with a well developed collar or posterior dorsal face. *Atelosphex* Arnold
- (78 a) 78 b. Face without such lines; episternal suture present, pronotum nearly always linear behind. *Tachysphex* Kohl

In the introduction to this work I omitted to mention one or two points which, without further explanation, may prove puzzling to the reader. It is therefore to be understood that the term "microscopically punctured" or "sculptured" means a degree of sculpture which cannot

be easily resolved with a pocket aplanatic lens magnifying less than 20 diameters. It is, however, to be noted that such sculpture, by the use of a stereoscopic binocular microscope, may be resolved with a considerably lower magnification.

The term "reticulate-punctate" has been reserved in these pages to describe a form of sculpture resembling that of a thimble, in which the spaces between the punctures are not wider than the punctures themselves.

In the keys to the species it is to be noted that by the expression "interocular distance" is meant the least distance between the eyes on the vertex; for the sake of brevity, the words "least" and "on the vertex" have been omitted.

TACHYSPHEX Kohl.

*Berlin Ent. Zeitschr.* xxvii, 166. 1883

**CHARACTERS.** Inner margins of the eyes more or less convergent towards the vertex. Ocelli placed on a raised area, the anterior ocellus round and convex, the posterior flat and elongate. Behind the ocellar area there is almost always a transverse impression of varying depth and length, concavo-convex, U-shaped or V-shaped. Face without swollen lines or tori margining the eyes. Mandibles excised on the lower margin not far from the middle, the inner margin bidentate in the ♀, unarmed or with one tooth in the ♂. Pronotum short and deeply depressed below the level of the mesonotum, the posterior portion linear when viewed from above, very rarely with a raised posterior dorsal face or collar. Epicnemium absent. Episternal suture well defined. Epinotum shorter than wide, without a dorsal field, the declivity vertical or nearly so and with a median longitudinal fovea just below its brow. Occasionally there is a raised transverse margin, interrupted in the middle, at or a little below the junction of the dorsum and the declivity.

A glabrous and triangular pygidial area present in the ♀, nearly always sharply marginate at the sides; in the ♂ the pygidium is trapezoidal and without a defined dorsal area.

Tibiae spinose. Middle tibiae with one calcar or spur. The tarsal comb in the ♀ is usually composed of long, thin and flexible cilia, but sometimes they are short and stiff and bristly; in the ♂ the comb is rarely so distinct as in the ♀. Claws unarmed, pulvilli large. Anterior tibiae of the ♂ more or less excised on the outer margin near the base, thinly pilose outwardly, never densely pubescent as in *Tachytes*.

Front wing; radial cell usually appendiculate. Three cubital cells present, the second receiving both recurrent veins, the third extended tongue-shaped towards the apex of the wing. The basal vein arises beyond the end of the submedial cell.

Hind wing; the cubitus arises beyond the end of the submedial cell; basal lobe long, extending beyond the end of the submedial cell.

The males are usually smaller than the females, and have shorter and stouter antennae.

Hab. Palaearctic, Nearctic, Ethiopian and Oriental Regions.

The species of this genus nest in sandy soil and provision their young with grasshoppers, crickets and other Orthoptera. Two species discovered by Dr Brauns in the Karroo have unusual nesting habits, in that they use burrows in wooden logs and dead plants.

KEY TO THE SPECIES OF *TACHYSPHEX* ♀♀

- (4) 1. Black species with dark fuscous wings.
- (3) 2. Wings with a strong violaceous tint; the apical abdominal segment rufo-testaceous; interocular distance on the vertex slightly less than the length of the second joint of the flagellum. **Marshalli** Turner
- (2) 3. Wings without violaceous tint; apical abdominal segment black; interocular distance equal to the combined length of the first and second joints of the flagellum. **punctatus** Smith
- (1) 4. Wings not dark fuscous.
- (12) 5. Wings moderately fuscous, fusco-hyaline or fusco-flavo-hyaline.
- (11) 6. Whole body black. 10-14.5 mm. long.
- (10) 7. Mesonotum finely punctured; dorsum of epinotum finely and closely reticulate-punctate.
- (9) 8. Legs red; antennae short, the second joint of the flagellum about one-third longer than the first; 11 mm. long. **Braunsi** Arnold
- (8) 9. Legs black, the second to fifth tarsal joints ferruginous; antennae long and slender, the second joint of the flagellum twice as long as the first. 14.5 mm. long **diabolicus** Arnold
- (7) 10. Mesonotum coarsely and sparsely punctured; dorsum of epinotum longitudinally striato-rugose. **punctatiformis** Brauns
- (6) 11. The greater part of the first, and the whole of the second abdominal segment, red; very coarsely punctured, the abdomen strongly and closely punctured; the dorsum of the epinotum coarsely reticulate. 8.5 mm. **Turneri** Arnold
- (5) 12. Wings hyaline or flavo-hyaline, in some species very feebly fusco-hyaline.
- (40) 13. Body, excluding the eyes, black; at the most only the apical fourth of the abdomen otherwise coloured.
- (27) 14. Larger species, usually more than 10 mm. long, rarely as little as 9 mm.
- (18) 15. Pilosity abundant on the thorax, especially on the epinotum where it more or less obscures the sculpture; transverse fasciae of pubescence on the abdomen quite conspicuous.
- (17) 16. Mesonotum dull, microscopically reticulate-punctate; eyes greenish yellow in life, yellow when dead; interocular distance equal to twice the length of the second joint of the flagellum. **bruniceps** Arnold
- (16) 17. Mesonotum sharply and fairly finely punctured, aciculate between the punctures; eyes blackish green in life, dull olive when dead; interocular distance barely greater than the length of the second joint of the flagellum. **syriacus** Kohl
- (15) 18. Pilosity less abundant, never obscuring the sculpture of the epinotum.
- (20) 19. All the tibiae and tarsi, the apical third or more of the front and middle femora, and all the hind femora ferruginous. **sericeus** Smith
- (19) 20. Legs otherwise coloured.
- (22) 21. The fifth and sixth, and the apical margin of the fourth abdominal segments, ferruginous; epinotum sharply and longitudinally striate, punctulate between the striae; interocular distance a little shorter than the second joint of the flagellum. **vulneratus** Turner
- (21) 22. Abdomen entirely black.
- (24) 23. Wings faintly fusco-hyaline, strongly tinged with ochreous proximally; mesonotum finely and closely punctured and dull. **Barkeri** Arnold
- (23) 24. Wings without ochreous tint; mesonotum coarsely punctured and shining between the punctures.
- (26) 25. Epinotum finely and longitudinally rugoso-striate; tegulae flavous; puncturation of mesonotum shallow and uneven. **crassipes** Arnold

- (25) 26. Epinotum strongly and longitudinally rugose, becoming reticulate-rugose posteriorly; tegulae piceous; puncturation of mesonotum deep, and except in the middle, fairly close. **ambiguus** Arnold
- (14) 27. Smaller species, 8 mm. or less, rarely as much as 9.5 mm.
- (29) 28. Legs bright ferruginous, only the basal two-thirds of the front and middle femora, and basal third of the hind femur black; apex of abdomen fusco-ferruginous. Flagellum short. Interocular distance equal to the length of the first two joints of the flagellum. **karrooensis** Arnold
- (28) 29. Legs black, or in greater part so.
- (31) 30. Face with two prominent tubercles in the middle, set close together a little above the antennal sockets, and more or less wedge-shaped when seen from the side. **bituberculatus** Arnold
- (30) 31. Face without tubercles.
- (33) 32. Antennae long and slender, reaching back to beyond the middle of the epinotum; second joint of the flagellum from two and one-half to two and three-quarter times longer than the first. **filicornis** Kohl
- (32) 33. Antennae shorter, the second joint of the flagellum twice as long as the first, or less.
- (35) 34. Small species, 6 mm. long; the lower half of the face excavated, the brow of the excavation smooth and shining; vertex and mesonotum shining, strongly and not closely punctured; epinotum coarsely and longitudinally rugoso-reticulate. **minutulus** Arnold
- (34) 35. Larger species, more than 6 mm. long.
- (37) 36. Fifth tarsal joint elongate, nearly as long as the second; the claws long and asymmetrical, the longer claw of all the legs being nearly as long as the fifth tarsal joint. **harpax** Arnold
- (36) 37. Claws symmetrical and not unusually long, the fifth tarsal joint considerably shorter than the second.
- (39) 38. Wings pale flavo-hyaline, becoming faintly fuscous towards the apex; legs short and stout; antennae short, the second joint of the flagellum barely one-third longer than the first; thorax dull, very finely and closely punctured. **Oberon** Arnold
- (38) 39. Wings hyaline; legs fairly slender; antennae slender and not very short, the second joint of the flagellum twice as long as the first; head and thorax fairly shining, coarsely punctured; the epinotum coarsely rugoso-striate. **Titania** Arnold
- (13) 40. Abdomen in greater part red, at least the first two segments red.
- (44) 41. Wings flavo-hyaline, and more or less fuscous towards the apex; fairly large species, over 13 mm. long.
- (43) 42. Last three segments of abdomen blackish; dorsum of epinotum coriaceous-reticulate; antennae short and stout. **asinus** Arnold
- (42) 43. Abdomen entirely flavo-ferruginous; dorsum of epinotum finely and closely reticulate-punctate; antennae slender. **Panzeri** v.d. Lind. var. **rhodesianus** Bischoff
- (41) 44. Wings hyaline.
- (46) 45. Head and thorax strongly and closely punctured; dorsum of epinotum strongly and longitudinally rugoso-striate, reticulate between the striae. **prosopigastroides** Bischoff
- (45) 46. Head, thorax and epinotum finely sculptured.
- (48) 47. Larger forms, 12 mm. long or more; abdomen entirely ferruginous, if not so, the pygidium at least remains ferruginous. **Panzeri** var. **dolosus** Arnold
- (47) 48. Smaller forms, not more than 11 mm. long, usually between 8 and 10 mm.; last three segments of abdomen black.
- (50) 49. Pronotum with a fairly distinct collar; mesonotum microscopically and closely punctured. **Panzeri** var. **aethiopicus** Arnold
- (49) 50. Pronotum without a collar, its posterior portion linear above; mesonotum finely but distinctly punctured. **Panzeri** var. **Caliban** Arnold

## KEY TO THE ♂♂

- (4) 1. Black species with dark fuscous wings.
- (3) 2. Wings with a strong violaceous tint; seventh tergite rufo-testaceous; interocular distance on the vertex equal to the combined length of the two basal joints of the flagellum. **Marshalli** Turner
- (2) 3. Wings without a violaceous tint; seventh tergite black; interocular distance greater than the combined length of the two basal joints, but equal to that of the second and third joints. **punctatus** Smith
- (1) 4. Wings not dark fuscous.
- (10) 5. Wings moderately fuscous, fusco-hyaline or fusco-flavo-hyaline, at least not glassy clear.
- (9) 6. Mesonotum finely punctured; dorsum of epinotum finely and closely reticulate-punctate.
- (8) 7. Larger species, 12 mm. long; eyes bice-green in life, greenish yellow when dead; interocular distance nearly equal to the combined length of the first and second joints of the flagellum. **diabolicus** Arnold
- (7) 8. Smaller species, 9 mm. long; eyes black; interocular distance distinctly greater than the combined length of the first and second, but equal to that of the second and third joints of the flagellum. **Braunsi** Arnold
- (6) 9. Mesonotum coarsely and sparsely punctured; dorsum of the epinotum longitudinally and closely striato-rugose. **punctatiformis** Brauns
- (5) 10. Wings hyaline or flavo-hyaline, never distinctly fuscous or fusco-flavous.
- (30) 11. Body, excluding the eyes, black, if at all ferruginous, then at least the first four abdominal segments are black.
- (15) 12. Epinotum with long pilosity, more or less obscuring the sculpture; face with outstanding pilosity, plainly visible from above.
- (14) 13. Basal half of first tergite with a dense, long and exerted pilosity; interocular distance a trifle more than the length of the second joint of the flagellum; mesonotum finely but distinctly punctate-rugulose. **syriacus** Kohl
- (13) 14. Basal half of first tergite without dense pilosity; interocular distance about twice the length of the second joint of the flagellum; mesonotum microscopically reticulate-punctate. **bruneiceps** Arnold
- (12) 15. Epinotum without long and dense pilosity.
- (19) 16. Eyes lemon yellow in life, ochreous yellow when dead; tibiae and tarsi ferruginous.
- (18) 17. Femora with only the apical third ferruginous; pubescence of face reddish golden; interocular distance equal to the length of the second joint of the flagellum. **sericeus** Smith
- (17) 18. Femora blackish on the basal half, only the posterior pair almost entirely ferruginous; pubescence of the face brassy golden; interocular distance equal to the combined length of the first and second joints of the flagellum. **karrooensis** Arnold
- (16) 19. Eyes black or blackish green when dead; legs black, or if the tibiae are ferruginous then the last two segments of the abdomen are also of that colour.
- (21) 20. Last two abdominal segments ferruginous. **vulneratus** Turner
- (20) 21. Abdomen entirely black.
- (25) 22. Larger species, more than 7.5 mm. long.
- (24) 23. Interocular distance equal to the combined length of the first and second joints of the flagellum. **crassipes** Arnold
- (23) 24. Interocular distance nearly equal to the combined length of the first three joints of the flagellum. **ambiguus** Arnold
- (22) 25. Smaller species, less than 7.5 mm. long.

- (27) 26. Abdomen closely and sharply punctured; dorsum of epinotum very coarsely longitudinally rugose; 7.3 mm. long. **Titania** Arnold
- (26) 27. Abdomen microscopically punctured; dorsum of epinotum not coarsely rugose; less than 7 mm. long.
- (29) 28. Head moderately, mesonotum distinctly shining, not very closely punctured; 5 mm. long. **minutulus** Arnold
- (28) 29. Head and mesonotum dull, closely punctured; 5.3-6.5 mm. long. **flicornis** Kohl
- (11) 30. Abdomen, or at least the two basal segments of same, ferruginous.
- (32) 31. Fifth and sixth sternites have at their bases a membranous transverse lamella. **Panzeri**, v.d. L. var. **aethiopicus** Arnold
- (31) 32. Fifth and sixth sternites simple.
- (36) 33. Sculpture of at least the head and thorax very coarse; thorax without adpressed pubescence.
- (35) 34. Mesonotum dull, coarsely reticulate-punctate; dorsum of the epinotum strongly and longitudinally rugoso-striate; abdomen finely punctured, the first three and greater part of the fourth segment ferruginous. **sipapomae** Arnold
- (34) 35. Mesonotum distantly and very strongly punctate and shining; dorsum of epinotum strongly reticulate-rugose; first three abdominal segments strongly punctured, only the second and apical half of the first dark red. **Turneri** Brauns
- (33) 36. Sculpture of head and thorax delicate.
- (38) 37. Fourth to seventh sternites strongly punctured. **Tuckeri** Arnold
- (37) 38. Fourth to seventh sternites not strongly punctured.
- (40) 39. Large species, 13 mm. long; pubescence of thorax and abdomen reddish golden. **Panzeri** var. **rhodesianus** Bischoff
- (39) 40. Smaller species, less than 10 mm.; pubescence of thorax and abdomen silvery white.
- (42) 41. Legs ferruginous, black only at the extreme base of the femora; abdomen pale ferruginous, slightly infuscate on the fifth and sixth tergites. **Panzeri** var. **dolosus** Arnold
- (41) 42. More than the basal half of all the femora black; not more than the first two abdominal segments dark ferruginous, the rest black (a rare variety has all the segments black with piceous apical margins). **Panzeri** var. **Caliban** Arnold

*T. punctatus* Smith (Fig. 23). *Cat. Hymen. Brit. Mus.* iv, 282, ♂. 1856.

♀, 10-12 mm. Black, mandibles castaneous except at the base. Tarsi dark reddish brown, the last two joints paler.

Lower part of face with short, scanty and greyish pubescence, the sides of the epinotum similarly pubescent, otherwise almost glabrous. Median area of clypeus tumid, slightly produced, shining, sparsely and coarsely punctured, its anterior margin straight, with the lateral angles sub-dentiform. The rest of the clypeus, face, vertex and temples dull, very closely and very finely punctured, the punctures a little larger and more distant on the vertex. Pro-mesonotum, scutellum and metanotum nitidulous, finely, sharply and fairly closely punctured, the punctures smaller and denser on the metanotum than elsewhere. Mesopleurae dull, very finely coriaceous-punctate. Dorsum of epinotum dull, closely and finely reticulate-punctate, the sides shining, obliquely and finely striate, the declivity shining and transversely striate.

Abdomen microscopically sculptured, feebly shining, the pygidial area

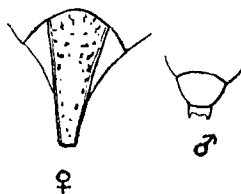


Fig. 23. *Tachysphex punctatus*, apical segment of abdomen, ♀ and ♂.



shining, coarsely punctured, elongate triangular, twice as long as wide at the base, the apex subacute.

The interocular distance on the vertex is equal to the length of the first and second joints of the flagellum. The latter is fairly long and slender, the second joint nearly three times as long as the first. The epinotum is fairly long, being only a little shorter than the mesonotum, and barely half as wide again at the base as it is long in the middle; the declivity is distinctly marginate just below its brow.

Femora shining and sparsely punctured. The spines on the legs reddish brown, the anterior metatarsus with a comb composed of about seven or eight long, stiff hairs. Wings fuscous, the veins black; the first and third abscissae of the radius of equal length, each a trifle longer than the second, the accessory cell very small.

♂, 8 mm. Last three joints of the tarsi ferruginous. The interocular distance on the vertex equal to the length of the second and third joints of the flagellum combined. Eighth sternite emarginate, the lateral angles produced into short and acute teeth; the seventh tergite rounded at the apex. Otherwise like the ♀.

Willowmore, C.P. (leg. Brauns), November. (R.M.)

*T. Marshalli* Turner. *Ann. Mag. N.H.* xx, No. 118, p. 293, ♀, ♂. 1917.

“♀. Nigra; mandibulis basi, clypeo, flagello articulis tribus basalibus, tegulis, segmento abdominali sexto, femoribus, tibiis tarsisque rufo-testaceis; alis fusco-violaceis, venis nigris; fronte, clypeoque basi aureo-pubescentibus.

♂. Feminae similis; flagello nigro; segmento dorsali sexto nigro, septimo rufo-testaceo.

Long. ♀ 15, ♂ 11 mm.

♀. Clypeus broadly subtruncate at the apex, with two minute teeth at the apical angles, shining and sparsely punctured. Eyes separated on the vertex by a distance not quite equal to the length of the second joint of the flagellum. Thorax very finely and closely punctured; median segment (*epinotum*) a little longer than the mesonotum, finely longitudinally rugulose, with short striae at the extreme base; the surface of the apical truncation strongly transversely striated, with a deep median sulcus. Abdomen microscopically punctured; the pygidial area lanceolate, pointed at the apex, with small scattered punctures. Radial cell rounded at the apex; second abscissa of the radius longer than the third; the space between the recurrent nervures on the cubitus equal to the third abscissa of the radius. Tarsal comb long; eight spines on the fore metatarsus.

♂. Eyes separated on the vertex by a distance equal to the combined length of the two basal joints of the flagellum; dorsal surface of the median segment coriaceous; anterior femora emarginate at the base; tarsal comb much shorter than in the female; seventh tergite subtruncate at the apex; eighth sternite widely emarginate, the angles forming spines.

Hab. Salisbury, Mashonaland (G. A. K. Marshall), April.

A variety with the apical segment in both sexes black, and the sculpture of the median segment in the female less developed, occurs in N.E. Rhodesia and Nyassaland; Luangwa River, July to September (S. A. Neave); Mlanje, 2300 ft., October (S. A. Neave).”

*T. diabolicus* n.sp. (Fig. 24).

♀, 14.5 mm. Black, tarsi ferruginous, the first two joints darker or reddish brown. Tegulae testaceous, wings moderately fuscous, paler towards the

apex, without any violaceous tint. Eyes in life blackish green. Lower half of face, sides of thorax, legs and dorsal surface of abdomen with a very short, almost microscopic, inconspicuous brownish yellow pubescence, the abdomen without pubescent fasciae, the ventral surface of the abdomen with a few blackish exserted hairs on the apical margins of the segments. Face, excepting the clypeus, pleurae and dorsum of epinotum dull, the mesonotum and tergites nitidulous, the ventral surface of the abdomen shining. Clypeus shining, sparsely and coarsely punctured. The rest of the head, the pro-mesonotum, scutellum, metanotum and pleurae very finely punctured, the head most closely so, the pleurae and metanotum more closely than the mesonotum and scutellum. Epinotum above closely reticulate-punctate, without striae at the base, the sides and the declivity transversely striate, the declivity less closely than the sides, slightly shining, the median sulcus deep. Abdomen above microscopically aciculate-punctate, a little more distinctly punctured below, the pygidial area lanceolate, twice as long as wide at the base, sharply margined at the sides, the apex narrowly truncate, shining, sparsely and finely punctured on the lateral margins. Clypeus with the anterior margin of the median area transverse, ending on each side in a minute dentiform angle; impressed behind the anterior margin. Eyes strongly convergent above, the distance between them on the vertex equal to the length of the scape, slightly less than the length of the second joint of the flagellum; the flagellum long and thin. A median impressed and shining line extends from the anterior ocellus to a point a little above the antennal sockets.



Fig. 24. *Tachysphex diabolicus*, eighth sternite and anterior femur of the ♂.

Spines on the legs and tarsal comb blackish brown. The comb long, composed of stiff bristles, of which there are eight on the first joint.

First and second abscissae of radius subequal, the third about one-third longer than the second, the latter a little longer than the space between the recurrent veins on the cubitus.

♂, 12 mm. All the tarsi and tibiae, the apical third of the front and middle femora, and the apical half more or less of the hind femora, bright yellowish red. Eyes in life bice-green, pale greenish yellow when dead. Otherwise coloured like the ♀. Face with a dense brassy-golden pubescence, the clypeus and base of the mandibles outwardly with a similar pubescence but more sparse. Mesonotum more finely punctured, otherwise like the ♀ in sculpture and pubescence. Interocular distance on the vertex nearly equal to the combined length of the first and second joints of the flagellum; the latter shorter than in the ♀. Seventh tergite widely rounded at the apex, the eighth sternite bi-emarginate, bluntly angular in the middle, the lateral angles dentiform. Anterior femora distinctly and widely excised near the base. Otherwise like the ♀.

Closely allied to *T. Marshalli* Turner, from which it differs by the sculpture of the epinotum, the colour, and the shape of the eighth sternite in the ♂.

Sawmills, S.R. May. Type in the R.M. coll.

*T. Braunsi* n.sp. (Fig. 25).

♂, 9 mm. Black, mandibles castaneous, tibiae, tarsi and apical third or so of all the femora yellowish red, tegulae flavo-fuscous. Pilosity absent, the whole body sparsely clothed with a very fine and inconspicuous pubescence, greyish white on the head and thorax, brownish yellow on the abdomen, the apical margins of the segments piceous-testaceous, and without transverse pubescent fasciae. Dull; head, pro-mesonotum, scutellum and metanotum

finely, evenly and closely punctured, the temples microscopically so, the mesopleurae and mesosternum more distantly punctured. The dorsum of the epinotum exceedingly finely reticulate-punctate, the declivity transversely striate, the striae extending a little over the sides which are nearly smooth, microscopically and sparsely punctulate. Abdomen dull, microscopically punctured.

Face swollen below the anterior ocellus, with an impressed median vertical line, on either side of which, just above the antennal sockets, is a low, shining and oblong tubercle. Median area of the clypeus triangularly produced in front, the triangle wider than long, subacute at the apex, the apical margin smooth and shining and slightly depressed. Interocular distance on the vertex equal to the combined length of the second and third joints of the flagellum, the second half as long again as the first, and a little shorter than the third. Mesonotum one-third longer than the epinotum, the dorsum of the latter two-thirds wider at the base than long, only a little wider at the base than at the apex, marginate transversely just below the apex, the declivity subvertical, its brow not rounded. Apical margin of eighth ventral plate straight, with a minute tooth on each side. Anterior femora widely excised near the base. Wings fusco-hyaline, the veins dark brown; first and third abscissae of the radius subequal, the second a little longer, about half as long again as the space between the recurrent veins on the cubitus.

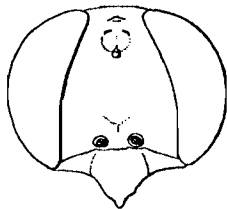


Fig. 25. *Tachysphex Braunsi*, ♂.

♀, 11 mm. Legs ferruginous, excepting only the inner basal two-thirds of the front femora, and the inner basal half of the middle femora, which are black. Pubescence of the face silvery. Apical fasciae on the abdominal segments distinct, especially when viewed from behind. Median area of the clypeus shining, sparsely and irregularly punctured with large punctures, except near the posterior margin where it is finely and closely punctured; the anterior margin very convex, less produced than in the ♂, with two minute teeth on each side. The rest of the clypeus closely and finely punctured and dull. Median portion of the face more swollen and less closely punctured than in the ♂, fairly shining, the impressed line in the middle deeper, the two tubercles above the antennal sockets larger and more prominent than in the ♂. Mesonotum, scutellum and metanotum shining, less closely and a little less finely punctured than in the ♂. Epinotum distinctly marginate between the dorsum and the declivity. Pygidial area triangular, about half as long again as wide at the base, shining, sparsely and not very strongly punctured. Interocular distance on the vertex equal to twice the length of the second joint of the flagellum. Legs stout, strongly spinose; the inner calcar of the hind tibia shorter than its metatarsus. The comb of the anterior tarsi composed of fairly thin yellowish cilia. Antennae short, the second joint of the flagellum about one-third longer than the first. Otherwise like the ♂.

Willowmore, C.P. (leg. Brauns). Type in the R.M. coll.

The nesting habits of this species, like those of *Turneri*, have been observed by Dr Brauns, and are quite unusual. It does not make burrows in the ground, but nests in tunnels in poplar stems, probably previously made by some beetle.

*T. punctatiformis* Brauns nom. in litt.

♀, 11 mm. Black, the last two joints of the front, and the last joint of the middle and hind tarsi, dark ferruginous. Clypeus and face feebly shining, the vertex, pro-mesonotum, scutellum and metanotum, very shining; the

epinotum dull. Face and thorax with a sparse, long and brownish grey pubescence, longest on the epinotum. Abdomen glabrous.

Median area of clypeus coarsely punctured, the anterior margin convex, sub-bidentate on each side; the lateral pieces of the clypeus and the face closely and finely punctured, the ocellar area much more finely, the vertex and occiput more sparingly punctured; the temples with a few scattered punctures. Mesonotum and scutellum with large and shallow punctures, the spaces between them being mostly two or three times as large as the punctures themselves. Mesopleurae microscopically rugulose, dull, shallowly and sparsely punctured; mesosternum shining, finely and sparsely punctured. Dorsum of epinotum closely and longitudinally striato-rugose, the sides finely and longitudinally striate, the declivity transversely so. Abdomen very finely and sparsely punctured, the depressed apical margins impunctate, the pygidium strongly and sparsely punctured below and at the sides, the pygidial area with a few scattered small punctures, subacute at the apex, not much longer than wide at the base. Interocular distance on the vertex is equal to twice the length of the second joint of the flagellum, or to the combined length of the first and second plus half the third. Spines on the legs dark brown, the comb of the anterior tarsus composed of long dull ochreous cilia, of which there are about nine on the first joint. Wings feebly tinged with fuscous, the veins brown. The first abscissa of the radius is a little longer than the second, the latter and the third of equal length; the third cubital cell very narrow, much produced on the cubitus, extending a good deal beyond the end of the radial cell.

♂, 10 mm. Pubescence of the face silvery, the last three tarsal joints ferruginous. Spines on the legs reddish brown. Sculpture of the mesonotum closer but shallower than in the ♀. Median area of the clypeus produced, longer than wide, its anterior margin feebly convex. Vertex wide, the interocular distance there being equal to the combined length of the first three joints of the flagellum. The latter is slender, all the joints except the first fully twice as long as wide. Eighth sternite like that of *diabolicus*, bisinuate emarginate, the lateral angles produced into small and acute teeth. The anterior tarsi without a distinct comb, the basal joint with six fine reddish yellow spines on the outer margin. Otherwise like the ♀.

Willowmore, C.P. October (leg. Brauns). Type in the R.M. coll.

Not unlike *punctatus* Smith, but with paler wings and coarser sculpture.

*T. syriacus* Kohl (Fig. 26). *Verh. Zool. bot. Ges. Wien*, xxxviii, 146, ♂. 1888. (*Tachytes nigroannulatus*) Bischoff, *Arch. f. Naturges.* p. 69, ♂. 1913.

♀, 9-12.5 mm. Black, middle third of the mandibles castaneous red, metatarsi blackish brown, the rest of the tarsal joints and the calcaria reddish brown, the spines on the legs pale ochreous, the tarsal comb brownish yellow. Eyes blackish green in life. Clypeus and face with a dense, long, silky and silvery pubescence, hiding the sculpture; vertex with a sparse pubescence of the same colour. Thorax and basal half of the first tergite covered with a long, fine and somewhat woolly pilosity, yellowish grey, fading to white in old specimens. This pilosity is erect, and particularly dense on the mesonotum, mesopleurae and epinotum, and longest on the latter segment. Legs and abdomen with a very fine decumbent and grey pubescence; the first four

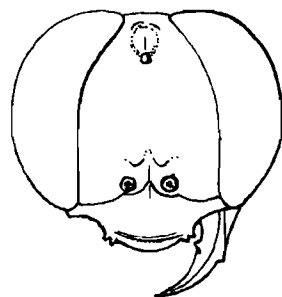


Fig. 26. *Tachysphex syriacus*, ♀.

tergites with conspicuous transverse fasciae of silvery pubescence on the apical margins; the fifth tergite with a few long yellowish hairs. Pygidium glabrous. Anterior half of the clypeus, disc of the mesonotum, scutellum and fifth dorsal segment, and all the ventral segments shining, the rest of the body dull.

Anterior half of the clypeus smooth, the rest of the head, the mesonotum, scutellum and mesopleurae closely and finely punctured, the spaces between the punctures aciculate. Epinotum densely coriaceous and finely punctate. Pygidial area very finely, closely and evenly punctate. Anterior margin of the clypeus distinctly convex, impressed behind the margin, the median area with two small blunt teeth on each side. Eyes strongly convergent above, the interocular distance on the vertex being equal to the length of the second joint of the flagellum, the distance between them across the clypeus two and a quarter times greater than across the vertex. Second joint of the flagellum as long as the third, a little more than twice as long as the first. Ocellar swelling shallowly impressed lengthwise in the middle.

Dorsum of epinotum fairly convex transversely, twice as wide at the base as long, the declivity vertical. Pygidial area triangular, longer than wide at the base, narrowly rounded at the apex, marginate at the sides. The tarsal comb composed of long flexible cilia, of which there are ten on the basal joint. First three abscissae of the radius subequal, the fourth a little longer than the second and third combined; veins reddish ochreous.

♂, 8-10 mm. Tarsi fuscous ochreous. Eyes bice-green in life, dull lemon yellow when dead. Face covered with a long, blackish and outstanding pilosity, intermixed with a few whitish hairs, longer than in *bruneiceps*. Interocular distance on the vertex equal to a little more than the length of the second joint of the flagellum. Pilosity on the thorax and abdomen less abundant than in the ♀, the puncturation of the mesonotum and scutellum finer and closer than in the ♀. Pygidium trapezoidal, dull and finely punctured. Otherwise like the ♀.

Bulawayo, Sawmills and Springvale, S.R. December to February.

A widely distributed species, recorded from the Mediterranean region, Gambia, Somaliland, British East Africa, Nyassaland and the Cape Province.

In Algerian specimens in the British Museum collection the puncturation of the thorax is closer and finer than in Rhodesian specimens, and that part is also duller. The pygidium is also more narrowly truncate in specimens from Nyassaland and Rhodesia. In the same collection there is a specimen from Algoa Bay in which the pilosity is almost ochreous, and the pubescent bands on the abdomen are dull golden.

*T. nigroannulatus* Bischoff is only a faded example of *syriacus*, somewhat smaller than the average. (R.M. and T.M. colls.)

*T. bruneiceps* n.sp.

♀, 12-12.5 mm. Closely allied to *syriacus*. Black, the apices of all the tibiae and metatarsi, and the whole of the remaining joints of the tarsi ferruginous. Eyes greenish yellow in life, ochreous olive when dead. Head, lower surface of the scapes, anterior corners of the mesonotum, mesopleurae and epinotum with long, abundant and pale yellow pilosity (fading to white in old specimens). Legs and abdomen with a fine, decumbent and pale yellowish white and slightly brassy pubescence, longer on the apical margins of the abdominal segments, where it forms distinct fasciae. Ventral surface of abdomen sparsely pubescent. The first tergite with a thin, pale yellowish and outstanding pilosity at the sides, not dense and obscuring the integument as in *syriacus*.

Head, mesonotum, mesopleurae and sides of the epinotum dull, microscopically reticulate-punctate, with a sparse, shallow and larger puncturation superimposed. Dorsum of epinotum dull, finely reticulate and coriaceous, the declivity dull and transversely striate. Abdomen moderately shining, microscopically punctured. Pygidial area triangular, rounded at the apex, finely marginate at the sides, very finely reticulate-punctate and dull, with a few larger punctures here and there. Anterior margin of clypeus convex. Eyes less convergent above than in *syriacus*, the interocular distance on the vertex being equal to a little more than twice the length of the second joint of the flagellum. Calcaria and spines on the legs whitish. The comb of the anterior tarsus composed of long pale yellowish cilia, of which there are seven on the basal joint; the latter is asymmetrical, the apex being produced outwards. Wings hyaline, the veins yellow or brownish yellow; venation similar to that of *syriacus*.

♂, 8–10 mm. Lower half of face and the clypeus covered with a whitish pilosity, the face above the antennal sockets with exserted brown pilosity. Interocular distance on the vertex much greater than in *syriacus*, being equal to twice the length of the second joint of the flagellum, or even a little more. Basal joint of fore tarsus with five thin spines. Seventh tergite broadly rounded at the apex, the eighth sternite arcuately emarginate, the lateral angles denticiform. Otherwise like the ♀. It bears a deceptive resemblance to the ♂ of *syriacus*, but can be distinguished from that species by the finer sculpture of the thorax, the absence of the dense pilosity on the first tergite, the brown hairs of the upper face, and by the anterior metatarsus, which has five spines instead of the seven in *syriacus*.

Sawmills and Plumtree, S.R. October to December. Type in R.M. coll. (R.M. and T.M. colls.)

*T. sericeus* Smith (Fig. 27 a and b). *Cat. Hymen. Brit. Mus.* iv, 285, ♀. 1856. (*fluctuatus*) Gerstaecker, *Monatsb. Akad. Wiss. Berlin*, p. 510, ♀. 1857.

♀, 10–12 mm. Black, middle third of mandibles ferruginous, eyes bice-green, tarsi, tibiae, apical fourth of the front femora, apical third of the middle, and apical half or more of the hind femora, pale ferruginous (pale burnt sienna).

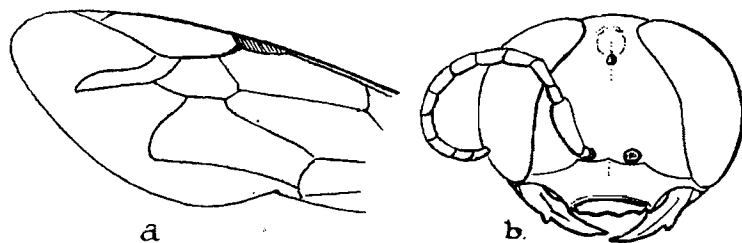


Fig. 27. a. wing, b. head of *Tachysphex sericeus* Smith, ♀.

Wings hyaline, veins and stigma brown, tegulae flavous. Clypeus and lower half of the face with a thin silvery pubescence, the vertex almost bare. Thorax (excepting the posterior two-thirds of the mesonotum and scutellum which are bare) covered with a sparse greyish white pilosity, fairly long, densest on the sides of the thorax and epinotum, but nowhere hiding the sculpture. Abdomen with a pruinose pubescence, the apical margins with fasciae of silvery pubescence.

Head dull, closely and evenly punctured, coriaceous between the punctures. Mesonotum, scutellum and metanotum nitidulous, closely and evenly punctured, the punctures on the mesonotum larger than on the scutellum. Mesopleurae dull, closely and finely punctured. Epinotum dull, the dorsum reticulate-rugose, the rugae emphasised longitudinally near the base, the sides and declivity transversely striate and punctured between the striae. Abdomen nitidulous, the apical third or so of each segment moderately depressed, the depressed area shorter at the sides than in the middle, so that its hind margin is more or less sinuate. First sternite carinate in the middle, the carina not extending to the base, the rest of the sternites shining and microscopically alutaceous, excepting the second which is dull, closely and very finely punctulate at the sides and at the base. At the base of the second sternite there is a small, shining, round and tumid area, sharply punctured on each side; this structure is only visible when the segments are extended, as otherwise the first sternite overlaps it. The fourth and fifth sternites with a few large punctures, the sixth closely punctured at the sides. The pygidial area smooth, very sparsely and finely punctured, shining, triangular, rounded at the apex and marginate at the sides.

Median area of clypeus with a deep premarginal transverse impressed line, the anterior margin almost straight and ending on each side in a stout blunt tooth. Interocular distance on the vertex equal to the combined length of the first and second joints of the flagellum. The second joint is about twice as long as the first. The ocellar area is divided by a longitudinal impression into two parts. The dorsum of the epinotum is twice as wide behind as long in the middle, its junction with the vertical declivity rectangular. Posterior and middle tibiae and tarsi feebly spinose. The comb of the anterior tarsus composed of long yellowish cilia.

The second abscissa of the radius is clearly longer than the first, and about one-fourth longer than the third, the fourth equal to the first and second combined.

♂, 8-9.5 mm. Clypeus and face covered with a dense and dark golden pubescence. Eyes greenish yellow in life, yellow when dead. Pilosity on the thorax less abundant, otherwise like the ♀ in colour, pilosity and pubescence. The puncturation of the mesonotum is a little finer than in the ♀, as is also the sculpture of the epinotum. The interocular distance on the vertex is equal to the length of the second joint of the flagellum. Second joint of the flagellum three-fourths longer than the first. Apical margins of the fifth to seventh tergites testaceous, the last shallowly and closely punctured, triangular, widely rounded at the apex. Anterior tarsi without a comb. Anterior femora distinctly emarginate near the base. Otherwise like the ♀.

Bulawayo. June to July.

A variety from Malvern, Natal, in the Durban Museum collection, has the median area of the clypeus very narrowly excised in the middle and furnished with three short teeth on each side. The dorsum of the epinotum is also somewhat more strongly sculptured; otherwise it does not differ from the typical form.

R.M. and T.M. colls.

*T. vulneratus* Turner. *Ann. Mag. N.H.* XIX, No. 112, p. 325, ♀, ♂. 1917.

♀, 7.5-11 mm. Black, mandibles except at the apex, the anterior tarsi and tibiae, the middle and hind tibiae below, the apices of all the femora, the fifth, sixth and apical margin of the fourth abdominal segments ferruginous; the middle and hind tarsi dark castaneous; the tegulae dirty yellow. Lower

half of face with short silvery pubescence. Sides of epinotum with short, exserted and whitish hairs. First three tergites with pruinose pubescence, inconspicuous, but denser on the apical margins, where it forms short, transverse fasciae.

Wings hyaline, tinged with ochreous, veins brown.

Head fairly dull, finely and closely punctured. Mesonotum and scutellum shining, closely and evenly punctured, the spaces between not larger than the punctures themselves, except on the middle of the scutellum. Metanotum dull and shagreened. Dorsum of epinotum dull, strongly, evenly and longitudinally striate, punctulate between the striae, the sides finely and obliquely, the declivity transversely, striate. Median area of clypeus impressed behind the anterior margin, which has two blunt teeth on each side. Interocular distance on the vertex a little shorter than the second joint of the flagellum. Abdomen nitidulous, the apical margins of the first three tergites impressed and piceous. Pygidial area triangular, as wide behind as long, shining and sparsely punctured, the apex rounded. Spines of the legs reddish yellow, the comb of the front tarsus composed of long yellowish cilia. The first three abscissae of the radius subequal.

"♂, 8-9 mm. Seventh dorsal segment broadly rounded at the apex; eighth ventral segment shallowly emarginate, the angles produced into distinct teeth."

N.E. Rhodesia, July and August (Neave); Hillside, Bulawayo, October and November. Allied to *sericeus* Smith.

*T. ambiguus* n.sp. (Fig. 28).

♀, 10.5-11.5 mm. Larger than, but very much like *filicornis* Kohl, from which it differs as follows:

Last two joints of all the tarsi fusco-ferruginous, the spines on the tarsi blackish brown, those on the middle and hind tibiae whitish and stouter than in *filicornis*, the comb of the anterior tarsus pale brown. Wings entirely hyaline. The head more coarsely punctured, especially between the anterior ocellus and the antennal sockets, where the punctures are more scattered, the spaces between them shining. Mesonotum, scutellum and metanotum less closely punctured than in *filicornis*, the spaces between the punctures shining, the scutellum very sparsely punctured. The rugae on the dorsum of the epinotum are relatively much stronger, wider apart, longitudinal, and connected by transverse rugae only on the posterior half.

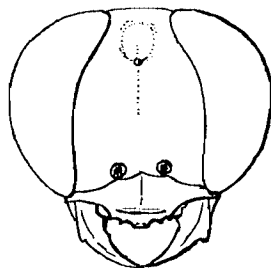


Fig. 28. *Tachysphex ambiguus*, ♀.

Mesopleurae moderately shining, less closely punctured than the mesonotum (more closely in *filicornis*); mesosternum shining, closely and strongly punctured. Pygidial area nitidulous, less elongate than in *filicornis*, shallowly and very sparsely punctulate. Median area of clypeus somewhat produced, its anterior margin depressed, convex and festooned with five shallow indentations, with a blunt tooth on each side. The head is narrower than in *filicornis*, only one-seventh wider than long. The distance between the eyes on the vertex is equal to the combined length of the first and second joints of the flagellum, as in *filicornis*, but the eyes are more convergent above than in that species since the joints of the flagellum are relatively shorter. The second joint is hardly more than twice as long as the first. The fourth abscissa of the radius is not quite twice as long as the third. Otherwise like *filicornis*.



♂, 8 mm. Colour, sculpture and pubescence as in the ♀. The median area of the clypeus is narrower than in the ♀, with the anterior margin shallowly concave. The interocular distance on the vertex is nearly equal to the combined length of the first three joints of the flagellum. The first joint of the latter is half as long as the second, the second and third subequal. Pygidium trapezoidal, finely punctured, the apical sternite emarginate. Otherwise like the ♀.

Bulawayo. June. Type in the R.M. coll.

A larger and much more robust insect than *filicornis*.

*T. crassipes* n.sp. (Fig. 29).

♀, 11 mm. A stout species, the thorax wide and compact, the legs short, the femora thick. Black, the last two joints of all the tarsi ferruginous. Sides and lower half of the face and the clypeus with a thin silvery pubescence. Back of the head and thorax with a fine, fairly long, whitish pilosity, very scanty on the mesonotum and scutellum, decumbent on the sternum; sides of epinotum glabrous. Abdomen and legs with thin yellowish grey pubescence, the abdomen without transverse fasciae. Head, ventral surface of the abdomen and the thorax, excepting the dorsum of the epinotum, moderately shining, the dorsal surface of the abdomen nitidulous. Clypeus punctured, finely and closely so at the sides, more coarsely in the middle, the anterior margin of the median area smooth. Face evenly and sharply punctured, the punctures fairly widely spaced. Pronotum and legs very finely and closely punctured. Mesonotum, scutellum and metanotum sparsely but sharply punctured, the punctures small, the spaces between them averaging the width of five or six punctures. Dorsum of epinotum dull, longitudinally and finely rugose; the sides longitudinally striate, the declivity transversely so. Abdomen very finely punctured above, the apical margins impunctate, the fifth more strongly than the first four, the pygidial area triangular, half as long again as wide at the base, marginate at the sides, narrowly truncate at the apex, shining, sparsely and coarsely punctured. Ventral surface of abdomen finely but distinctly punctured, the punctures increasing in size gradually towards the apex. Median area of clypeus tumid, its anterior margin transverse and depressed, with a shallow excision on each side. Antennae slender and fairly long, the second and third joints of the flagellum subequal, the second two and a half times longer than the first; all the joints, except the first, at least twice as long as wide. Interocular distance on the vertex equal to the combined length of the first and second joints of the flagellum. Mesonotum two-thirds wider than long, hardly longer than the epinotum. Spines and tarsal comb ferruginous, the comb composed of thin and long cilia. Inner calcar of hind tibia almost as long as the basal joint of the tarsus. Wings hyaline, faintly tinged with brown, veins brown. First abscissa of the radius longer than the second, the second and third and the space between the recurrent veins on the cubitus all of equal length.

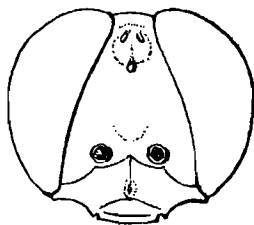


Fig. 29. *Tachysphex crassipes*, ♀.

♂, 8-9 mm. Median area of clypeus produced into a short lobe, the anterior margin of which is straight. The interocular distance on the vertex is equal to a little more than the combined length of the first two joints of the flagellum. The mesonotum is more sparingly punctured than in the ♀. The pygidium is broadly rounded and fairly closely punctured, the apical sternite emarginate, with the lateral angles dentiform. Otherwise like the ♀.

Matopos and Sawmills, S.R. July. Type in the R.M. coll.

*T. Barkeri* n.sp.

♀, 11 mm. Black, the apical half of the mandibles castaneous brown. Wings fusco-hyaline, tinged with ochreous, strongly so over the proximal half. Tegulae testaceous. Clypeus and face with a very short and dull silvery pubescence; the epinotum with a very short, erect, greyish pubescence, very inconspicuous; the rest of the body and the legs with greyish silvery decumbent pubescence, longer on the apical margins of the first three tergites, where it forms fairly distinct transverse fasciae. Tarsal comb ochreous; the spines of the middle and hind legs deep fulvous, the calcaria of the same colour.

Dull; the head, pro-mesonotum, scutellum and metanotum, pleurae and sternum very finely and evenly punctured, the punctures becoming progressively smaller from the head to the metanotum, where they are microscopic. The anterior margin of the clypeus with a few larger punctures. Dorsum of epinotum microscopically reticulate-punctate, reinforced with a superficial reticulate rugosity; the declivity transversely striate, the sides closely and finely striolate lengthwise. Abdomen dull, the third to fifth sternites with a row of large punctures near the apical margins; the sixth sternite closely punctured; pygidial area elongate-triangular, the apex emarginate, the sides sharply marginate, dull, closely punctured, the punctures smaller in the middle than at the sides.

Anterior margin of clypeus convex. Antennae short and stout, not much longer than the head is wide, not reaching back to the middle of the mesonotum, the second joint of the flagellum very little longer than wide at the apex, about half as long again as the first, the remaining joints not more than half as long again as wide.

The interocular distance on the vertex is equal to the combined length of the second and third joints of the flagellum. The angular impression behind the ocellar area very deep. In the proportions of the thorax this species resembles *crassipes*. Cilia of the tarsal comb not very long, the basal joint with eight or nine cilia. First and second abscissae of the radius, and the spaces between the recurrent veins on the cubitus, subequal; the third abscissa about half as long again as the second.

Umbogotwini, Natal (C. N. Barker); Bulwer, Natal (W. J. Hay).

Type in the Durban Museum.

Not unlike *crassipes*, from which it differs, *inter alia*, by the finer sculpture, the dull mesonotum, the abdominal fasciae and the colour of the wings and of the spines on the legs.

*T. karrooensis* n.sp.

♀, 8 mm. Black, mandibles except at the apex, tibiae, tarsi, apical fourth of the front and middle femora, and the apical half or more of the hind femora, yellowish red or bright ferruginous. Tegulae flavous. The pygidium and fifth tergite ferruginous; wings hyaline, tinged faintly with yellow, veins brown. Lower part of face with greyish white pubescence, the sides of the thorax with similar pubescence but very sparse, ventral surface of abdomen with a few long brown hairs. The first three tergites with inconspicuous apical fasciae of whitish pubescence; otherwise glabrous. Median area of clypeus shining, with a few large punctures, impressed behind the anterior margin, which is feebly convex and ends on each side in two small blunt teeth. The rest of the head, mesopleurae and metanotum dull, very finely and closely punctured. Mesonotum and scutellum dull, closely punctured, the punctures larger than those of the vertex and not smaller than the spaces between them. Epinotum dull, the dorsum closely and finely rugose longitudinally, also somewhat reticulate towards the apex, the sides very finely and longitudinally striate,

the declivity transversely and less finely striate. Abdomen nitidulous, microscopically punctulate above, very shining and almost impunctate below; the pygidial area shining, feebly punctured, the apex broadly truncate, as long as wide at the base.

Interocular distance on the vertex equal to the combined length of the first two joints of the flagellum; the latter is not long, and the second joint is only a little more than twice the length of the first. Epinotum broad, twice as wide at the base as long in the middle. Spines of the legs ferruginous; the inner calcar of the hind tibia two-thirds as long as the basal joint of the tarsus. The comb of the anterior tarsi composed of numerous long yellowish cilia. First abscissa of the radius a trifle longer than the second, the latter and the third subequal.

♂, 7 mm. Colour of legs paler than in the ♀. Eyes yellow. Face clothed with golden pubescence, the sides of the thorax with a denser pubescence than in the ♀. Apical margins of the abdominal segments testaceous. Median area of clypeus finely punctured and dull, its anterior margin angular at the corners but without the small teeth which are present in the ♀. The interocular distance on the vertex is equal to the combined length of the first two joints of the flagellum. Pygidium rounded at the apex, eighth sternite emarginate. The first and third abscissae of the radius of equal length, the second a little longer than either of them.

Willowmore, C.P. (Brauns). December. Type in the R.M. coll.

Not unlike one of the smaller members of the *Panzeri* group, especially in the ♂, but differing by the structure of the clypeus and coarser sculpture of the thorax. In the British Museum collection there is a ♀ specimen, also from Willowmore (Brauns 1900, No. 92) in which the pygidium is black.

*T. filicornis* Kohl (Fig. 30, a, b, c). *Deutsch. Ent. Zeitschr.* xxvii, 169. 1883.

♀, 7.5-9 mm. Black, upper part of eyes blackish green in life. Wings hyaline, veins black, the discoidal-cubital area often faintly suffused with ochreous. Clypeus, lower half of face, temples and pronotum with silvery pubescence. Thorax with a fine, short, exerted and whitish pilosity, scanty above, more abundant and longer on the sides and on the declivity of the epinotum; legs and abdomen with a fine, decumbent, greyish silvery pubescence, longer and more dense on the apical margins of the tergites, where it forms narrow transverse fasciae.

Dull, the clypeus very delicately, the rest of the head closely punctate and coriaceous, the punctures becoming larger towards the vertex. Mesonotum, scutellum and metanotum closely and evenly punctured, the punctures smallest on the metanotum. Dorsum of the epinotum reticulate-rugose, slightly shining between the rugae, the latter emphasised longitudinally; sides and declivity transversely striate, the declivity also punctured, its median sulcus deep. Dorsal segments of the abdomen dull, microscopically punctured, the ventral segments shining, the apical segment slightly compressed laterally, the pygidial area shining, with a few very fine punctures, lanceolate, two and a quarter times longer than wide at the base, acute at the apex, marginate at the sides.

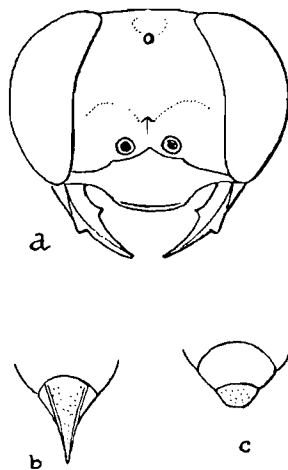


Fig. 30. *Tachysphex filicornis*.  
a. head of ♀; b. pygidium of ♀; c. pygidium of ♂.

Head in front nearly one-third wider than long. Anterior margin of the clypeus convex. Antennae distinctly long; the second joint of the flagellum from two and a half to two and three quarter times longer than the first, the third to the seventh quite three times longer than wide, the remaining joints a little shorter. The interocular distance on the vertex is nearly equal to the combined length of the first and second joints of the flagellum. Dorsum of epinotum fairly long, only two-thirds wider at the base than long. Tibiae and tarsi of middle and hind legs with a few short and whitish spines, the anterior tarsi with a comb of long and white cilia. First and third abscissae of the radius subequal, the second two-thirds longer than the first; the space on the cubitus between the two recurrent veins equal to the third abscissa of the radius.

♂, 5.3–6.5 mm. Head more coarsely punctured than in the ♀, especially behind the ocelli, the spaces between the punctures shining. The punctures on the mesonotum are also relatively larger and wider apart, the spaces between somewhat shining. The pilosity on the thorax shorter and less dense. The abdomen more distinctly punctured than in the ♀. Pygidium nitidulous, sparsely punctured, widely rounded at the apex. The antennal joints much shorter than in the ♀. The second joint of the flagellum is hardly one-fourth longer than the first, the third about one and a half times longer than the first, the third to seventh joints barely twice as long as wide. The interocular distance on the vertex is equal to the combined length of the first three joints of the flagellum. Anterior tarsi with only a few short cilia. Otherwise like the ♀.

Bulawayo, Pretoria, Durban and Willowmore. Nesting in loose sand. The commonest and most abundant species of the genus. The ♂♂ at sunset dig short burrows in the sand in which to shelter overnight. The subspecies *excerptus* Turner (*Ann. Mag. N.H.* xix, No. 112, p. 321, 1917) can hardly be maintained, as it is based merely on the striae of the epinotal dorsum being divergent instead of parallel.

*T. minutulus* n.sp.

♀, 6 mm. Black, the last four joints of the tarsi brown, the mandibles, except at the base and the apex of the pygidium, reddish brown. Shining, except the clypeus, face and epinotum. The lower half of the face with short silvery pubescence. Sides of thorax and posterior margins of the sides of the epinotum with a few coarse greyish silvery hairs, the apical margins of the tergites testaceous, the first four with transverse fasciae of silvery pubescence interrupted in the middle. Clypeus closely punctured, the median area impressed behind the anterior margin, the latter transverse. Face dull, closely and coriaceously punctured, its lower third excavated, the brow of the excavation slightly tumid and shining. Ocellar area, vertex and temples sharply, finely and not very closely punctured. The transverse impression behind the ocellar area rather deep. Mesonotum fairly strongly punctured, the spaces between the punctures hardly larger than the punctures themselves. The scutellum more finely and the metanotum very finely punctured. Dorsum of epinotum dull, reticulate-rugose, the rugae near the base larger and longitudinal; sides and declivity transversely and closely striate. Mesopleurae shining, finely and sparsely punctured. Abdomen microscopically punctulate. Pygidial area elongate triangular, acute at the apex, marginate at the sides and sparsely punctured.

Interocular distance on the vertex equal to very little more than the combined length of the first two joints of the flagellum. The latter is fairly short, the first joint two-thirds as long as the second. The dorsum of the epinotum is barely wider at the base than at the apex, nearly twice as wide at

the base as long. Wings hyaline, faintly tinged with ochreous, the first abscissa of the radius as long as the third, a little shorter than the second.

♂, 5 mm. Sculpture a little finer than in the ♀. The interocular distance on the vertex is equal to the combined length of the first three joints of the flagellum. The latter short and thick, all the joints, except the second, only a very little longer than wide, the second about twice as long as wide at the apex. The transverse impression behind the ocellar area deeper and shorter than in the ♀, not reaching the margins of the eyes. All the abdominal segments except the last two have apical fasciae of silvery pubescence at the sides. Pygidium broadly truncate at the apex. Otherwise like the ♀.

Matopos and Bulawayo, S.R. October to January. Type in the R.M. coll.

Not unlike a small *filicornis*, but with very different sculpture on the head and thorax. (T.M. and R.M. colls.)

*T. Oberon* n.sp.

♀, 8.5 mm. Black, spines of the legs ochreous, calcaria black. Wings strongly tinged with ochreous over the basal two-thirds, merging into pale fuscous towards the apex.

Pubescence of temples, face and clypeus silvery. Thorax and abdomen with a very short, inconspicuous and greyish pubescence, not forming distinct apical fasciae on the tergites. The greyish pubescence on the epinotum longer and outstanding, very sparse on the dorsum. Head and thorax dull, closely, finely and shallowly punctured, a little less closely on the vertex and on the median area of the clypeus. The latter has a row of large punctures behind the premarginal impression. Dorsum of epinotum very finely reticulate-punctate, the sides delicately and obliquely striolate, the declivity transversely striate. Abdomen dull, microscopically rugulose, the pygidium shining, sparsely punctured below and on the pygidial area above, the latter elongate triangular, narrowly truncate at the apex, about half as long again as wide at the base. Median area of clypeus moderately gibbous, its anterior margin feebly convex, with two minute teeth on each side. Antennae short and stout; the scape less than twice as long as wide; the first joint of the flagellum as long as wide, the second shorter than the third and barely one-third longer than the first. Interocular distance on the vertex greater than the combined length of the first two joints of the flagellum, but equal to that of the second and third.

Thorax wide, the mesonotum twice as wide in front as long, one and a half times as long as the epinotum. The scutellum large, half as long as the mesonotum. The epinotum twice as wide at the base as long. Legs short and stout, especially the tarsi. The apical joint of the hind tarsi hardly longer than wide at the apex, not longer than the second, but distinctly longer than its claws. The inner calcar of the hind tibia distinctly shorter than the basal joint of the tarsus. The comb of the anterior tarsi composed of long yellowish cilia, of which there are seven or eight on the basal joint. Veins on the wings brownish yellow, the first abscissa of the radius two-thirds longer than the second, one-third longer than the third.

Sawmills, S.R. December. 1 ♀. Type in the R.M. coll.

A distinct species, easily recognised by its pale ochreous wings and the short first three joints of the antennae.

*T. harpax* n.sp. (Fig. 31).

♀, 8 mm. Very similar to *Oberon* in build, colour, pubescence and sculpture of the head, thorax (except the epinotum) and abdomen. It differs from it as follows:

The basal and second joint of all the tarsi dark brown, the remaining joints flavo-ferruginous. The spines on the legs pale ochreous, the claws flavo-ferruginous with black apices, the posterior calcaria blackish brown. The apical margins of the tergites fusco-testaceous, the apex of the pygidium dark reddish brown.

Median area of the clypeus nitidulous, with a row of large punctures behind the feeble premarginal impression, the anterior margin convex and without the lateral teeth present in *Oberon*. The scape as short as in that species, but the flagellum is more slender, the first joint a trifle longer than wide, the second twice as long as the first, and a little longer than the third. The interocular distance on the vertex is equal to the length of the second joint of the flagellum plus half the first. Dorsum of epinotum dull, closely and finely rugose, the rugae radiating fan-wise from the base, the sides nitidulous and more finely striolate than in *Oberon*, almost aciculate; the declivity oblique, transversely striate. The dorsum of the epinotum is very short, being barely longer than the scutellum, or half as long as the mesonotum, hardly narrowed posteriorly, and about two and a quarter times wider at the base than long. Pygidium shining, the pygidial area sharply marginate, more strongly punctured than in *Oberon*. The sternites nitidulous and impunctate. The inner calcar of the hind tibia is long, fully one-third longer than the basal joint of the tarsus. The last joints of all the tarsi and their claws are unusually long; the claws are asymmetrical, the outer one of the front legs and the inner one of the middle and hind legs being longer than its fellow; the longer claw almost as long as the apical tarsal joint, the latter barely shorter than the second joint. The comb of the anterior tarsi longer and finer than in *Oberon*, the basal joint having about ten cilia on its outer margin. Wings hyaline, veins dull ochreous, the first three abscissae of the radius of about equal length.

Sawmills, S.R. 1 ♀. October. Platriver, Transvaal, 1 ♀. November (leg. R. v. Jutrzzencka). Type in the R.M. coll. (R.M. and T.M. colls.)

*T. bituberculatus* n.sp. (Fig. 32).

♀, 9.5 mm. Very much like *Oberon*, but the wings are not tinged with ochreous, only faintly fuscous. The colour, pubescence and sculpture are the same as in that species, but the sides of the epinotum are without striolae except at the posterior margins where they meet the declivity, and the pygidial area is more finely punctured. The vertex is a little more closely punctured than in *Oberon*, and the interocular distance on the vertex is equal to the combined length of the first two joints of the flagellum. The latter short and stout like that of *Oberon*. The chief distinction between the two species lies in the presence in this species of two wedge-shaped tubercles, separated by a deep and narrow groove, situated just above the antennal sockets. In *Oberon* there are two slight swellings in the same position, but they are merely feeble bosses, not angular and prismatic in shape as in this species.

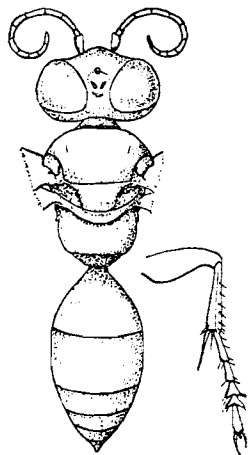


Fig. 31. *Tachysphex harpax*, ♀.

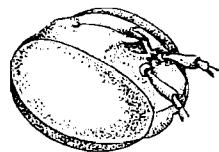


Fig. 32. *Tachysphex bituberculatus*, ♀; oblique lateral view of the head.

Legs short and stout; tarsal comb as in *Oberon*.

Bulawayo, January; Khami Ruins, S.R. December. Type in R.M. coll.

*T. Titania* n.sp.

♀, 7.5 mm. Not unlike *filicornis* Kohl, but stouter and much more strongly sculptured. Black, face, clypeus and temples covered with a silvery and not dense pubescence. Thorax with sparse, erect and whitish pubescence, more abundant on the sides of the epinotum. Abdomen with a very thin, short and whitish pubescence, hardly forming distinct transverse fasciae on the apical margins of the first three segments.

Head strongly and closely punctured, dull, the occiput more distantly punctured and slightly shining between the punctures. Mesonotum, mesopleurae, mesosternum and scutellum nitidulous, strongly and deeply punctured, the punctures more scattered on the scutellum than on the mesonotum. Sides of epinotum obliquely, the declivity transversely, strongly striate; the dorsum of the epinotum strongly and longitudinally rugoso-striate, shining between the striae, the apical margin distinctly convex. First and second tergites moderately shining, closely and sharply punctured, their apical margins more finely so. The third to fifth tergites very finely and closely punctured over the basal half, the apical half shining and almost impunctate. The pygidium smooth, shining and impunctate, elongate triangular, but not so elongate as in *filicornis*. Sternites shining and impunctate. Median area of the clypeus tumid, shining, wider than long, impressed behind the anterior margin, which is obtusely angular in the middle. Antennae distinctly shorter and thicker than in *filicornis*. The second joint of the flagellum is twice as long as the first (from two and a half to two and three-quarter times in *filicornis*) and barely longer than the third (at least one-quarter longer in *filicornis*). The interocular distance on the vertex is a trifle greater than the combined length of the first two joints of the flagellum. The epinotum is a little shorter than the mesonotum, relatively shorter than in *filicornis*; the apex of the dorsum, above the brow of the declivity, is sharply marginate, and the sides, seen from above, are distinctly convex. Abdomen wider at the base than in *filicornis*. Wings and venation as in that species. Spines on the legs blackish; the basal joint of the front tarsus with distantly spaced and long cilia.

♂, 7.3 mm. Considerably larger and more robust than the ♂ of *filicornis*. Colour, pubescence and sculpture as in the ♀, but the abdominal segments are more strongly punctured. The pubescent fasciae on the first three tergites somewhat more distinct. The brow of the epinotum not marginate, merely feebly angular in the middle, the rugae on the dorsum coarser than in the ♀. The anterior margin of the median area of the clypeus less obtusely angular in the middle. The interocular distance on the vertex is almost equal to the length of the first four joints of the flagellum. The second joint is relatively longer than in *filicornis* ♂, being nearly twice as long as the first and about as long as the third. Apex of last tergite widely truncate. Anterior tarsus without a distinct comb. Otherwise like the ♀.

Bulawayo, 1 ♂, 1 ♀, taken together at the entrance to a burrow, April; Matopos, S.R. 1 ♂. The latter specimen is a little less coarsely rugose on the dorsum of the epinotum than in the type of the ♂. Types in the R.M. coll.

*T. prosopigastroides* Bischoff. *Arch. f. Naturgesch.* p. 65, ♀. 1913.

♀, 11–11.5 mm. Black, first two abdominal segments ferruginous, third to fifth with piceous apical margins, tegulae brownish yellow, tarsi dark brownish red, the metatarsi yet darker, mandibles castaneous, black at the base and apex. Lower half of the face with a very sparse, short and greyish

pubescence which does not hide the sculpture in the least, the clypeus almost glabrous. Thorax with a short, outstanding, sparse and greyish white pilosity, longer and denser on the outer margins of the epinotal declivity. Abdomen with an exceedingly fine whitish pubescence, somewhat longer on the apical margins, where it forms inconspicuous fasciae widely interrupted in the middle.

Head, pro-mesothorax and metanotum closely punctured, fairly coarsely on the head, finely on the pronotum and metanotum, the mesonotum coarsely punctured and also reticulate posteriorly, the scutellum more coarsely punctured and slightly shining, the rest of the thorax and the head dull. Dorsum of epinotum longitudinally reticulate-rugose, the sides rugoso-striate, the declivity coarsely coriaceous and rugose. Abdomen slightly shining, the first three segments microscopically punctured, the fourth and fifth more strongly but still finely punctured, the pygidial area smooth and shining, triangular, barely longer than wide at the base, the ventral surface of the abdomen much less closely punctured than the dorsal.

Median area of the clypeus with the anterior margin convex, shining, depressed and feebly sinuate, or, as in the other specimen before me, deeply festooned and almost trituberculate in the middle. The interocular distance on the vertex is equal to the combined length of the first and second joints of the flagellum. The second joint of the latter is two and three-quarter times longer than the first, hardly longer than the third. On the vertex the eyes almost reach the occipital margin. Temples shining, sparsely and finely punctured. Epinotum very little shorter than the mesonotum, the dorsum not much wider at the base than across the apex, one and three-quarter times wider at the base than long in the middle, the declivity vertical, its brow finely marginate.

Wings hyaline, the veins reddish ochreous, the stigma brown; second abscissa of the radius a little longer than the third, and about as long as the first. Spines and tarsal comb dark brown, the comb composed of long, stiff and curved hairs, of which there are six longer ones on the outer margin of the basal joint.

Bulawayo, Sawmills and Matopos, S.R. April to May. The type is in the Berlin Museum.

Apparently a very rare species as only three have been found within the last ten years. I cannot understand why Bischoff should have had any doubts as to the generic position of this species. It is a typical *Tachysphex*, in spite of the coarse tarsal comb, small claws and pulvilli and slender legs, characters which, moreover, are not wanting singly or in combination in several other species of the genus (R.M. coll.).

*T. sipapomae* n.sp. (Fig. 33).

♂, 8.5 mm. Head and thorax black, first three and the greater part of the fourth abdominal segments bright brick-red, the remaining segments black with widely flavo-testaceous apical margins. Legs pale ferruginous, the coxae, trochanters, basal two-thirds of the fore and middle femora, and basal fourth more or less of the hind femora, black. Tegulae flavo-ferruginous, mandibles brownish yellow in the middle.

Clypeus and face with a rather coarse and golden pubescence. The back of the head, dorsum and sides of the thorax with a short, whitish and somewhat woolly pilosity, sparse except at the sides. Legs and apical margins of the abdominal segments with a very fine whitish pubescence, very sparse on the abdomen and not forming transverse apical fasciae.

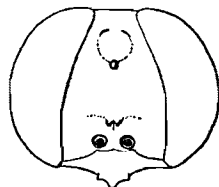


Fig. 33. *Tachysphex sipapomae*, ♂.



Clypeus, face and vertex dull, closely and sharply punctured, the temples and occiput smooth and shining, very sparsely and finely punctured. Promesonotum and mesopleurae dull, strongly and closely punctured, the punctures wide and shallow, wider than the spaces between them; mesosternum nitidulous, just as coarsely but not so closely punctured. Scutellum shining, more finely punctured than the mesonotum. Metanotum coriaceous and dull. Dorsum of epinotum coarsely and longitudinally reticulate-rugose, the sides longitudinally striate, the declivity reticulate-punctate, the whole epinotum dull. Abdomen shining, microscopically punctured, except the basal halves of the fourth and following tergites which are more strongly punctured.

Mandibles deeply and rather abruptly excised on the external margin. Clypeus produced in the middle into a narrow and short lobe which bears a blunt tooth in the middle and a smaller acute one on each side. The eyes reach the occipital margin above. The interocular distance on the vertex is equal to the combined length of the first two joints of the flagellum. All the joints of the flagellum, excepting the first, are longer than wide, the second two and a third times longer than the first, and slightly longer than the third. Mesonotum as long as the metanotum and epinotum taken together. The dorsum of the epinotum twice as wide as long, parallel-sided, marginate posteriorly by a sharp transverse ridge, the declivity vertical. Pygidium trapezoidal, its apex transverse; eighth sternite emarginate, the lateral angles produced into short teeth. Spines of the legs ferruginous, the anterior tarsus without a distinct comb. The anterior femora widely and shallowly excised near the base, the proximal side of the excision produced into a sharp and short tooth. Wings hyaline, the veins ferruginous. First and second abscissae of the radius subequal, each slightly shorter than the third, and barely longer than the space between the recurrent veins on the cubitus.

Sawmills (native name, *Sipapoma*), S.R. August; Bulawayo and Matopos, S.R. April to July.

A distinct species, sharply characterised by the coarse sculpture of the thorax and by the shape of the clypeus. It may be the ♂ of *prosopigastroides*.

*T. Turneri* Brauns (Fig. 34). nom. in litt.

♀, 8.5 mm. Black, the mandibles in the middle, the apical half of the first and the whole of the second abdominal segment, the tibiae, tarsi and apices of all the femora, ferruginous. Tegulae pale ferruginous. Clypeus and lower half of the face with dense silvery pubescence, the rest of the head, the thorax and base of the first tergite with a thin whitish pilosity. Tergites and first two sternites with a very fine and sparse pubescence, without apical fasciae.

Head closely and deeply punctured, the punctures small on the clypeus but becoming gradually larger and less crowded towards the vertex. Thorax deeply and strongly punctured, the punctures on the mesonotum and scutellum as large and as far apart as those on the vertex, closer and smaller on the pronotum and metanotum, fairly close but smaller on the mesopleurae and mesosterna than on the mesonotum. On the vertex, mesonotum and scutellum the spaces between the punctures are smooth and shining. Back of the head shining, sparingly and sharply punctured. Epinotum dull, strongly reticulate-punctate, the sides also slightly striate near their bases. Abdomen, excepting the smooth apical margins, moderately shining, strongly

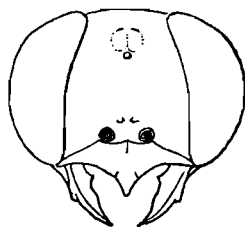


Fig. 34. *Tachysphex Turneri*, ♀.

and deeply punctured, the punctures becoming smaller on the fourth and fifth tergites, the pygidial area smooth, shining and almost impunctate, elongate-triangular, subacute at the apex, hardly marginate at the sides, about twice as long as wide at the base. Sternites less deeply punctured but more shining than the tergites. Coxae, trochanters and femora finely punctured.

Clypeus produced in the middle into a sharp triangular tooth as long as it is wide at the base. Eyes not strongly convergent above, the interocular distance on the vertex being fully equal to the combined length of the first three joints of the flagellum. Dorsum of the epinotum two and a third times wider at the base than long in the middle, noticeably convex transversely and moderately so lengthwise, its junction with the declivity widely rounded (almost as much as in the genus *Tachytes*). The spines on the legs short, the anterior metatarsus without a comb, bearing about three or four short spines. Inner calcar of hind tibia about half as long as the basal joint of the tarsus. Wings fusco-hyaline, veins brown. The first and third abscissae of the radius subequal, the second slightly longer and about half as long again as the space on the cubitus between the recurrent veins.

♂, 7 mm. First abdominal segment with a transverse arcuate band of dark, ferruginous colour (darker than in the ♀), across the apical margin, narrow at the sides but widening to about one-third of the segment in the middle. Second segment dark ferruginous, the apical third piceous red (sometimes the whole abdomen is black, *teste* Brauns). Clypeus as in the ♀. The interocular distance on the vertex is equal to the combined length of the first four joints of the flagellum. Second sternite with a deep and shining transverse impression at the base. Eighth ventral plate shallowly emarginate. Anterior femora shallowly excised, the proximal end of the excision produced into a short tooth. Wings paler than in the ♀. In the only example of this sex before me, the second abscissa of the radius is about one-fourth longer than either the first or third, and quite twice as long as the space between the recurrent veins on the cubitus. Otherwise like the ♀.

Willowmore, C.P. (Brauns). December. Type in the R.M. coll.

The description of this species was entrusted to me by Dr Brauns, who had already given it in manuscript the name which it now bears, in honour of Mr Rowland E. Turner. According to Dr Brauns's observations, this species differs in its habits from most of the genus. Instead of making burrows in the usual way in the ground, it nests in hollow stems of Aloe, Datura, etc., lying on the ground; the partitions between the cells being formed of earth and little pebbles.

#### *T. asinus* n.sp.

♀, 13 mm. Head and thorax black, legs and first four segments of the abdomen ferruginous (pale burnt sienna), the basal third of the first segment black, the apical margin of the fourth fusco-ferruginous, the fifth and sixth brownish black. The coxae, trochanters and a streak on the inner side of all the femora at the base, black. Pronotal tubercles and tegulae ferruginous. Wings deeply flavo-hyaline, the apical third or so fusco-flavous. Clypeus and lower part of face with a short and very sparse silvery pubescence. Sides of thorax with short and inconspicuous greyish pubescence. Abdomen almost glabrous.

Clypeus sparsely and evenly punctured, nitidulous, the anterior margin convex. Head dull, closely and finely punctured. Mesonotum and scutellum nitidulous, closely but less finely punctured than the head. Mesopleurae and mesosternum dull, closely and strongly punctured. Epinotum dull, the dorsum closely reticulate-rugose, the sides finely, closely and obliquely

striate, the declivity subvertical, closely and transversely striate. Abdomen nitidulous, microscopically punctulate. Antennae short and stout, the first joint of the flagellum two-thirds as long as the second, the latter about as long as the third. The interocular distance on the vertex equal to twice the length of the second joint of the flagellum. Epinotum short, hardly longer than the scutellum and metanotum taken together, twice as wide at the base as long in the middle. Pygidial area not much longer than wide at the base, closely striato-punctate and dull, shallowly emarginate at the apex. Legs short and stout, the tarsal comb and the spines flavo-ferruginous, the inner calcar of the hind tibia a little shorter than the basal joint of the tarsus; the comb of the anterior tarsus composed of long, stiff cilia, of which there are ten or more on the basal joint.

Veins of the wings ochreous on the basal half, brown on the apical. The first three abscissae of the radius of about equal length.

Sawmills, S.R. 1 ♀. May. Type in the R.M. coll.

There is a specimen in the British Museum coll. (Ft Jameson, leg. Neave, 1910, No. 116, 1912) which is fully 2 mm. longer than the type.

*T. Panzeri* v.d. Lind. *Nouv. Mem. Acad. Sc. Brux.* v, 20, ♂, ♀. 1829.

This exceedingly variable and widely distributed species presents, with its allies, a complex of forms which is excruciatingly difficult to unravel. Kohl in 1884 (*Die Gattungen und Arten der Larviden*) described eight varieties which occur over an area reaching as far north as Berlin, east to west from Greece to Spain, and south to North Africa. I have not, so far, out of a very extensive series, seen any specimens from South Africa which could be identified with the type of the species, but the varieties *dolosus* and *aethiopicus* described hereunder, come very close to it. In addition to the new forms now brought forward, I have examined many others which, either owing to the absence of the other sex or to the insufficient number of examples, cannot at present be placed with any certainty under the known forms, or added to the rank of new ones. Moreover, there can be no doubt that within the greater part of the South African subregion some of the forms have several broods in the year, and it is in the highest degree likely that seasonal variations are exhibited in regard to size, pilosity and sculpture in relation to these broods. The overlapping of the different broods also makes it difficult to sex each one correctly.

*Tachysphex Schönlandi* and *Pentheri* Cameron are certainly varieties of *Panzeri*, but owing to the loss of the types, the exact status of Cameron's species cannot now be settled.

The var. *aethiopicus* in the ♀ sex is almost inseparable from the type of the species, and its ♂ differs from the type only by the presence of one small but constant character, *i.e.* the lamellae on the sternites.

*T. Panzeri* var. *aethiopicus* n.v.

♀, 8.5–10.5 mm. Head, thorax, apices of the mandibles and antennae, except the front of the scape above, black; labrum, the median area of the clypeus more or less (but rarely as far as the posterior margin), mandibles, front of scape above, and tegulae, flavo-rufous. First three abdominal segments ferruginous, the rest black, the black colour sometimes extending over the apical margin of the third tergite. Legs ferruginous, the coxae, trochanters and a small macula at the base of all the femora on the inner side, black.

Dull, only the pygidium shining. Head and thorax very closely, microscopically and coriaceously punctulate, in parts almost reticulate-punctate, the sculpture on the thorax in fresh specimens more or less obscured by the

pubescence; the punctures are not clearly resolved with a magnification of less than fifteen diameters (aplanat lens). Sides of epinotum obliquely, the declivity transversely, finely striate. The median fovea on the upper part of the declivity very deep. Abdomen dull. Pygidial area elongate triangular, acute at the apex, shining and almost impunctate, fully twice as long as wide at the base.

Face with a dense silvery pubescence, which gradually merges into pale golden above the antennae (in worn specimens all the pubescence of the face is silvery). Thorax covered with a pale golden, decumbent and short pubescence, somewhat outstanding on the dorso-lateral margins of the epinotum, and scanty on the dorsum of that segment. First four tergites covered with a very fine pale golden pubescence (fading to silvery in worn specimens), inconspicuous except on the apical margins, where it forms indistinct transverse fasciae. Median area of clypeus tumid, its anterior margin almost straight, slightly indented in the middle. The labrum prominent, its anterior margin convex. Interocular distance on the vertex equal to the length of the second joint of the flagellum. The latter fairly long and slender. Posteriorly the pronotum is not linear above, but has a distinct dorsal face which is a little longer than the first joint of the flagellum and shorter in the middle than at its lateral angles; the latter are rounded. The dorsum of the epinotum is not much shorter than the mesonotum. Spines on the legs yellowish, the inner calcar of the hind tibia ferruginous, black at the apex, three-fourths the length of the metatarsus. The comb of the anterior tarsus is composed of long cilia, of which there are six long ones together with a short one near the base on the first joint, and four on the second joint.

The venation of the wings furnishes no reliable characters to aid identification, as it is too variable, but as a rule the first three abscissae of the radius are of about equal length. The wings are hyaline, very faintly tinged with fuscous.

♂, 8-10 mm. Eyes in life bice-green. The black maculae on the femora are larger than in the ♀, extending to beyond the middle of the femur. The last four abdominal segments black, the first three red. The pubescence of the head is usually silvery, but occasionally is bright golden. The pubescent bands of the first six tergites are silvery and more conspicuous than in the ♀. The interocular distance on the vertex is equal to the combined length of the first two joints of the flagellum; the first joint of the latter is only two-thirds as long as the second. The eighth sternite is emarginate, the lateral angles dentiform; the depth and angularity of the emargination and the degree of acuteness of the teeth are very variable. At the base of both the fifth and sixth sternites there is a very narrow, vertical, transverse and membranous lamella, which extends over the median third of the width of the segment. It is difficult to decide whether they are at the base of these two segments or whether they proceed from the apical margins of the fourth and fifth sternites. This character, and the greater interocular distance on the vertex, are the only two which I can see to distinguish this form from the type of the species, and especially from the ♂ of the variety *oraniensis* Lep., a North African form. The ventral surface of the abdomen is varyingly dull or shining. The anterior tarsi have four long cilia on the outer margin of the basal joint, and two on each of the three following joints. The length of the inner calcar of the hind tibia compared with that of the metatarsus is too variable to furnish a reliable specific character. Otherwise like the ♀.

This species and *flicornis* Kohl are the two commonest species of the genus in S. Rhodesia. It has probably several broods during the year. The ♂♂ are commonly met with on flowers, and the ♀♀ are to be met with running on

the ground near the roots of the herbage looking for the grasshopper larvae which form their prey.

I am inclined to think that *T. Schoenlandi* Cameron (*Records Albany Mus.* 1, 211, ♂, 1905) is synonymous with this form, but as Cameron's type is no longer in existence, the identity must remain in doubt.

S. Rhodesia. October to April. (T.M. and R.M. colls.)

*T. Panzeri* var. *Caliban*, n.v.

♀, 9.5 mm. This variety differs from the preceding as follows. The pubescence on the mesonotum and thorax generally is distinctly scantier, in no way hiding the sculpture; the mesonotum is moderately shining, finely but distinctly punctured, not coriaceous as in *aethiopicus*. Posteriorly the pronotum is linear above, lacking a dorsal face. The spines on the tarsal comb are coarser and blackish at the tips, on the basal joint there are seven long ones and a short one near the base. The spines on the middle and hind tarsi black, not yellow as in *aethiopicus*. The pubescent bands on the abdomen are more distinct, and the pygidial area is distinctly, although finely and sparingly, punctured. Wings hyaline, without a trace of a fuscous tinge. Only the apical third or so of the femora is ferruginous.

♂, 7-8.5 mm. Eyes in life yellowish green or yellow. Pubescence of face golden, of the mesonotum and epinotum whitish, on the latter longer and more abundant than in *aethiopicus*, and seen from above, forming a distinct fringe round the dorsum. Femora as in the ♀, with the black colour more extensive than in *aethiopicus*. The mesonotum is shining, finely and sharply punctured, the punctures much smaller than the spaces between them. The interocular distance on the vertex is equal to the length of the second plus half of the first joint of the flagellum. As in *aethiopicus* all the joints, except the first, are slender and about twice as long as wide. The fifth and sixth sternites are simple, without lamellae. The first joint of the fore tarsi has five long spines on its outer margin. Otherwise like the ♀.

Bulawayo and Sawmills, S.R. October to April. Types in R.M. coll. (T.M. and R.M. colls.)

*T. Panzeri* var. *Sycorax* n.v.

♂, 10-11 mm. Eyes greenish yellow in life, pale bice-green when dead. Head black, the median area of the clypeus excepting the posterior margin, the mandibles except at the tips, and the scapes, flavo-ferruginous; the scapes sometimes fuscous above near the apex. Tegulae flavous. Thorax black. Coxae and trochanters black; the legs ferruginous, with a black streak on the inner side of all the femora at the base, of variable extent and sometimes absent. First and last segments of the abdomen ferruginous, the colour of the other segments rather variable. Usually they are blackish or brown on the basal half, and fusco-ferruginous on the apical, the sixth segment almost entirely ferruginous, the second and third sometimes ferruginous except at the apical margins. Pubescence of the face golden, short and very dense. Pubescence on the thorax fairly dense except on the dorsum of the epinotum; in fresh examples it is pale yellowish white on the mesonotum, and whitish elsewhere. The abdomen above, except the pygidium, is covered with a short but quite conspicuous pale silvery pubescence, which forms wide transverse bands on the apical halves of the segments.

The sculpture of the head and thorax is like that of *aethiopicus*, but the sides of the epinotum are not striate, only very minutely punctulate and slightly shining. The first five tergites are microscopically rugulose-punctate and dull, the sixth and seventh feebly punctulate and nitidulous, the seventh widely rounded at the apex. The eighth sternite widely emarginate, the lateral angles

dentiform. The whole ventral surface of the insect is feebly rugulose and almost dull. Clypeus like that of *aethiopicus*. Eyes strongly convergent above, the interocular distance on the vertex being equal to the length of the second joint of the flagellum. The latter slender, the first joint a little longer than wide, all the rest at least twice as long as wide. Posteriorly the pronotum is linear above. Epinotum as long as the mesonotum, not more than one-third wider behind than long in the middle. Spines on the legs ferruginous, the inner calcar of the hind tibia brownish. The basal joint of the fore tarsus has six long pale yellowish cilia on the outer margin.

Bulawayo. October. Numerous ♂♂ were found swarming round a flowering bush, but no ♀♀ were seen. Type in R.M. coll. (T.M. and R.M. colls.) There are three ♂♂ in the British Museum coll. unnamed, from the Lonely Mine, S.R. (leg. Swale, 1913-1919, 120).

*T. Panzeri* race *rhodesianus* Bischoff. *Archiv f. Naturges.* p. 64, ♂. 1913.

♂, 13 mm. Head and thorax black, eyes greenish yellow, coxae, trochanters and extreme base of the posterior femora black, the rest of the legs and the abdomen pale ferruginous, the third and fourth tergites with a narrow transverse cloud of blackish colour near the base. Scapes brown. Clypeus and face up to the ocellar area covered with a dense and deep golden pubescence. Thorax and abdomen covered with a deep golden pubescence (fading to brassy golden in old specimens), almost reddish golden on the mesonotum; the pubescence is adjacent and very fine on the sternum and abdomen, longer on the thorax above and the sides of the epinotum, almost obscuring the sculpture on the mesonotum, and forming transverse bands on the apical margins of the tergites which are distinct only when viewed obliquely from behind. Legs finely pubescent.

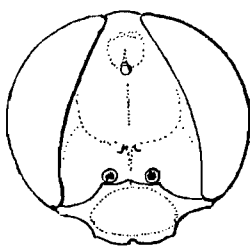
Sides of epinotum closely and very finely striate lengthwise, the declivity more strongly so and transversely, the rest of the thorax and the head microscopically reticulate-punctate and dull. Median area of the clypeus not swollen, its anterior margin feebly sinuate and rounded at the corners. Antennae long and slender, the second joint of the flagellum fully twice as long as the first. Eyes strongly convergent above, the interocular distance on the vertex almost equal to the length of the second joint of the flagellum. Dorsum of epinotum about as long as the mesonotum, not much narrower behind than in front, only one and a half times wider at the base than long, its junction with the declivity sharply marginate. Seventh tergite rounded, eighth sternite feebly dentate on each side of the apical margin. Inner calcar of the posterior tibia not as long as the metatarsus. Spines on the legs ochreous, the anterior tarsi with a feeble comb, the spines fairly thin, of which there are about five on the first joint. Wings strongly tinged with ochreous, slightly fuscous towards the apex, the veins reddish ochreous. The first three abscissae of the radius of about equal length.

♀, 14.3 mm. Colour, sculpture and pubescence as in the ♂. Wings more deeply coloured than in that sex. Antennae distinctly slender, the first joint of the flagellum a little longer than wide, the second three times longer than wide and three times longer than the first. Interocular distance on the vertex a little less than the length of the second joint of the flagellum. Pygidial area triangular, not much longer than wide at the base, narrowly truncate at the apex, dull, shallowly and rather sparsely punctured. Comb of the anterior tarsus composed of long, stiff and yellowish cilia, of which there are eight on the basal joint. Otherwise like the ♂.

Bulawayo and Sawmills, S.R. March to April. The type of the ♂ is in the Berlin Museum, of the ♀ in the R.M. coll.

*T. Panzeri* var. *dolosus* n.v. (Fig. 35).

♀, 12–13 mm. Colour somewhat variable. Mandibles reddish yellow, the apices piceous. Clypeus black, with the anterior half of the median area reddish yellow, or with only the extreme apex of the same dark red, or dark brownish red at the sides and reddish yellow in the middle. In the latter case the antennae are fusco-ferruginous, the scapes even paler, but usually the antennae are black. The rest of the head, the thorax, coxae, trochanters, inner face of the femora at the base, and the pulvilli, black. Tegulae dull ochreous. Legs and abdomen foxy red, the apical third of the third, and the whole of the fourth and fifth segments sometimes black. The fourth and fifth if not black, at least darker than the rest of the abdomen. Eyes bice-green in life, blackish green when dead. Wings flavo-hyaline, the veins reddish ochreous.

Fig. 35. *T. Panzeri* var. *dolosus*, ♀.

Clypeus and face with a thin silvery pubescence. Thorax with a greyish and oblique pubescence, longest on the sides of the epinotum, lateral margins of the mesonotum and on the mesopleurae. Legs and abdomen with an exceedingly fine and rather sparse pubescence, hardly forming distinct transverse bands on the apical margins of the segments. Anterior half of the median area of the clypeus smooth and shining, with a row of coarse punctures behind, the rest of the clypeus and the head closely and finely punctured and dull, the temples microscopically punctured and moderately shining. Mesonotum shining, finely and sharply punctured, the punctures much smaller than the spaces between them. Scutellum moderately shining, a little more closely punctured than the mesonotum, the metanotum closely punctured and dull. Mesopleurae, sides and dorsum of the epinotum dull, microscopically reticulate-punctate, the declivity moderately shining, coarsely and transversely striate, the brow of the declivity distinctly marginate. Abdomen moderately shining, shallowly and microscopically rugulose; pygidial area narrow, elongate triangular, at least three times as long as wide at the base, the sides sharply marginate, subacute at the apex, shining, sparsely and finely punctured. Spines and tarsal comb reddish yellow, the comb composed of long, curved and stout bristles, longest on the penultimate joint, the first joint with eight bristles.

Anterior margin of the median area of the clypeus feebly convex, bluntly angular on each side, shallowly excised in the middle, and with a pre-marginal transverse impression. Antennae slender and long, the first joint of the flagellum a trifle longer than wide, the second four times longer than wide at the apex and two and a half times longer than the first. Eyes distinctly convergent above, the interocular distance on the vertex nearly equal to the length of the second joint of the flagellum. Ocellar area tumid, impressed lengthwise in the middle, the impressed line continued above as far as the occipital margin and below as far as the level of the antennal sockets. Dorsum of epinotum long, as long as the mesonotum and only a little shorter than it is wide at the base. First three abscissae of the radius of about equal length.

♂, 9.3 mm. Eyes greenish yellow in life, chrome yellow when dead. Colour like that of the ♀, but the colour of the legs and abdomen is a shade paler, and the inner face of the femora is black only at the extreme base. Sculpture and pilosity as in the ♀. Face and clypeus with pale golden pubescence. Second joint of flagellum twice as long as the first. The interocular distance on the vertex is slightly greater than the length of the second joint of the flagellum. The anterior tarsi without a distinct comb, the spines short.

Seventh tergite widely rounded at the apex, the eighth sternite feebly emarginate, the angles dentiform. Otherwise like the ♀.

Sawmills, S.R. September to October. Types in the R.M. coll. (R.M. and T.M. colls.).

*T. Tuckeri* n.sp. (Fig. 36).

♂, 11 mm. Eyes greenish yellow. Head, thorax, coxae, trochanters and femora, black; tibiae and tarsi ferruginous, the posterior tibiae brown underneath; first three segments of the abdomen pale ferruginous, the remaining segments fusco-ferruginous, all the apical margins flavo-testaceous. Tegulae flavo-testaceous, the wings flavo-hyaline, the veins brown.



Fig. 36. *Tachysphex Tuckeri*, ♂. Clypeus and apical half of wing.

Clypeus and face covered with short brassy-golden pubescence, the rest of the head and the pro-mesonotum glabrous, the epinotum, mesosternum and mesopleurae with an exceedingly fine and short, outstanding, brownish pubescence. Dorsal surface of abdomen almost glabrous, having only a microscopic and sparse pubescence, the ventral segments with a short and sparse brownish pubescence, somewhat longer and denser on the apical margins. Clypeus, face and vertex dull, very finely and closely punctured, only the anterior half of the median area of the clypeus shining and with a few coarse punctures. Temples, occiput, pronotum, mesothorax and scutellum shining, finely but distinctly punctured, the punctures much smaller than the spaces between them, except on the middle of the mesonotum; more sharply and more distantly punctured than in *Panzeri*, var. *dolosus* ♂. Dorsum of epinotum dull, microscopically reticulate-rugulose, with a few short longitudinal rugae at the base, the declivity dull and transversely striate, the sides slightly shining and microscopically rugulose. Abdomen nitidulous, the first three segments microscopically rugulose, the last four segments punctured; shallowly and sparsely so above, strongly and fairly closely punctured below.

Median area of clypeus not gibbose as in the *Panzeri* group, only moderately convex, and very slightly produced in front, the anterior margin of the median area obtusely angular in the middle. Antennae fairly slender; the first joint of the flagellum as long as wide, the second joint as long as the third and two and a half times longer than the first. The interocular distance on the vertex is equal to the combined length of the first two joints of the flagellum.

Dorsum of epinotum twice as wide at the base as long, and together with the metanotum as long as the mesonotum. Seventh tergite widely truncate at the apex, trapezoidal; eighth sternite shallowly emarginate at the apex. Anterior femora moderately excised near the base, the anterior tarsi without a comb. Spines on the legs ferruginous, the inner calcar of the hind tibia very little shorter than the basal joint of the tarsus. Third abscissa of the radius about one-third longer than the first, the latter a little longer than the second; the third cubital cell not linguat as in the *Panzeri* group, the third transverse cubital vein being parallel to, and very little longer than the second, so that the cell is not much shorter on the radius than on the cubitus.

Montagu, C.P. (R. W. Tucker), October; type in the S.A. Museum coll. In general appearance this species is very much like one of the *Panzeri* group, from which it may be easily distinguished by the strongly punctured fourth to seventh abdominal segments, the shape of the third cubital cell, and the median area of the clypeus.



The five following species described by Turner are not represented in the S. African collections which I have seen.

*T. auropilosus* Turner. *Ann. Mag. N.H.* XIX, No. 112, p. 321, ♀. 1917.

"♀. Nigra; callis humeralibus, tegulis abdomine, pedibusque rufo-testaceis; segmentis ventralibus nigro intaminatis; clypeo, fronte, thorace, segmento mediano, segmentisque dorsalibus margine apicali praecipue aureo-sericeo-pubescentibus; alis pallide flavo-hyalinis, apice pallidissime infuscatis, venis testaceis. Long. 14 mm."

"♀. Clypeus broadly rounded at the apex; eyes separated on the vertex by a distance not quite equal to the length of the second joint of the flagellum. Thorax and median segment very closely and minutely punctured, rather thinly covered with very short, delicate golden pubescence; the posterior slope of the median segment (*i.e.* declivity of the epinotum) finely transversely striated, with a deep median sulcus. Pygidial area elongate-triangular, shining, sparsely and rather strongly punctured, very narrowly truncate at the apex. Comb of the fore tarsi long; tibiae with short golden pubescence. Radial cell rounded at the apex, not truncate, third abscissa of the radius longer than the second, which is equal to the space between the recurrent nervures on the cubitus. Tarsal unguis very long, as in the genus *Notogonia*."

Hab. British East Africa, Simba, 3350 ft. (S. A. Neave), April; Makindu, 3300 ft. (S. A. Neave), April.

*T. depilosellus* Turner. *Loc. cit.* p. 322.

"♀. Nigra; mandibulis basi, clypeo dimidio apicali, scapeo, flagello articulo primo, articuloque secundo basi, callis humeralibus, abdomine, pedibusque rufo-ferrugineis; alis anticis fuscis, posticis pallide fusco-hyalinis; venis nigris. Long. 12 mm."

"♀. Clypeus very broadly rounded at the apex, somewhat deflexed from the middle, the apical half shining, with a few large scattered punctures; the base of the clypeus and the front clothed with very short, sericeous, silver pubescence. Thorax closely microscopically punctured, the mesonotum and scutellum bare; dorsal surface of the median segment opaque, very closely and microscopically punctured, the sides of the segment obliquely, the apex transversely striated. Abdomen slender; pygidial area elongate-triangular, sparsely punctured. No pubescent fasciae on the dorsal segments. Tarsal comb long, the basal joint of the fore tarsus with eight spines. Radial cell broadly rounded at the apex; second abscissa of the radius longer than the third, which is longer than the space between the recurrent nervures on the cubitus.

Hab. N. Rhodesia, Pakasa (O. Silverlock), January.

A very slender species, easily distinguished by the fuscous wings from any other Ethiopian species with the abdomen red."

*T. Brinckerae* Turner. *Loc. cit.* p. 323.

"♀. Nigra; mandibulis basi, tibiis anticis basi et subtus, tarsis anticis, tarsisque intermediis posticisque apice fusco-ferrugineis; segmentis abdominalibus primo secundoque rufo-ferrugineis; tegulis testaceis; alis flavo-hyalinis, apice pallidis; venis testaceis. Long. 13 mm."

"♀. Clypeus broadly truncate at the apex, finely and closely punctured on the basal half; the apical half deflexed, shining, with large scattered punctures. Vertex very closely microscopically punctured; the eyes separated on the vertex by a distance slightly exceeding the length of the second joint of the flagellum; front and base of the clypeus clothed with very short silvery

pubescence, which is only visible in certain lights. Thorax minutely and closely punctured; median segment granulate, as long as the mesonotum, the sides and apex of the segment striated. Second and third dorsal segments with a little short silver pubescence at the apical angles; pygidial area elongate-triangular, sparsely punctured. Comb of the fore tarsus long, basal joint of the fore tarsi with eight spines. Radial cell broadly rounded at the apex; second abscissa of the radius longer than the third, nearly twice as long as the space between the recurrent nervures on the cubitus.

Hab. Transvaal, Pretoria (Miss J. Brincker)."

*T. subfuscatus* Turner. *Loc. cit.* p. 323.

"♀. Nigra; segmentis abdominalibus duobus basalibus fusco-rufis; tarsis fusco-ferrugineis; alis subhyalinis, venis fuscis; clypeo, fronte, segmentisque dorsalibus tribus basalibus fascia apicali argenteo-pubescentibus; thorace rugose punctato; segmento mediano longitudinaliter striato-reticulato. Long. 9 mm."

"♀. Clypeus broadly truncate at the apex, the apical margin armed with a number of ill-defined teeth. Head closely and rather finely punctured; antennae short and stout; eyes separated on the vertex by a distance slightly exceeding the length of the two basal joints of the flagellum. Thorax coarsely punctured-rugose; scutellum punctured; median segment irregularly longitudinally striate, with finer transverse striae, giving a reticulate appearance, which is more strongly developed on the more coarsely sculptured sides of the segment. Pygidial area smooth, rather broadly triangular. Legs slender; comb of the fore tarsi long; spur of the hind tibia much shorter than the basal joint of the hind tarsi. Radial cell broadly obliquely truncate at the apex; second and third abscissae of the radius subequal.

Hab. Nyassaland, Mlanje, 2300 ft. (S. A. Neave), October."

Although somewhat smaller than the Rhodesian specimens, I think that this species will prove to be synonymous with *prosopigastroides* Bischoff, with which the above description agrees.

*T. strigatus* Turner. *Loc. cit.* p. 324.

"♀. Nigra; tarsis articulis apicalibus brunneo-ferrugineis; fronte clypeoque argenteo-pubescentibus; mesonoto crasse punctato, cinereo-piloso; segmentis dorsalibus tribus basalibus fascia interrupta apicali argenteo-pubescente; segmento mediano fortiter longitudinaliter striato; alis hyalinis, venis brunneo-ferrugineis; tegulis testaceis. Long. 9-11 mm."

"♀. Clypeus broadly subtruncate at the apex, the apical margin somewhat reflexed and with two blunt teeth on each side, closely and not very finely punctured. Eyes separated on the vertex by a distance half as great again as the length of the second joint of the flagellum. Mesonotum and mesopleurae coarsely punctured-rugose; scutellum strongly but not very closely punctured. Median segment coarsely longitudinally striated, with finer, irregular, transverse striae between; the sides of the segment coarsely rugose-reticulate. Abdomen shining; pygidial area triangular, shining, with a few small scattered punctures. Radial cell rather broadly obliquely truncate at the apex; second abscissa of the radius a little longer than the third, equal to the distance between the recurrent nervures on the cubitus."

Hab. N.E. Rhodesia and Nyassaland.

The following species, unknown to me, have also been recorded from the Ethiopian Region.

*T. capensis* Saussure, *Reise der Novara*, Zool. II, P. I, p. 71, ♂. 1867.

*T. flavogeniculatus* Taschenberg, *Zeitsch. f. d. ges. Naturw.* LIII, 778, ♂. 1880.

- T. Nattereri* Kohl. *Verh. Zool. Bot. Ges.* xxxviii, 144, ♀, ♂. 1888.  
*T. quadricolor* Gerstaecker. *Monatsb. Akad. Wiss. Berlin*, p. 510, ♀. 1857.  
*T. agilis* Smith. *Cat. Hymen. Brit. Mus.* iv, 284, ♀. 1856.  
*T. Schoenlandi* Cameron. *Records Albany Mus.* p. 211. 1905.  
*T. Pantheri* Cameron. *Ibid.* p. 212. 1905.  
*T. tenuicornis* Bischoff. *Denkschr. d. med.-Naturwiss. Ges. Jena*, xvii, 120, ♀, ♂. 1913.  
*T. collaris* Kohl. *Ann. K.K.N.H. Mus. Wien*, xiii, 100, ♀. 1898.

Of these the first, *capensis* Sauss. and *agilis* Smith, are not sufficiently characterised in the original descriptions, and failing an examination of the types, will remain unidentifiable. Of *flavogeniculatus* I have been unable to obtain a copy of the original description; it was recorded from Abyssinia and is not likely to be found within our limits.

The description of *quadricolor* Gerst. is fuller, but nevertheless inadequate, since no mention is made of the distance between the eyes on the vertex. I have not seen any insect which agrees with the description, which is quoted hereunder, but have a single ♀ which might be regarded as a variety.

*T. quadricolor* Gerstaecker.

"Alis flavis, apice late fuscis, nigra, sericea, clypeo, mandibulis, antennarum basi, tegulis, abdomine pedibusque laete rufis. Long. lin.  $5\frac{1}{2}$ . Fem. (*Lyrops quadricolor*)."

"Of the build and size of *Lyrops rufiventris* Spinola (*Ann. Soc. Ent. France*, vii, 479) with which species this one also agrees in the presence of a distinct appendix (accessory cell) to the radial cell of the forewing. The head is dull black, the face covered with dense silver white pubescence as far as the posterior margins of the eyes; the clypeus, the mandibles excepting the blackish tips, and the first four joints of the antennae bright ferruginous. The thorax is also dull black, very finely shagreened punctate, with a thin and greyish pubescence; the sides of the epinotum with a somewhat denser and slaty-grey pubescence; the tegulae bright ferruginous. The whole of the abdomen is also bright ferruginous, its anterior segments being traversed by a blunt transverse ridge (*stumpfen Querleiste*), those on the first two segments lying behind the middle of their length, that on the third lying at the middle; the apical segment of the female is long and acute, pyramidal, finely marginate laterally, the pygidial area with scattered but distinct punctures. On the legs only the coxae and trochanters are black, all the rest bright ferruginous; the tibiae are slender, bluntly carinate longitudinally and furnished with fine spines. The wings are light yellow, their apical third brown and with a violaceous sheen; the veins on the yellow portion of the wings rust coloured, on the apical portion brown. One ♀ example from Mosambique."

The transverse ridges on the first three tergites furnish a character which is unknown to me in any other species of the genus. It is very probable that the author intended to indicate by that term the boundary between the apical depressions and the rest of the segments, in which case the expression "Querleiste" is hardly applicable.

*T. Schönlandi* Cameron.

"Black, the basal half of the abdomen red; the apex of the femora, tibiae and tarsi rufo-testaceous, the spines paler; the front, face and clypeus thickly covered with golden pubescence; wings hyaline, the nervures and stigma testaceous. Male. Length 10 mm. Grahamstown. Dr Penther."

"Eyes strongly convergent above, separated on the top by not much more than half the length of the antennal scape. Basal half of the mandibles black,

covered with golden pubescence; the apical dark red. Mesonotum and scutellum closely and distinctly punctured; their pleurae more shining and only weakly punctured. Metanotum (= epinotum) opaque, coarsely alutaceous, the apical slope irregularly transversely striated; the metapleurae (= sides of epinotum) finely, closely and regularly striated. Penultimate abdominal segment coarsely punctured, the last smooth, bare, transverse at the apex."

This is almost certainly a form of *Panzeri* and possibly synonymous with my variety *Caliban*.

*T. Pantheri* Cameron.

"Black, the basal two segments of the abdomen red; the apical half of the clypeus and labrum yellow, tinged with testaceous; mandibles rufous, yellow at the base; the apex of femora, tibiae and tarsi rufous; wings hyaline, the nervures and stigma testaceous. Male. Length 9 mm. Grahamstown. Dr Panther."

"Front and face thickly covered with silvery pubescence; they are, with the vertex, opaque, closely, finely punctured. Vertex furrowed in the middle above; above the ocelli is a reversed U-shaped furrow. Palpi rufo-testaceous. Thorax opaque, covered with white pubescence; the metanotum (= epinotum) transversely, the metapleurae more closely and regularly longitudinally striated. Abdominal segments banded with silvery pubescence; pygidium indistinctly, sparsely, finely punctured; the apical half of the epipygidium coarsely punctured. Eyes at the top separated by almost the length of the antennal scape. Tegulae rufo-testaceous."

I am inclined to suspect an error in the above description. I do not know of a single species of the genus in which the epinotal dorsum (= metanotum Cameron) is *transversely* striated. Probably "longitudinally" is intended. If so, this is also a form belonging to the *Panzeri* group.

*T. tenuicornis* Bischoff.

"♀. Black; a spot on the underside of the first antennal joint, the tegulae, and also the veins of the wings at the base, pale yellowish; the clypeus in the middle of the anterior margin, the labrum, the mandibles, apices of the femora, tibiae and tarsi of all the legs reddish yellow, the inner faces of the tibiae infuscate; the apical margins of the abdominal segments testaceous. The wings are clear hyaline.

The interocular distance on the vertex is about equal to the length of the first joint of the flagellum. The face is evenly convex; and under the thick pubescence a median longitudinal impression is hardly to be recognised. The median area of the clypeus, seen from the side, is evenly rounded, not abruptly angulated and impressed; the anterior margin is depressed and shallowly excised in the middle. The labrum is somewhat projecting and turned down at the apex. In the middle it bears a smooth longitudinal carina or swelling; the lower lateral edges are margined with short stiff hairs. Head dull, closely and finely punctured, only the underside shining. The rest of the body, excepting the pleurae, epinotum and metanotum, is shining.

The antennae are very slender and thin. The joints, from the third onwards, subequal in pairs; only the twelfth shorter than the preceding. The prothorax is depressed, and barely visible from above when the head is pressed back. The mesonotum is evenly, very finely, sparsely punctured and covered with a thin greyish pubescence. The punctures on the scutellum are somewhat coarser but more widely spaced. The epinotum is finely and closely coriaceous-rugose, here and there with indistinct longitudinal striae. The declivity is impressed in the middle and transversely rugose. The pleurae are exceedingly

finely shagreened; the sides of the epinotum longitudinally striolate. The whole thorax is evenly pubescent.

The tibiae with brighter spines, only the calcaria darker. The comb of the fore tarsus is normally developed. The abdomen exceedingly finely punctured and pubescent. The pygidium is fairly elongate, finely marginate laterally and moderately curved, the apex truncate, finely punctured, and with a few shallow and larger punctures interspersed.

The first three abscissae of the radius of about equal length.

♂. The male is exceedingly like the female. Unfortunately in the specimen before me the head is lacking, so that nothing can be said about the structure of the antennae. Length, ♀ *ca.* 10 mm. Princes Bay, south of Luderitz Bay."

*T. collaris* Kohl.

"♀. Niger; albo-pubescent et tomentosus. Caput a fronte visu transverse ellipticum. Frons subtiliter coriacea, quam subtilissime punctulata simillimo modo *T. gallici* Kohl. Oculi in vertice longitudine antennarum flagelli articularum 3<sup>tt</sup> + 4<sup>tt</sup> inter se fere plus distant.

Collare solito minus demissum, medium tuberculo compresso, supra parum exciso instructum. Dorsulum et mesopleurae nitida nequaquam dense punctulata. Pleurae segmenti mediani longitudinaliter strigosae; area dorsalis irregulariter rugosa et rugulosa; area postica transverse striata. Area pygidialis abdominis nitida, subangusta, punctulis minutis sparsis punctata. Long. 8-9 mm."

"Black. The tarsi more or less tinged with brownish red. Pubescence and tomentum white. First five abdominal segments with wide and incomplete apical bands of pubescence. Wings almost clear hyaline. The head, seen from in front, is transversely elliptical, as in *T. gallicus* Kohl, to which this species is very similar in many points. The median area of the clypeus is transversely truncate in front, the margin not quite even owing to a few shallow excisions along its course. The vertex is dull, coriaceous, minutely punctulate.

The interocular distance on the vertex is fully equal to the combined length of the third and fourth joints of the flagellum. The second joint of the latter is about twice as long as wide at the apex, and about as long as the third.

The collar of the pronotum lies by no means so low as in *gallicus*, in the middle (posteriorly) there is a compressed swelling which is emarginate above; this feature especially characterises the present species. Mesonotum and scutellum fairly shining, punctured, the punctures not dense; the mesopleurae more densely punctured. Sides of the epinotum fairly coarsely striate lengthwise. Dorsum of the epinotum irregularly rugose, more coarsely so in the middle than at the sides; the declivity transversely striate. Pygidial area elongate triangular, not flat but convex lengthwise, fairly shining, sprinkled with a few very fine punctures. The third cubital cell is linguately produced.

East Africa, Waboniland. Types in the Vienna Museum."

*ATELOSPHEX* gen. nov. (ἀτελής, incomplete).

CHARACTERS (♀). Eyes not touching the base of the mandibles, separated from them by a very short cheek, only moderately convergent above, the interocular distance on the vertex much greater than in any species of *Tachysphex*. Scapes subclavate, swollen underneath over the apical half. Face wide, shallowly excavated below, the upper margin of the excavation bounded by a sinuous barely raised line extending outwards from just above the antennal sockets to a little above the level of the middle of the eyes. The antennae inserted low down, almost as low as in *Miscophus*. Temples well developed,

much larger than in *Tachysphex*. Pronotum fairly long, not sunk much below the level of the mesonotum, with a distinct posterior dorsal face or collar. Pronotal tubercles nearer the tegulae than in *Tachysphex*. Mesopleurae without an episternal suture. Third cubital cell shorter on the cubitus than the second cubital cell, not linguat and produced outwards beyond the apex of the radial cell. Dorsum of epinotum wide and short. Pygidium moderately compressed laterally. Otherwise like *Tachysphex*.

Type of genus, *Atelosphex miscophoides*.

*A. miscophoides* n.sp. (Fig. 37 a, b, c).

♀, 6 mm. Head and thorax black, mandibles in the middle, palpi, tibiae, tarsi and apices of the femora flavo-ferruginous, the swollen portion of the scapes and the tegulae flavous. First and second abdominal segments ferruginous, the first black at the extreme base above, the third segment ferruginous or fusco-ferruginous, with the apical margin widely testaceous, the remaining segments piceous or dark reddish brown with testaceous apical margins.

Clypeus, face, temples and thorax with a rather coarse, oblique and not dense pubescence, pale silvery golden on the

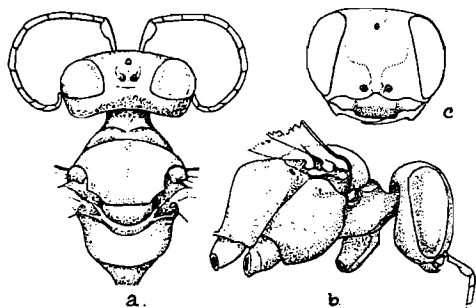


Fig. 37. *Atelosphex miscophoides*, ♀. a. dorsal, b. lateral view of head and thorax; c. head from in front.

clypeus, face and mesonotum, whitish or silvery elsewhere, longest on the posterior lateral margins of the declivity, and almost absent from the dorsum of the epinotum. Tergites with a very scanty, decumbent and microscopic pubescence, the first three with transverse apical bands of longer and silvery pubescence, interrupted in the middle. The ventral segments with a few exserted hairs on the apical margins, otherwise glabrous.

Head and thorax, excepting the epinotum, dull, closely punctured, the face and mesothorax strongly and deeply punctured, the clypeus finely, the temples and pronotum shallowly so. The depressed anterior half of the median area of the clypeus smooth and shining. The punctures on the mesonotum larger and more widely spaced than elsewhere; the metanotum dull and coriaceously punctate. Dorsum of epinotum strongly reticulate-rugose, the rugae near the base strengthened lengthwise, slightly shining between the rugae; the sides obliquely, the declivity transversely and closely striate, punctulate between the striae. Abdomen nitidulous, closely and sharply punctured above, more shallowly punctured below; the pygidial area shining, with a few large punctures. Median area of clypeus wider than long, sharply deflexed at the middle, its anterior margin convex and angular at the corners. Face between the eyes wide, resembling that of a *Miscophus*, the distance between the eyes across the clypeus being barely twice as long as across the vertex. The face is very shallowly excavated below, the brow of the excavation forming a sinuous, shining line on each side, extending from above the antennal sockets to about the level of the middle of the eyes. The interocular distance on the vertex is equal to the combined length of the first two joints of the flagellum plus half of the third. Antennae long and slender; the scape is swollen below on its apical half, the swelling translucent and vesicular. The scape is almost as long as the first two joints of the flagellum combined; the

first joint is a little longer than wide, the second twice as long as the first and a little shorter than the third, all the joints clearly longer than wide. The ocellar area is almost flat, not strongly swollen as in *Tachysphex*, the vertex behind it has a short and shallow transverse impression. Temples well developed, widening below, seen from the side wider at their widest point than the eyes. Pronotum fairly long, sunk very little below the level of the mesonotum, with a well developed collar posteriorly which is convex transversely and from front to back, rounded at the lateral angles and faintly impressed in the middle. Thorax robust and wide, the mesonotum at its widest is very little shorter than the length of the thorax from the pro-mesonotal suture to the apex of the epinotal dorsum. The latter is fairly flat, convex at the sides and behind, about two and a half times wider across the base than long. The declivity is vertical, with the usual deep and longitudinal sulcus in its upper half, its junction with the dorsum subrectangular. The abdomen is shaped as in *Tachysphex*, but the pygidium is laterally compressed below its dorsal area. The latter is elongate-triangular, a little longer than wide at the base, acute at the apex, feebly marginate at the sides. Legs feebly spinose, the spines whitish. Inner calcar of the hind tibia only a little more than half as long as the metatarsus. Claws and pulvilli small. Comb of the anterior tarsus composed of thin and not very long cilia, of which there are six widely spaced ones on the basal joint. Wings hyaline, tinged with fuscous, the veins and stigma brown. The radial cell is fairly widely truncate apically; the first abscissa of the radius is very little longer than the second, which is about one-fourth longer than the third. The third cubital cell is not quite twice as wide on the cubitus as it is on the radius.

Willowmore, C.P. (H. Brauns). December. Type in the R.M. coll.

#### TACHYTES Panzer

*Krit. Rev.* II, 129. 1806.

CHARACTERS. Build robust, often resembling in general appearance some of the solitary *Apidae*. The eyes reach the base of the mandibles, their inner margins convergent above. Head very short behind the eyes. Ocelli on a raised area, the anterior ocellus round and convex, the posterior flattened, elongate and more or less retort-shaped. Face without swellings parallel to the inner margins of the eyes. Mandibles excised on the lower margin (very feebly so in the subgenus *Holotachytes* Turner), bidentate on the inner margin near the middle. Maxillary palpi six-, labial palpi four-jointed as usual in the Larridae, but five- and three-jointed respectively in the subgenus *Calotachytes* Turner. Thorax similar to that of *Tachysphex*, but the epinotum is more rounded at the brow and from side to side than in that genus, and the dorsum of the epinotum usually has a median longitudinal impressed line which ends in a fovea at the apex, and the fovea is generally continued into the median sulcus of the declivity. A pygidial area present in both sexes, triangular in the ♀, trapezoidal in the ♂, nearly always densely covered with adpressed pubescence. Venation of the wings like that of *Tachysphex*. All the tibiae spinose. A tarsal comb present in both sexes, composed of stiff spines, but feebler in the ♂. The anterior femora of the ♂ entire, and with the outer side nearly always covered with a dense and exerted pubescence. Distribution, cosmopolitan.

The life history is like that of *Tachysphex*. Although so much like some of the solitary bees in general appearance, these insects when alive can hardly be mistaken for them since their flight and habits are very different. As their generic name implies, they are very quick in their movements and of a restless

disposition. Both the males and females are fond of resting in sunny situations, flying up at the slightest disturbance, only to return to the same spot a few moments later. The males will often rest on leaves and twigs of the plants which border the open sandy spots on which the females dig their burrows. In my experience, none of our species is common, or at any time plentiful.

The student will find this an exceedingly difficult genus. It is composed of an assemblage of very similar forms, most of which are closely allied. In many cases the differences between one species and another are fairly patent to the naked eye, but unfortunately these very differences are chiefly those of colour of the pubescence, and size and build. The size is variable, and the colour of the pubescence is not very reliable, since it fades with age even in the living insect. The sculpture is singularly uniform, and varies in the majority of the species within such narrow limits that, even with the aid of the magnifying glass, it is not easy to define in comparative terms.

One of the most valuable diagnostic characters lies in the form and length of the galea, the use of which we owe, I believe, to Turner. For this reason it is well to remember, when pinning the fresh insect, to separate the mandibles and to draw out the mouth parts so that they may be examined without difficulty. Another character on which Turner has laid some emphasis, is the number of spines on the basal joint of the anterior tarsus. Used alone, this character is quite unsafe, because some of the spines may break off during the digging operations of the insect. It might be supposed that the number of spines originally present would nevertheless be ascertainable by the recognition of the stump or point of insertion of the broken-off spines; this, however, is far from being the case, because when broken off close to the joint it leaves practically no distinct scar at all. Moreover, the number of spines is rarely the same in both sexes of a species. In some of Turner's types in the British Museum collection, the number of spines differs on the left and right tarsi.

The genital armature of the male would probably furnish useful diagnostic characters for that sex, but unfortunately would not help us in sexing the species correctly. The females, in my experience, are, more often than not, taken without accompanying males.

Turner's short monograph of the African species (*Ann. Mag. N.H.* xx, No. 115, pp. 1-43, 1917) is a valuable piece of work which brings together for the first time a fairly full account of all our species, the majority of which have been made known by Turner himself. I have examined all the types of Turner's species in the British Museum collection, and with the camera lucida taken measurements of the interocular distances in relation to the length of the flagellar joints, and also of the galea. The result of that examination was to show that Turner's paper contains several inaccuracies and has some notable omissions. These I propose to correct when dealing with the species in question. The descriptions of the earlier authors, especially of F. Smith, are well-nigh worthless, being based almost entirely on colour. I would have preferred to preface the descriptions of the species with an analytical key, as I have done for the preceding genera, but in order not to delay the publication of the second part of this monograph, the key will have to be printed in the next, since its construction will require a far greater comparative study of all the species than I have so far been able to give to it.

Since the mouth parts are of such importance in the determination of the species, it is essential to get a clear idea of their anatomy. Fig. 38 will, I hope, be helpful in that direction. It should be noted that the *galea* of Turner does not represent solely that member of the mouth parts but consists of the galea and the lacinia (outer and inner ridges of the anterior maxilla), fused into



one piece. In measurements of that part, care should be taken not to include the basal part of the anterior maxilla (marked *a* in Figs. 38 A and B).

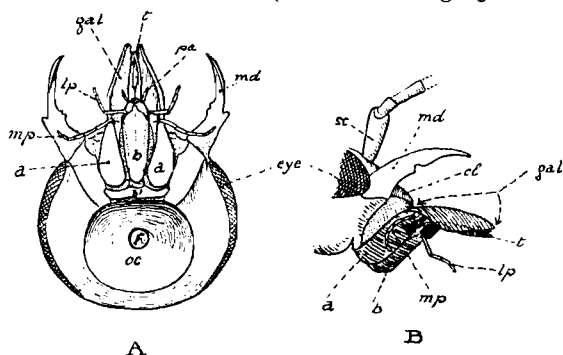


Fig. 38. Head and mouth parts of *Tachytes opposita*, ♂; A from below, B from the side. *md.* mandible; *cl.* clypeus; *mp.* maxillary palp; *lp.* labial palp; *t.* tongue (fused inner ridges or laciniae of the posterior maxilla); *pa.* paraglossae (outer ridges of the posterior maxilla); *gal.* "galea" (fused inner and outer ridges of the anterior maxilla); *a.* basal piece of the anterior maxilla (stipes and palpiger fused, with perhaps also the cardo); *b.* mentum; *b'.* submentum; *oc.* occipital cavity; *f.* foramen; *sc.* scape. The membranous areas are shown dotted.

Turner has divided the genus into the following subgenera, *Tachytes* Panzer s.str., *Holotachytes* Turner and *Calotachytes* Turner.

#### Subgenus HOLOTACHYTES Turner

*Ann. Mag. N.H.* xx, No. 115, p. 10. 1917.

CHARACTERS. "Differs from typical *Tachytes* in the absence of the incision on the outer margin of the mandibles<sup>1</sup>, in the striation of the dorsal surface of the median segment (i.e. epinotum), and also in the longer and more rectangular shape of that segment.

Type of the subgenus *T. dichroa* Smith.

Unlike *Calotachytes* this subgenus has the galea short and broadly rounded at the apex, not rostrate; and the joints of the labial palpi are short and stout."

*T. dichroa* Smith. *Cat. Hymen. Brit. Mus.* iv, 299, ♂. 1856.

(*Larrada ferox*) Smith. *Ann. Mag. N.H.* (4), xii, p. 294, ♀. 1873.

This is a West African species which is unlikely to occur within our limits.

#### Subgenus CALOTACHYTES Turner

*Loc. cit.* p. 10.

CHARACTERS. "Distinguished by the five-jointed maxillary and the three-jointed labial palpi, other species of the genus having six-jointed maxillary and four-jointed labial palpi. The basal joint of the labial palpi is extremely long and slender, much longer than the second joint of the flagellum, and the galea is very elongate. These two characters, however, are also present in *observabilis* Kohl, *velox* Smith and other related species. I look on the difference in the number of the joints in the palpi as of subgeneric importance. The known species are confined to the Ethiopian region and are of large size, and have at least the four basal dorsal segments densely covered with golden or silver pubescence. The second sternite of the female is shining, with large sparse punctures.

<sup>1</sup> This statement is incorrect. Mr Turner has informed me, *in litt.*, that the mandibles are very feebly excised.

Type of the subgenus *Tachytes Marshalli* Turner."

Originally Turner included in this subgenus *T. mira* of Kohl, but subsequently he was able to examine the type of Kohl's species in the collection of Dr Brauns. As a result of that examination it became clear that Kohl's species was a *Tachytes* s.str. and that the species on which he had based his former conclusions was something different (Turner, in litt.). The latter species will require a new name.

*T. (Calotachytes) Marshalli* Turner. *Ann. Mag. N.H.* (8), 1x, No. 52, p. 420, ♀, ♂. 1912.

"♀. Nigra; albo-pilosa; abdomine sericeo, segmentis dorsalibus 1-4 fascia lata apicali argenteo-pilosa; alis fusco-hyalinis, venis fuscis; area pygidiali fulvo-setosa. Long. 22 mm."

"♀. Clypeus broadly subtruncate at the apex. Eyes strongly divergent towards the clypeus, separated on the vertex by a distance equal to the length of the second joint of the flagellum, which is equal to the third joint. Basal joint of the fore tarsi with seven rather stout spines. Thorax very finely and closely punctured, median segment a little more sparsely punctured. Four basal dorsal segments of the abdomen covered with short silvery pubescence, which is much closer and more shining on a broad band on the apex of each segment. Pygidial area rugosely punctured and clothed with short fulvous setae, narrowly rounded at the apex and nearly twice as long as the basal breadth. Spines of the tibiae and tarsi testaceous brown. Third abscissa of the radius a little longer than the second, but a little shorter than the first; third cubital cell less than half as long as the second on the cubitus; the distance between the recurrent nervures on the cubitus is about equal to the length of the second abscissa of the radius. The radial nervure is thickened at the base.

♂. As in the female, but the pygidial area is nearly as broad at the base as long, broadly rounded at the apex, and the third cubital cell is rather longer both on the radius and the cubitus.

Hab. Salisbury, Mashonaland. April (G. A. K. Marshall); Lilongwe dist. Central Angoniland, 4000-5000 ft.; Nyasaland, between Rukuru Valley and Florence Bay, 4500 ft. June (S. A. Neave)."

The following notes are based on an examination of the specimens in the British Museum collection.

♀. Type 22 mm. long; another ♀, 24.5 mm. The pubescence on the face and temples is silvery. The pygidial setae are dark fulvous, and the spines on the legs are ferruginous. In one specimen the silvery pubescence of the abdomen is tinged with golden. In the type, the basal joint of the fore tarsus has seven spines on one leg, and only six on the other. The interocular distance on the vertex is greater than stated in Turner's description, being equal to the combined length of the first and second joints of the flagellum. The vertex is sparsely and shallowly punctured in addition to the fundamental fine and dull sculpture. Ventral segments shining, with pre-apical rows of coarse punctures, the apical ventral segment closely and coarsely rugosopunctate.

♂. 20.5 mm. The first three sternites are clothed with a sparse cinereous pubescence. The interocular distance on the vertex is barely equal to the second joint of the flagellum. The apex of the eighth sternite is pilose, arcuately emarginate, the angles roundly dentiform. The galea is much longer than the scape (Salisbury). In a ♂ from Nyassaland the anterior metatarsus has five spines, but in the Salisbury specimen the metatarsus is not clearly visible. The seventh tergite is coarsely punctured and widely rounded.

*T. (Calotachytes) admirabilis* Turner. *Ann. Mag. N.H.* (8) xvii, No. 102, p. 444, ♀, ♂. 1916.

"♀. Nigra; fronte argenteo-pubescente, abdomine segmentis dorsalibus aureo-pubescentibus, area pygidiali fusco-aureo-setosa; alis anticis infuscatis, posticis subhyalinis, venis nigris. Long. 23 mm."

"♀. Clypeus scarcely convex, the apical margin almost transverse, very finely and closely punctured, clothed with short silver pubescence, slightly deflexed from the middle to the apex. Eyes separated on the vertex by a distance nearly equal to the combined length of the two basal joints of the flagellum; second joint of the flagellum distinctly longer than the third. Median segment more than half as long again as the scutellum, with a very obscure impressed median line; the posterior slope rather indistinctly transversely striated, with a deep median sulcus; pubescence of the thorax and median segment greyish and very sparse.

Dorsal surface of the abdomen densely covered with golden pubescence, which is denser and brighter on the apical than on the basal half of the segments; apical half of the fifth dorsal segment and basal half of the first without golden pubescence. Pygidial area elongate, very narrowly rounded at the apex, densely clothed with short setae, which change according to the light from fulvous-gold to black. Second ventral segment shining, with sparse and fairly large punctures. Basal joint of the fore tarsus with six spines. Second abscissa of the radius a little longer than the third, both being distinctly longer than the space between the two recurrent nervures.

Hab. Uganda (various localities). August.

This is very near *T. mira* Kohl, but differs in the dark fore wings, in the distinctly greater distance between the eyes on the vertex, in the coarser pubescence of the pygidial area (this area being also rather narrower at the apex), and in the greater size. The male of this species differs from the male of *mira* in the infuscate fore wings, in the shape of the seventh dorsal segment, which is truncate at the apex, not very broadly rounded as in *mira* (this segment in both species is very broad, not narrow as in *observabilis* Kohl); the eighth ventral segment is much more shallowly emarginate, with shorter teeth at the apical angles than in *mira*."

This species is very much like *T. Danaë (mira)* Turner, nec Kohl but is larger and the golden pubescence of the abdomen has a more fulvous tint. Turner is in error in regard to the interocular distance on the vertex; it is equal to the length of the second joint of the flagellum, and not to that of the first and second. The galea is much longer than the scape. Ventral segments shining, with large pre-apical punctures. Wings distinctly darker than in *Danaë*.

♂. Anterior metatarsus with five spines. Interocular distance on the vertex equal to about two-thirds of the length of the second joint of the flagellum, and less than twice the length of the first. Eighth sternite as in *Danaë*. Thorax, especially the epinotum above, a shade more strongly punctured, but otherwise almost indistinguishable from the ♂ of *Danaë*. The latter is hardly more than a race of *admirabilis*.

*T. (Calotachytes) Danaë* n.nov. *T. mira* Turner, nec Kohl.

♀. 18-20 mm. Black, apical margins of ventral segments narrowly fusco-ferruginous. Spines on the legs ferruginous. Pilosity on the temples white, on the thorax dirty white and scanty. Abdomen with the usual dense golden pubescence, pygidial area covered with reddish golden setae; apical margins of the ventral, and of the last three dorsal segments with a few long and thick reddish hairs. Pubescence of face and clypeus pale yellowish white. Vertex

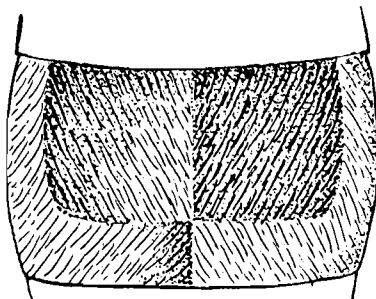
sparsely and coarsely punctured. Interocular distance on the vertex about equal to the length of the first two joints of the flagellum. Galea much longer than the scape. Anterior margin of the clypeus arcuate. Thorax closely punctured, the epinotum more strongly so than the rest, the sides of the epinotum longitudinally, and the declivity transversely, striate. Anterior metatarsi with six spines. Wings pale fusco-hyaline, slightly darker on the apical margin.

♂. 17-18 mm. Pilosity and pubescence of the face and thorax more yellowish and longer than in the ♀. The interocular distance on the vertex slightly less than the length of the second joint of the flagellum. Punctuation of the vertex shallower than in the ♀. Ventral surface of the abdomen shining, shallowly and fairly closely punctured. Pygidial setae golden. Seventh tergite broadly rounded, eighth sternite arcuately emarginate, the angles forming rounded teeth. Anterior metatarsus with five spines.

Nyasaland; Salisbury, S.R.

#### Subgenus TACHYTES Panzer s.str.

This subgenus may be divided into several groups, of which the first, the *basilica* group, is composed of large species having the greater part of the tergites covered with a dense and brilliant golden pubescence. This pubescence has a somewhat chequered appearance (as in *Liris haemorrhoidalis* and some other Larrids), owing to the hairs on the basal half or more of each side of the segment being turned in opposite directions, and similarly on the apical margins of each side. The direction of the hairs on the apical and basal parts of each half segment is also opposed (see diagram). The light is reflected in opposite directions by these areas, hence when in a certain position, one area will appear dark when the adjacent one is bright, and *vice-versa*.



The *basilica* group includes the following species: *basilica* Guerin, *velox* Smith, *mira* Kohl, *observabilis* Kohl, *Neavei* Turner, *perornata* Turner and *rhodesiana* Bischoff.

*T. observabilis* Kohl. *Ann. K.K.N.H. Mus. Wien*, ix, p. 295, ♂. 1894.

♀, 20 mm. Black, the last two tarsal joints brown. Clypeus, face and temples with long greyish silvery pubescence, on the upper face almost outstanding. Thorax and basal half of first tergite with yellowish grey pilosity; outstanding, longest and most abundant on the epinotum. Anterior femora below with greyish silvery pubescence intermixed with longer and outstanding hairs, the rest of the legs with a short, dense and adpressed yellowish pubescence. Abdomen above clothed with dark golden (almost fulvous-golden) pubescence. The fifth tergite has an arcuate row of stiff and exserted hairs a little behind the apical margin, and there are a few such hairs on the sides of the fourth. The pygidial area is covered with a dense, decumbent and fulvous-golden pubescence. The golden pubescence is absent from the declivous base of the first tergite. The first two sternites are dull, closely and finely punctured, the remaining segments shining, sparsely and strongly punctured, the apical ventral segment very finely punctured on its basal half, and very coarsely so on its apical half. The second to fifth sternites with a

pre-apical row of reddish yellow hairs. Head and thorax dull, closely and very finely punctured, the punctures larger and more distantly spaced on the mesonotum and scutellum than elsewhere.

First joint of the labial palpi nearly twice as long as the second. Anterior margin of the clypeus convex. The scape as long as the first two joints of the flagellum taken together. The second joint of the flagellum barely longer than the third, nearly three times longer than the first. The interocular distance on the vertex is equal to the length of the second joint of the flagellum. Mesonotum two and a half times longer than the scutellum, the dorsum of the epinotum as long as the combined length of the scutellum and metanotum. Pygidial area elongate-triangular, the apex narrowly rounded. Spines on the legs fulvous, the anterior metatarsus with six spines on the outer margin. Wings dirty hyaline, with a narrow, pale fuscous apical margin, the veins reddish brown.

♂, 16.5–18 mm. Pubescence of abdomen paler than in the ♀. Punctuation of the thorax, especially the epinotum, a little stronger than in the ♀. Interocular distance on the vertex equal to about half the length of the second joint of the flagellum. Abdominal segments below with a thin, reddish golden pubescence on the apical margins, the second sternite with a thin, whitish and exerted pilosity. Pubescence of the pygidial area of the same colour as the other dorsal segments, the pygidial area more widely rounded at the apex than in the ♀. All the sternites moderately shining, sparsely and fairly finely punctured, the second less strongly than the others. Anterior femora outwardly, and the middle femora behind, with pale yellowish and dense pilosity. Otherwise like the ♀.

Zanzibar (Brauns); Nyasaland; Bulawayo, S.R.; Uganda, Kenya Colony and Angola. (R.M. and T.M. colls.)

*T. rhodesiana* Bischoff (Fig. 39). *Archiv f. Naturges.* p. 70, ♀. 1913.

♀, 17.5 mm. Very similar to *observabilis*, but with the abdominal pubescence of a paler golden colour, and the pilosity on the face, femora and thorax longer and of a more yellowish tinge.

The sculpture and proportions of the thorax hardly differ from those of *observabilis*, but the epinotum has larger, though very shallow, punctures. The apical margins of the abdominal segments are distinctly and fairly widely ferruginous (only narrowly so in *observabilis*) and the apical ventral segment is only finely punctured. The median area of the clypeus is slightly produced, its anterior margin emarginate in the middle and ending on each side in three short teeth. The interocular distance on the vertex is considerably greater than in *observabilis*, being very nearly as long as the combined length of the first two joints of the flagellum. The second joint of the latter is one-third longer than the third. The pygidial area has denser pubescence than in *observabilis*, and is of the same colour as the rest of the abdominal pubescence.

The anterior tibiae have spines on the outer margin which are fully as long as those of the tarsal comb (shorter in *observabilis*) and the first tarsal joint has a row of five long spines (not six, as stated in Turner's key to the African species). The galea is much shorter than the scape, and the first joint of the labial palp is only about one-third longer than the second joint.

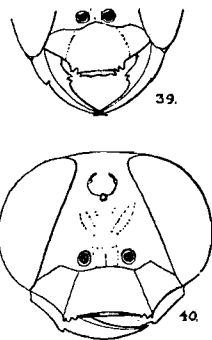


Fig. 39. *Tachytes rhodesiana*, ♀, clypeus.

Fig. 40. *Tachytes nigropilosella*, ♀, head.

♂, 18 mm. Pubescence on the abdomen of a more reddish golden tinge than in the ♀. Median area of the clypeus nitidulous, irregularly and fairly strongly punctured, the median emargination shallower, and the lateral teeth smaller than in the ♀. The interocular distance on the vertex the same as in the ♀. The apical dorsal segment of the abdomen wider than long, more widely rounded at the apex than in the ♀. The eighth ventral plate arcuately and shallowly emarginate, the angles on each side of the emargination rounded. Ventral segments of the abdomen moderately shining, coarsely and more closely punctured than in the ♀. Tarsal comb as in the ♀, but with shorter spines.

Springvale, S.R. April, ♀, type; Bulawayo, ♂, March. Type in the R.M. coll.

*T. Neavei* Turner. *Ann. Mag. N.H.* xx, No. 115, p. 13, ♂. 1917.

♂. 15-18 mm. Colour of the head and thorax like that of *observabilis*, but the tarsi and the hind tibiae inwardly are fusco-ferruginous. Mandibles piceous. Flagellum, excepting the last four joints, fusco-ferruginous below. Apical margins of the abdominal segments narrowly reddish brown below, widely so above, the second to fifth and the seventh almost entirely reddish brown above. Wings hyaline, with a narrow pale fuscous apical margin, the veins fusco-ferruginous. Pilosity and pubescence like that of *observabilis*, but the pilosity on the thorax is somewhat shorter, and the margins of the mesonotum have a short, adpressed and scanty pubescence in addition. The pubescence of the abdomen is a little darker than in *observabilis*, or brownish golden. The sculpture is like that of *observabilis*.

Anterior margin of the clypeus convex. Second joint of the flagellum one-fourth longer than the third, about two and a quarter times longer than the first. The third to seventh joints distinctly arcuate below. Interocular distance on the vertex not greater than the length of the first joint of the flagellum. The scutellum somewhat gibbous. Second sternite closely and finely punctured, more strongly in the middle than at the sides, the third and following sternites moderately shining and fairly coarsely punctured. Seventh tergite broad, the apex widely rounded, closely punctured, clothed with pale golden pubescence; eighth sternite very shallowly emarginate at the apex (type of the species) or transverse.

Third abscissa of the radius a little longer than the second, and about as long as the first.

Lualaba River. May (S.A. Neave); Victoria Falls, January. The two specimens from the latter locality differ from the type only in having the apex of the eighth sternite transverse, and in the third and following sternites slightly more shining.

*T. velox* Smith. *Cat. Hymen. Brit. Mus.* iv, p. 301. 1856. Turner, *loc. cit.* p. 13, ♀, ♂.

“♀. Closely resembles *T. basilica* with which it occurs; but the antennae are black; the abdominal segments are black, very narrowly brown on the apical margins, and the legs are black with the apical joints of the tarsi fusco-ferruginous. Eyes separated on the vertex by a distance equal to the length of the two basal joints of the flagellum; median segment less than two-thirds as long as the mesonotum; second sternite shining, with large scattered punctures.

♂. Eyes separated on the vertex by a distance slightly exceeding three-quarters of the length of the second joint of the flagellum; clypeus very broadly rounded at the apex. Apical tergites and sternites as in *basilica*. Second ventral segment finely and closely punctured. The pubescence of the abdomen is paler than in *observabilis*.

Hab. Gambia (Smith); N. Nigeria, Zungeru (J. W. Scott-Macfie) ♀.

The median segment is shorter than in *basilica* and *observabilis*, and the eyes are further apart on the vertex. The third and fourth joints of the flagellum are slightly arcuate beneath in the ♂.

To the description by Turner quoted above, the following notes, made by myself from an examination of the type and of the female in the British Museum collection, may be added.

♂ (type) 14.3 mm. Pubescence of face and clypeus, thorax and the declivous base of the first tergite, dirty white. Vertex coriaceous, not distinctly punctured. Ventral segments shining, sparsely punctured, the second more closely punctured and duller at the base, the fifth to eighth closely and finely punctured, the fifth and sixth fairly densely pubescent. Wings tinged with ochreous, the veins brown. In a specimen from N. Nigeria, the pubescence on the temples is silvery, and on the abdomen deep golden, quite as dark as in the other species of the group.

♀. 21.5 mm. (specimen from Zungeru). This ♀ has the apical margins of the sternites bright ferruginous. The second sternite is shining and coarsely punctured pre-apically like the rest, the last segment strongly punctured at the apex. The pubescence above is paler golden than in *observabilis*; the vertex is closely, finely and shallowly punctured. The basal joint of the anterior tarsus has six spines, as in the ♂. Galea much longer than the scape.

The ♂ has the third to fifth joints of the flagellum arcuate below, and the fourth to seventh have a narrow ferruginous streak below. The median segment or epinotum is slightly shorter than the scutellum and metanotum taken together; the last tergite and sternite are rounded apically.

*T. perornata* Turner. *Loc. cit.* p. 14, ♂.

"♂. Niger, mandibulis in medio, tegulis apice, calcaribus unguiculisque fusco-ferrugineis; alis subhyalinis, venis fuscis; capite albo-piloso, thorace griseo-piloso, segmentis abdominalibus apice anguste brunneis, segmentis dorsalibus dense aureo-pubescentibus; segmento ventrali octavo apice fortiter emarginato. Long. 16 mm."

"♂. Eyes separated on the vertex by a distance slightly exceeding three-quarters of the length of the second joint of the flagellum; clypeus broadly rounded at the apex; maxillary palpi six-jointed; labial palpi four-jointed, the two basal joints long and slender, the second about equal in length to the second joint of the flagellum, the first longer. Punctuation of the vertex indistinct. Median segment nearly twice as long as the scutellum. Second sternite shining and rather strongly punctured in the middle, much more finely and closely at the sides. Seventh tergite rather broad, subtruncate broadly at the apex; eighth sternite widely and rather deeply emarginate, the apical angles produced.

Hab. Uganda.... This is near *velox*, but has the seventh tergite broader, and the eighth sternite very different. The eyes are much further apart on the vertex than in *observabilis* or *Neavei*."

The apical angles of the eighth sternite, although produced, are blunted apically. The anterior tarsus has apparently six spines on the basal joint, but legs are turned inwards and not easily examined in the specimen in the B.M. coll.

*T. basilica* Guerin (*Lyrops basilicus*). *Iconogr. regn. anim.* VII, 440. 1844.

Turner, *loc. cit.* p. 11, ♀, ♂.

"♀. Nigra; abdomine brunneo-ferrugineo, infra nigro intaminato; segmentis dorsalibus aureo-pubescentibus, pygidio aureo pubescente; mandibulis, antennis, femoribus apice, tibiis tarsisque fusco-ferrugineis; tegulis brunneis; alis subhyalinis, venis fuscis, apice leviter infuscatis.

♂. Feminae similis. Long. ♀ 20 mm., ♂ 18 mm."

“♀. Clypeus broadly subtruncate at the apex. Eyes separated on the vertex by a distance not quite equal to the length of the second joint of the flagellum. Front clothed with silver-white pubescence. Thorax sparsely, median segment more thickly clothed with greyish pubescence; the punctures of the mesonotum minute and not distinctly separated; median segment nearly as long as the mesonotum, narrowed to the apex, with an ill-defined longitudinal sulcus. Second sternite subopaque, minutely and closely punctured, with a shining subtriangular space on the middle of the apical margin. Pygidial area triangular, narrowly rounded at the apex. Basal joint of fore tarsi with six spines. First and third abscissae of the radius subequal, each nearly twice as long as the second, and nearly half as long again as the space between the recurrent nervures on the cubitus. Third cubital cell on the cubitus extending a little beyond the apex of the radial cell.

♂. Eyes separated on the vertex by a distance not quite equal to half the length of the second joint of the flagellum; punctures of the second sternite distinctly larger than in the female; seventh tergite subtriangular, rounded at the apex.

Hab. Senegal and N. Nigeria.

This species is unlikely to occur in our region. The ♂ has six metatarsal spines. The mesonotum and pleurae are covered with a fairly dense and somewhat tomentose silvery pubescence. The galea is nearly twice as long as the scape. In the ♀ the bases of the abdominal segments are narrowly blackish. The inner face of the femora dark ferruginous. The pubescence on the mesonotum and pleurae of the sole ♀ example in the B.M. coll. is almost obsolete—possibly rubbed off.

*T. mira* Kohl. *Ann. K.K.N.H. Mus. Wien*, IX, 295, ♀. 1894.

♀. 20 mm. Except that the anterior metatarsus has six to seven spines, and the much shorter pygidial area, there is nothing to distinguish this form from *observabilis* ♀. The type is in Dr Brauns' collection, and was taken at Delagoa Bay.

*Natalensis* group. This group is characterised by the dark wings and black body, and contains the following species: *natalensis* Saussure; *nigropilosella* Cameron; *memnon* Turner and *moerens* Turner.

*T. nigropilosella* Cameron (Fig. 40). (*Liris*). *Ann. Transvaal Mus.* II, 132. 1910. (*T. gigas*) Bischoff. *Arch. f. Naturges.* III, 66, ♀. 1913.

♀. 23 mm. Black, apical joint of the flagellum rusty brown. Wings dark brown, with a strong steely-blue lustre, the veins black. Clypeus, face, lower surface of the scapes, anterior and middle femora, and basal half of the first tergite with a long, outstanding and black pilosity, longest and most dense on the sides of the thorax and on the epinotum, very short on the mesonotum, scutellum and metanotum. Abdomen with a very fine, adpressed and blackish pubescence, the sides and apical margins of the last three segments with a few long, outstanding, stiff, and black hairs. Legs densely pubescent, the pubescence black except on the inner sides of the posterior tibiae where it is rusty brown. Pygidial area with a coarse and dark reddish brown pubescence. Head dull, closely and finely punctured, the middle of the vertex more coarsely and more sparsely punctured. Mesonotum and scutellum closely and finely punctured and dull on the margins, more strongly and less closely punctured and slightly shining in the middle. Metanotum dull, finely punctured. Epinotum dull, the declivity transversely striate, the sides and outer halves of the dorsum closely rugulose, the inner part of the dorsum with large and small punctures intermixed. Dorsal surface of the abdomen slightly shining and very finely and closely punctured, the first two sternites also so, but dull, the remaining sternites shining, sparsely and fairly strongly punctured and with



a row of much larger punctures bordering the triangularly depressed apical margins.

Median area of clypeus trapezoidal, its anterior margin transverse and furnished with three short teeth on each side. Galea about as long as the scape. Second joint of the flagellum a little longer than the third, two and a half times longer than the first. The interocular distance on the vertex is equal to the combined length of the first and second joints of the flagellum. Temples well developed, seen from the side about half as wide as the eyes. Mesonotum with three longitudinal raised lines in front, which do not reach the middle of the segment. Dorsum of epinotum as long as the mesonotum and longer than its declivity, with a deeply impressed median longitudinal line which ends at the brow of the declivity in a small dentiform tubercle. Pygidial area a little longer than wide at the base, the apex rounded. Spines on the legs black, the anterior metatarsus with six short spines. Second and third abscissae of the radius subequal, each a little longer than the first, and about one-third longer than the space on the cubitus between the recurrent veins.

♂. 20 mm. Teeth on the clypeus smaller than in the ♀. All the sternites closely and fairly strongly punctured and dull. The apical sternite arcuately emarginate, the lateral angles subacute but not dentiform. Pygidium widely rounded at the apex. Otherwise like the ♀.

Bulawayo, Salisbury and Hope Fountain, S.R. December to February, Natal (R.M. coll.).

*T. natalensis* Saussure. *Mem. Soc. phys. et hist. nat. Genève*, XIV, 21, ♂. 1854.

Turner. *Ann. Mag. N.H.* XX, No. 115, p. 15, ♀, ♂. 1917.

♀. 15.2 mm. Black, last three joints of the anterior tarsi, and last joints of the middle and hind tarsi, ferruginous. Mandibles ferruginous in the middle. Tegulae brownish. Face and clypeus clothed with silvery pubescence. Head and thorax dull, finely and closely reticulate-punctate; the declivity of the epinotum transversely striate. Abdomen shining, almost glabrous, very finely but distinctly punctured above; all the sternites closely punctured at the sides, less closely in the middle, the median portion of the apical margins almost impunctate. Pygidial area subtriangular, narrowly truncate at the apex, a little longer than wide at the base, clothed with golden setae which change to blackish when viewed obliquely from the sides. Anterior margin of clypeus convex, with a row of large punctures behind it. Interocular distance on the vertex equal to a little more than the combined length of the first two joints of the flagellum. The second joint of the latter is barely longer than the third. Epinotum nearly as long as the mesonotum, the dorsum with a shallow impressed line over its apical fourth. Basal joint of the anterior tarsi with five spines.

♂. 14 mm. The interocular distance on the vertex is a little shorter than in the ♀. The seventh tergite is widely truncate at the apex, and the eighth sternite is arcuately emarginate, the lateral angles not dentiform. Otherwise like the ♀.

Durban, Natal. April.

*T. memnon* Turner. *Ann. Mag. N.H.* (8) XVII, 446, ♀. 1916.

"♀. Nigra; clypeo, fronte genisque aureo-pilosis; flagello articulis duobus basalibus scapoque ferrugineis; tibiis tarsisque anticis, femoribusque anticis apice brunneo-ferrugineis; alis nigris, caeruleo-tinctis; tegulis brunneis. Long. 18 mm."

"♀. Clypeus very broadly rounded at the apex, almost transverse, the apical margin narrowly transversely depressed, with two small teeth on each side, finely and rather closely punctured. Second joint of the flagellum as long as the first and third combined; eyes separated on the vertex by a

distance equal to the length of the second joint of the flagellum; an obscure longitudinal sulcus on the vertex behind the posterior ocelli. Pubescence of the thorax, median segment and abdomen, blackish; the median segment about half as long again as the scutellum, with a very obscure median line. Abdomen microscopically punctured, subopaque, the pubescence on the dorsal surface black, a little closer on the apical than on the basal portion of the segments. Sixth dorsal segment rather broadly rounded at the apex, clothed with stiff black hairs. Second ventral segment closely and evenly punctured, the apical margin almost smooth. Basal joint of the fore tarsus with five spines on the outer margin. Second abscissa of the radius shorter than the third, equal to the distance between the two recurrent nervures.

Hab. Mlanje, Nyasaland. April (S. A. Neave)."

The following additional notes are based on an examination of the type.

The golden pubescence present on the clypeus, face and temples is also present on the collar of the pronotum. The vertex is covered with brown hairs. The abdomen has a very short, greyish black pile, not unlike that of *Noto-gonidea sepulchralis*, but less conspicuous. The third to fifth sternites are much less punctured than in *natalensis*, especially in the middle basally. The clypeus has three teeth on each side, and not two as stated in Turner's description. The interocular distance on the vertex is equal to a little more than the length of the second joint of the flagellum, in fact, to the second plus half the first. The metatarsal spines are ferruginous, those on the other legs are black.

*T. moerens* Turner. *Ann. Mag. N.H.* xx, No. 115, p. 21, ♀. 1917.

"♀. Nigra, albo-pilosa; calcaribus spinisque tarsorum ferrugineis, fronte clypeoque albido-pilosis; segmentis dorsalibus 4 fascia apicali interrupta argenteo-pubescente, area pygidiali basi fusco, apice aureo-setosa; alis fuscis, venis nigris. Long. 17-20 mm."

"♀. Clypeus clothed with long silver hairs, which change to dull brown in some lights; the extreme apical margin narrowly depressed, subemarginate at the extreme apex, with three rather ill-defined teeth on each side. Lower part of the front clothed with long silver hairs as on the clypeus; vertex very distinctly and rather sparsely punctured. Eyes separated on the vertex by a distance equal to the combined length of the two basal joints of the flagellum; antennae short and stout. Thorax minutely and very closely punctured, the punctures distinctly separated, median segment more closely punctured, the pubescence cinereous. Abdomen shining, the dorsal surface closely and minutely punctured; the fifth segment more distinctly punctured, the apical margin arcuately depressed, with a few long fuscous hairs at the base of the depression. Second sternite rather sparsely and not very finely punctured, shining. Pygidial area clothed with fuscous setae, which change to reddish gold in some lights, especially at the apex; triangular, narrowly rounded at the apex. Basal joint of the fore tarsus with six spines. Third cubital cell extending distinctly beyond the apex of the radial cell; third abscissa of the radius a little longer than the second, but shorter than the first.

Hab. Nyasaland, Mlanje (S. A. Neave). December.

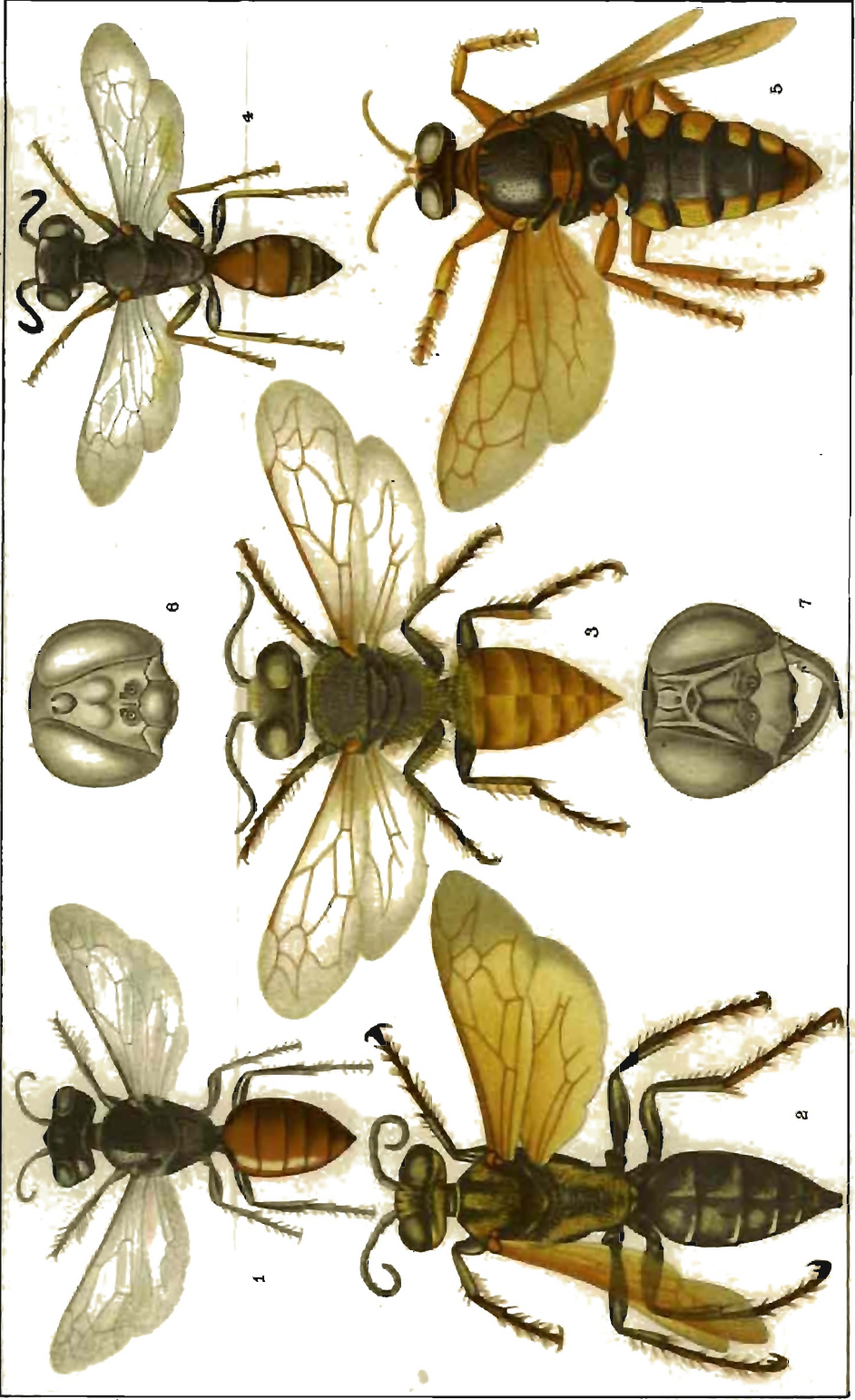
Superficially rather like *T. Marshalli* Turner, but the second sternite is much more closely and finely punctured, the silver pubescence on the abdomen is not nearly so extensive, and the third cubital cell is much longer on the cubitus. But *Marshalli* belongs to the group with elongate palpi."

The interrupted apical silvery bands on the abdominal segments distinguish this species from the others of the *natalensis* group, and the dark wings from species of other groups. The galea in this species is not longer than the scape.

## EXPLANATION OF PLATE

### PLATE V.

- Fig. 1. *Prosopigastra Neavei*, Turner. ♀. × ca 6.  
Fig. 2. *Notogonidea croesus*, Smith. ♀. × 3.  
Fig. 3. *Tachytes rhodesiana*, Bischoff. ♀. × 3.  
Fig. 4. *Gastrosericus Braunsi*, Arnold. ♀. × 6.  
Fig. 5. *Palarus Pentheri*, Brauns. ♀. × 3.  
Fig. 6. *Tachysphex Panzeri*, v. *dolosus*, Arnold. ♀ head. × 6.  
Fig. 7. *Liris diabolica*, Smith. ♀ head. ×  $4\frac{1}{2}$ .



G. Arnold pinxit.

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