

THE SPHEGIDAE OF SOUTH AFRICA

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With 1 Plate and 42 Text-figures

PART XIII

Genus BEMBEX Fab.

(Bembyx) Syst. Ent. p. 361. 1775.

GENERAL CHARACTERS. Head wide, wider than the thorax, vertically truncate behind or nearly so, the upper occipital margin lying just behind the eyes. The temples are therefore very narrow or obsolete above, but become wider below. Cheeks obsolete, the eyes almost touching the base of the mandibles. Face usually carinate between the antennal sockets. Inner margins of the eyes parallel, or divergent below, or slightly divergent both above and below, rarely convergent below. Anterior ocellus transversely arcuate, flattened and linear; the posterior ocelli elongate and flattened, somewhat sunk below the surface. The ocellar area, except in a few species, is raised or subtuberculate in the middle and is separated from the sides of the vertex by a more or less deep depression on each side. Mandibles not excised on the outer margin, with one or two teeth on the inner, the apex simple. Maxillae very long, their palpi 4-jointed; the labial palpi 2-jointed. Tongue and paraglossae very long. Labrum exserted, snout-shaped, much longer than wide, the apex angularly excised. Clypeus very convex, wider than long. Antennae filiform in the ♀; in the ♂ some of the apical joints are nearly always abnormal, being widened and excavated below or armed with one or two minute teeth or spines on the posterior margin below. Pronotum discoid, linear above, sunk below the level of the mesonotum. The mesopleurae lack an epicnemium and the episternal suture is obsolete. The epimerum of the mesopleurae is nearly always distinctly defined all round. Epinotum short, roundly truncate behind, the median triangular area of the dorsum well-defined, wide and continued far over on to the declivity. Six abdominal segments in the ♀, the sixth tergite more or less triangular, fringed at the sides with very short setae, without a marginate pygidial area. In the ♂ seven dorsal and ventral segments are visible, the second and sixth sternites often armed with carinae or tubercles, the seventh simple or carinate, often largely hidden by the ventral flaps of the seventh tergite, the eighth sternite always hidden by the seventh and nearly always ending in a single spine. Middle coxae separated. Trochanters small. The anterior tarsi with a distinct comb, composed of long spines which are sometimes flattened or lanceolate. Middle tibiae with one or two spurs, sometimes produced on the outside at the apex into a stout point. The fore and middle femora, more especially the latter, are sometimes dentate or serrate on the posterior lower margin. Tibiae and tarsi spinose. Wings usually rather short.

Fore wing: three cubital cells present, the second receiving both recurrent veins, the first as large as the second and third united; the second narrowed above and never stalked on the radius; radial cell long, rounded at the apex, the basal vein arises just before the end of the submedial cell or is interstitial with the cross-vein and meets the subcosta at a considerable distance from the pterostigma; the latter is small.

Hind wing: the retinaculum is complete and arises near the origin of the radius; the latter is long and nearly reaches the apical margin of the wing; the cubitus arises beyond the end of the submedial cell; the submedial vein extends to the anal sinus; the basal lobe is elongate and oval.

DISTRIBUTION. Both hemispheres.

The prey consists of Diptera and in many species, if not in all, the nests are kept open, the larvae being provided with fresh food day by day. The nests are nearly always made in soft ground, chiefly loose sand.

The sculpture generally consists of an even and shallow semi-punctuation on the thorax and tergites, whereas the punctures on the sternites are usually round. The nature of the punctuation on the dorsum of the thorax and on the sternites is of some diagnostic value, but that of the face and vertex, usually very fine and close, and of the tergites is too uniform, and therefore not taken very much into consideration in the following descriptions. The coloration conforms to a particular pattern in each species but is liable to a certain amount of variation, more particularly on the dorsum of the thorax and on the abdomen. It is not easy to give a concise and at the same time an accurate description of the colour pattern of the tergites, and I have therefore, whenever possible, figured the commonest or average pattern in Plate VI.

The genus was monographed by Handlirsch in the *Sitzungsber. K. Akad. Wiss. Wien*, CII, 1893. This work is of fundamental importance, since previously the descriptions of other authors were based chiefly on colour, instead of structural characters. Valuable as it is, Handlirsch's work would have been more helpful to the student if it had been arranged in a different form. In his diagnoses of groups and descriptions of species the tabulation of structural characters which are *not* present is as unnecessary as it is confusing. It may reasonably be assumed that, unless there is a statement to the contrary, the reader will understand that the structure of the femora, tibiae and tarsi is normal, i.e. not characterised by the dilatation of the tarsi or by the presence of teeth or serrations on the femora. A comparison of Handlirsch's diagnoses for the *fuscipennis* and *oculata* groups suffices to illustrate this point. It will be seen that the one is merely a repetition of the other, with only this difference, that in the former there is the statement that the basal joint of the middle tarsi is dilated. In the following pages I have endeavoured to avoid such superfluous repetition.

Handlirsch divided the genus into numerous species-groups, based on combinations of several characters, but chiefly and somewhat arbitrarily on resemblances in the structure of the male genitalia. If the separation of groups is based only on the shape of the genitalia, then we should have to place within the same group such dissimilar species as *cinctella* and *diversipennis* or *chlorotica* and *monedula*. If, however, other characters are brought into consideration we shall find that many of them are common to two or more groups. Such overlapping of characters not only emphasises the artificial nature of some groups but also makes them of little value in the identification of species, since their boundaries become so ill-defined. On the other hand, a narrow interpretation of the limits of a group leads to the undesirable multiplication of groups, since many new species will not fit in with the old groups. I am

of the opinion that the arrangement of the species into groups does not represent in the majority of cases the natural affinities of the species, but nevertheless, such an arrangement in this large genus is to a certain extent helpful in the identification of species and I have therefore adopted Handlirsch's scheme. At the same time it has been found necessary to erect a few more groups for some new species which are sharply defined, but others which are less so have been attached provisionally to the old groups.

A character which has been used by Handlirsch and other authors, the presence of either one or two longitudinal veins at the apex of the medial cell of the hind wing, appears to me to be of doubtful value and has not been relied on to any great extent in this work. In those species supposed to have only one such vein, it will be seen that the other is present as a *vena spuria*, and the presence of the second or lower one depends on its degree of chitinisation. This is certainly variable, for in some species described as having two such veins only the extreme base of the lower one shows a distinct chitinisation.

KEY TO THE SPECIES, ♂♂.

- (10) 1. First four joints, or at least the basal joint, of the anterior tarsi dilated.
- (5) 2. First four joints of the anterior tarsi dilated.
- (4) 3. Seventh tergite semicircular, seventh sternite with a short carina on each side near the lateral margin; middle femora unarmed. 16 mm. long. **Cameronis** Handl.
- (3) 4. Seventh tergite triangular, the apex emarginate, seventh sternite with one median and two feeble lateral carinae; middle femora with two teeth near the base. 22 mm. long. **bubalus** Handl.
- (2) 5. First and second, or only the first joint of the anterior tarsi dilated.
- (7) 6. First joint of the anterior tarsi strongly dilated, the second a little less so, the first with six black lanceolate spines. **anomalipes** Arnold
- (6) 7. First joint of the anterior tarsi moderately dilated, with thin short spines which are unevenly spaced and inserted towards the middle of the joint and not on its edge (figs. 6, 10 b).
- (9) 8. Six spines on the first joint of the anterior tarsi, two near the apex and four close together in the basal half; eighth to twelfth joints of the flagellum strongly dilated and excavated below; middle femora with four spines on the posterior margin. **scaura** Arnold
- (8) 9. Eight spines on the first joint, two at the apex and six in the basal half; joints of the flagellum not dilated, the seventh and eighth feebly spinose posteriorly; middle femora dentate-serrate along the whole of the posterior margin. **atrospinosa** Turner
- (1) 10. Joints of the anterior tarsi simple.
- (12) 11. Middle tibiae produced into a broad spine at the apex outwardly; seventh tergite not semi-elliptical. **afra** Handl.
- (11) 12. Middle tibiae not produced at the apex, or if so, then the seventh tergite is semi-elliptical.
- (18) 13. Seventh tergite with a small tooth on each side near the base.
- (15) 14. Second sternite with a carina which ends posteriorly in a short curved tooth; seventh tergite orange yellow; 16-20 mm. long. **Moebii** Handl.
- (14) 15. Second sternite with at the most a slightly raised and shining line down the middle; seventh tergite black, with a yellow spot on each side.
- (17) 16. Thorax, excepting the posterior margin and a part of the sides of the epinotum, black; tergite with dark chrome yellow bands. 19 mm. long. **odontopyga** Turner

- (16) 17. Thorax mainly lemon yellow at the sides and with lemon yellow bands on the scutellum, metanotum and epinotum; tergites with lemon yellow bands. 16 mm. long. *Scotti* Turner
- (13) 18. Seventh tergite not toothed at the sides.
- (20) 19. Apical half of the seventh tergite flattened, semi-elliptical and fusco-ferruginous. (Seventh sternite tricarinate, the median carina low and not reaching the base; bands on the tergites lemon yellow; seventh to tenth joints of the flagellum feebly spinose.) *speciosa* Arnold
- (19) 20. Seventh tergite varying from triangular to semicircular.
- (40) 21. Large species 18–25 mm. long.
- (23) 22. Pale markings on the head, the prothorax and tegulae ferruginous; middle femora bluntly angular in the middle behind, the apical half much narrower than the basal. 24–25 mm. long. *diversipennis* Smith
- (22) 23. Pale markings on the head not ferruginous, prothorax black, or black and yellow; middle femora not subangular in the middle.
- (29) 24. Pale colour of the tergites whitish, yellowish white or glaucous white, not distinctly yellow.
- (26) 25. None of the joints of the flagellum spinose. (Middle femora strongly dentate-serrate on the posterior margin; the first six tergites with whitish bands, the seventh ferruginous; 15–18 mm. long.) *cultrifera* Arnold
- (25) 26. The sixth to eighth or the eighth and ninth joints of the flagellum spinose.
- (28) 27. Tergites 1–6 with white bands; second joint of the flagellum three-fifths longer than the third, the sixth to eighth spinose; sixth sternite with a scutate platform, the seventh with a carina on each side. 18 mm. long. *albofasciata* Smith
- (27) 28. Tergites 1–4 with yellowish white maculae, narrowed inwardly, on each side, the fifth with a bisinuate band of the same colour, the sixth with a yellowish white spot on each side; second joint of the flagellum two and a quarter times longer than the third; sixth sternite with a triangular platform, the seventh without carinae. 24 mm. long. *albidula* Turner
- (24) 29. Pale colour of the tergites distinctly yellow.
- (33) 30. Mesonotum with a large U-shaped yellow mark in the middle.
- (32) 31. Posterior margin of the middle femora distinctly dentate-serrate over the greater part of its length; tergites 1–6 lemon yellow, the apical margins narrowly black, the first, second and third enclosing black maculae; second sternite unarmed. 20–23 mm. long. *flavicincta* Turner
- (31) 32. Posterior margin of the middle femora smooth; tergites chrome yellow, the first five enclosing indistinct, linear, transverse and blackish streaks; second sternite with a median carina ending in a small and acute tooth. 23 mm. long. *Bequaerti* Arnold
- (30) 33. Mesonotum without a U-shaped yellow mark.
- (35) 34. Outer paramera of the genitalia very broad and transverse at the apex (fig. 19). *monedula* Handl.
- (34) 35. Outer paramera of the genitalia differently formed.
- (37) 36. Fourth and following tergites black, the pale colour on the first three is whitish yellow. *ugandensis* Turner
- (36) 37. All the tergites yellow, with black markings.
- (39) 38. Flagellum black, the eighth joint feebly spined posteriorly; mesopleurae with a large yellow mark, the sides of the thorax in greater part yellow. 23 mm. long. *Bequaerti* var. *dira* Arnold
- (38) 39. Flagellum ferruginous, the seventh to ninth joints distinctly spined; mesopleurae with a yellow mark, the sides of the thorax in greater part black. 24 mm. long. *venusta* Arnold
- (21) 40. Small or medium-sized species, less than 18 mm. long.

- (48) 41. Basal joint of the middle tarsi more or less dilated.
- (43) 42. Seventh tergite narrow and truncate at the apex, the sides feebly trisinate; sixth sternite with a semicircular platform.
- (42) 43. Seventh tergite not trisinate at the sides; the sixth sternite with a triangular platform. **compedita** Turner
- (45) 44. Wings usually deep brown in the middle; seventh tergite triangular, rounded at the apex. Flagellum, excepting the last four joints, ferruginous. **fuscipennis** Lep.
- (44) 45. Wings hyaline or only faintly tinged with brown; flagellum black above, dirty yellow below.
- (47) 46. Wings faintly tinged with brown in the basal half; pale bands on the tergites yellowish white, the seventh entirely black. Interocular distance on the vertex equal to the length of the first six joints of the flagellum, the second joint three times longer than wide at the apex. **sibilans** Handl.
- (46) 47. Wings hyaline; pale bands on the tergites yellowish white in the middle, pale lemon yellow at the sides, the apical half of the seventh reddish yellow. Interocular distance on the vertex equal to the length of the first five joints of the flagellum, the second joint four and a half times longer than wide at the apex. **capensis** Lep.
- (41) 48. Basal joint of the middle tarsi not dilated.
- (58) 49. Second to fifth or sixth sternites dull, finely and closely punctured all over.
- (53) 50. Flagellum filiform, all the joints cylindrical, and not spinose. Head, thorax and first tergite with a dense whitish or greyish pilosity. Seventh sternite with a median carina.
- (52) 51. Abdomen entirely black. Sternites two and six not armed nor carinate. 14 mm. long. **Arnoldi** Brauns
- (51) 52. Tergites lemon yellow, the first two widely, the third to sixth narrowly black at the base; second sternite with a low tooth, the sixth somewhat tumid in the middle. 14 mm. long. **albopilosa** Arnold
- (50) 53. At least the seventh joint of the flagellum angularly produced behind; seventh sternite tricarinate.
- (57) 54. Posterior femora with two or three teeth behind near the apex; sixth sternite with a low, indistinct and triangular tubercle.
- (56) 55. Second joint of the flagellum one-third longer than the third; outer paramera of the genitalia bifurcate at the apex, the inner ramus thin, cylindrical and longer than the outer. **ulula** Arnold
- (55) 56. Second joint of the flagellum one-fifth longer than the third; the outer paramera of the genitalia not bifurcate. **Junodi** Arnold
- (54) 57. Posterior femora indistinctly serrate; sixth sternite with a semi-elliptical and high platform. (Second joint of the flagellum one-third longer than the third; outer paramera of the genitalia bifurcate, the outer ramus longer than the inner.) **Stevensoni** Arnold
- (49) 58. Sternites not entirely dull, and not finely, closely punctured all over.
- (62) 59. Posterior margin of the middle femora smooth, without teeth or serration.
- (61) 60. Tergites 1-6 lemon yellow, black at the extreme base and apex, the second and third enclosing transverse black maculae; seventh joint of the flagellum feebly spined, the second joint three-fourths longer than the third. 17 mm. long. **capicola** Handl.
- (60) 61. Tergites 1-6 pale whitish yellow, the apical margins widely black; all the joints of the flagellum simple, the second joint half as long again as the third. 14-15 mm. long. **Kriechbaumeri** Handl.
- (59) 62. Posterior margin of the middle femora more or less dentate or serrate.
- (70) 63. Seventh sternite tricarinate.

- (65) 64. Mesonotum without yellow streaks on each side of the middle in front; tergites 1-6 pale chrome yellow, the declivous basal half of the first and the bases of the rest, narrowly black; seventh and eighth joints of the flagellum spined posteriorly; sixth sternite with a high semicircular platform. 16 mm. long. *ochracea* Handl.
- (64) 65. Tergites with dirty white bands, or if the bands are partially yellow, then the mesonotum has two longitudinal yellow streaks in front.
- (67) 66. Sixth sternite without a distinct platform or tubercle, merely tumid in the middle; second joint of the flagellum two-thirds longer than the third; posterior margin of the middle femora very distinctly serrate. (Pale bands on the tergites glaucous white, the mesonotum with two yellow streaks near the middle in front.) *harenarum* Brauns
- (66) 67. Sixth sternite with a high semicircular platform; second joint of the flagellum twice as long as the third.
- (69) 68. Mesonotum without two yellow streaks in front; sides of the thorax mostly black; tergites with narrow dirty white bands. 17 mm. long. *liturata* Turner
- (68) 69. Mesonotum with two yellow longitudinal streaks in front, sides of the thorax mostly yellow; bands on the tergites glaucous white, those on the first three or four yellowish anteriorly. 17 mm. long. *liturata*, race *flavopicta* Arnold
- (63) 70. Seventh sternite with only a median carina.
- (74) 71. Clypeus and the labrum, excepting only the lateral margins and apex, blackish; middle femora with two or three teeth behind at the apex.
- (73) 72. Pilosity of the head and thorax greyish white. *melanopa* Handl.
- (72) 73. Pilosity of the head and thorax yellowish grey. *melanopa*, race *litoralis* Arnold
- (71) 74. Labrum and greater part of the clypeus not black.
- (80) 75. Bands on the tergites glaucous white, those on the first two sometimes yellowish in front.
- (77) 76. Labrum, clypeus and all the markings on the thorax glaucous white. (Middle femora feebly serrate; seventh joint of the flagellum spined, the second joint nearly three-quarters longer than the third; interocular distance on the vertex nearly equal to the length of the first five joints of the flagellum; 17 mm. long.) *massaica* Cameron
- (76) 77. Labrum, clypeus and pale markings on the thorax lemon yellow.
- (79) 78. Seventh tergite considerably narrowed over the apical third, the apex narrowly rounded (fig. 23 a). *intermedia* Dahlbom
- (78) 79. Seventh tergite not much narrowed apically, the apex fairly widely truncate (fig. 24). *Baumannii* Handl.
- (75) 80. Bands on the tergites distinctly yellow.
- (84) 81. Fifth to ninth joints of the flagellum spined posteriorly.
- (83) 82. Second joint of the flagellum nearly half as long again as the third. 15-17 mm. long. *labidura* Handl.
- (82) 83. Second joint of the flagellum two-thirds longer than the third. 15 mm. long. *modesta* Handl.
- (81) 84. Fifth joint of the flagellum not spined.
- (86) 85. Seventh tergite black.
- a. Sixth to eighth joints of the flagellum spined. *carinata* Smith
- b. Seventh joint of the flagellum spined. *Braunsii* Handl.
- c. Eighth and ninth joints of the flagellum spined. *velox* Handl.
- d. Sixth to ninth joints of the flagellum spined. *Stadelmanni* Handl.
- (85) 86. Seventh tergite yellow. *fraudulenta* Arnold

B. obtusa Turner and *forcipata* Handl. being unknown to me in nature have been omitted from the key.

KEY TO THE SPECIES, ♀♀.

- (10) 1. Sternites 2-5 very finely and closely punctured, dull or nearly so.
- (5) 2. Sides of the thorax in greater part yellow.
- (4) 3. Sixth sternite ferruginous, sharply carinate in the middle over its whole length. 19 mm. long. *speciosa* Arnold
- (3) 4. Sixth sternite black, convex and not carinate. 15 mm. long. *ulula* Arnold
- (2) 5. Sides of the thorax more black than yellow.
- (9) 6. Tergites with lemon or chrome yellow bands.
- (8) 7. Face narrow, the eyes distinctly divergent below; tergites 1-5 with chrome yellow bands, the sixth black with a yellow apical spot. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus half of the fourth. Second joint of the flagellum two and a third times longer than the third. *scaura* Arnold
- (7) 8. Face wide, the eyes nearly parallel; tergites 1-5 with lemon yellow bands, the sixth ferruginous at the base and reddish ochreous in the middle. Interocular distance on the vertex equal to the length of the first four joints of the flagellum; second joint of the flagellum twice as long as the third. *bubalus* Handl.
- (6) 9. Tergites 1-5 with creamy white bands, the sixth black, with a ferruginous apical spot. (Second joint of the flagellum two and a half times longer than the third; interocular distance on the vertex equal to the length of the first three joints of the flagellum.) *atrospinosa* Turner
- (1) 10. Sternites 2-5 not finely and closely punctured all over.
- (14) 11. Second sternite dull, finely and closely punctured over the greater part, but with a narrow longitudinal strip in the middle which is impunctate or only microscopically punctured, the part adjoining this strip with a few punctures larger than those on the rest of the segment.
- (13) 12. Sixth sternite ferruginous; mesopleurae with a large yellow spot in front. *cultrifera* Arnold
- (12) 13. Sixth sternite black; mesopleurae entirely black. *albofasciata* Smith
- (11) 14. Second sternite sparsely, coarsely punctured and shining in the middle, more closely and more finely punctured at the sides.
- (30) 15. Large species, 22-24 mm. long, or if less than 22 mm. (small specimens of *Moebii*) then the second and third sternites are distinctly subcarinate lengthwise in the middle and the apical abdominal segment is reddish yellow.
- (19) 16. Basal two-thirds of the fore wing and nearly all the hind wing deeply tinged with brown.
- (18) 17. Tergites 1-5 with large pale yellow maculae on each side, face, pronotum and sixth abdominal segment ferruginous, scutellum, metanotum and median area of the epinotal dorsum entirely black; second joint of the flagellum four and a half times longer than wide at the apex. *diversipennis* Smith
- (17) 18. First tergite mainly yellow, black at the base and narrowly black in the middle and on the apical margin, tergites 2-5 with deeply bisinuate lemon yellow bands which are sometimes narrowly interrupted in the middle, scutellum, metanotum and epinotum with wide lemon yellow bands, sixth tergite black at the base and ferruginous on the apical half; second joint of the flagellum nearly five and a half times longer than wide at the apex. *venusta* Arnold
- (16) 19. Wings hyaline.
- (21) 20. Abdomen black with a violaceous lustre, and pale yellow spots on each side. *monedula* Handl.

- (20) 21. Abdomen with yellow bands on at least some of the tergites, or in greater part yellow.
- (23) 22. Last three abdominal segments entirely black, the first two with wide, the third with narrow bisinuate lemon yellow bands, that on the second enclosing two black spots. *ugandensis* Turner
- (22) 23. Last three abdominal segments not entirely black.
- (27) 24. Sixth tergite yellow or reddish yellow.
- (26) 25. Mesonotum with a large U-shaped yellow mark on its disc, the greater part of the thorax yellow. First five tergites pale lemon yellow, black on the apical margins, the first three each enclosing two black spots. *flavicincta* Turner
- (25) 26. Mesonotum black, occasionally with two narrow longitudinal yellow streaks near the middle in front; sixth sternite flavo-ferruginous, abdomen black, with fairly narrow yellow bands on the first five tergites, that on the first sometimes interrupted in the middle, on the second to fifth deeply bisinuate. 17-21 mm. long. *Moebii* Handl.
- (24) 27. Sixth tergite black.
- (29) 28. Tergites 1-5 with chrome yellow bands, the second and third enclosing two black spots on each side of the middle; mesonotum with two longitudinal chrome yellow streaks in front. *Bequaerti* Arnold
- (28) 29. The chrome yellow bands on tergites 1-5 widely interrupted in the middle; mesonotum entirely black. *Bequaerti*, var. *dira* Arnold
- (15) 30. Small or medium-sized species less than 20 mm. long.
- (34) 31. Basal half of the wings tinged with brown.
- (33) 32. The clypeus in greater part, flagellum excepting the last four joints and the sixth abdominal segment, ferruginous; second joint of the flagellum nearly twice as long as the third, and four and a half times longer than wide at the apex. *fuscipennis* Lep.
- (32) 33. Clypeus in greater part, flagellum and sixth abdominal segment, black; second joint of the flagellum two-thirds longer than the third, and three and a half times longer than wide at the apex. *sibilans* Handl.
- (31) 34. Wings hyaline.
- (42) 35. Pale markings on the tergites dirty white, glaucous white or yellowish white, but not distinctly yellow; the sixth tergite entirely black.
- (37) 36. Clypeus and the labrum excepting the lateral margins, black. *melanopa* Handl.
- (36) 37. Clypeus and labrum yellow, the former with the basal half blackish or with two black spots at the base.
- (41) 38. Dorsum and greater part of the sides of the thorax black, the scutellum with a pale pre-apical margin in *liturata*; sixth sternite subcarinate lengthwise over the apical half.
- (40) 39. Legs reddish yellow, the femora marked with black; second joint of the flagellum twice as long as the third. *liturata* Turner
- (39) 40. Legs lemon yellow, the femora in greater part black; second joint of the flagellum half as long again as the third. *harenarum* Brauns
- (38) 41. Thorax with yellowish white transverse bands on the scutellum, metanotum and epinotum and longitudinal streaks of the same colour near the middle of the mesonotum, the sides of the thorax largely variegated with the same colour; sixth sternite distinctly carinate from base to apex. *massaica* Cam.
- (35) 42. Tergite with yellow or reddish yellow markings, but if inclining to whitish yellow then the sixth tergite has an ochreous spot on each side (= *intermedia*).
- (46) 43. Mesonotum, excepting a streak at the sides near the tegulae, black; the posterior half of the thorax without yellow bands.

- (45) 44. Pale markings on the head and thorax reddish ochreous; second joint of the flagellum twice as long as the third. *compedita* Turner
- (44) 45. Pale markings on the thorax lemon yellow; head, excepting the sides of the labrum, anterior angles of the clypeus and the posterior orbits, black; second joint of the flagellum three-fourths longer than the third. *Arnoldi* Brauns
- (43) 46. Yellow bands on the scutellum, mesonotum and epinotum, or on at least one of those segments.
- (48) 47. Mesonotum with a U-shaped yellow mark in the middle, the lateral arms sometimes not joining the basal part; sides of the thorax mostly yellow.
- a. Second joint of the flagellum fully twice as long as the third; sixth tergite yellow, black at the base. *Scotti* Turner
- b. Second joint of the flagellum nearly one-half longer than the third; sixth tergite black, with an ochreous spot on each side. *intermedia* Dahlbom
- c. Second joint of the flagellum one-third longer than the third; sixth tergite black. *Braunsii* Handl.
- d. Second joint of the flagellum one-half longer than the third, sixth tergite black. *Kriechbaumeri* Handl. and var. *scitula* Arnold
- e. As in d. but the sixth tergite yellow. *lobatifrons* Turner
- (47) 48. Mesonotum without a U-shaped yellow mark.
- (54) 49. Sixth tergite yellow or reddish yellow.
- (51) 50. Second joint of the flagellum short, only two-fifths longer than the third. (Sternites black, the sixth not carinate.) *fraudulenta* Arnold
- (50) 51. Second joint of the flagellum long, more than twice as long as the third; apical half of the sixth sternite subcarinate.
- (53) 52. Greater part of the second and the whole of the third to fifth sternites chrome yellow, the sixth black at the base, yellow apically; clypeus yellow. *ochracea* Handl.
- (52) 53. Sternites pale ferruginous, black at the base, yellow at the sides; basal half of the clypeus blackish. *capensis* Lep.
- (49) 54. Sixth tergite black.
- (56) 55. Sixth sternite distinctly carinate medially from base to apex. *capicola* Handl.
- (55) 56. Sixth sternite not carinate, or only subcarinate on the apical half.
- (58) 57. Clypeus and labrum, excepting the lateral margins, black; interocular distance on the vertex equal to the length of the first five joints of the flagellum. *melanopa*, race *litoralis* Arnold
- (57) 58. Clypeus and labrum not mainly black.
- (60) 59. Sides of the thorax black; second joint of the flagellum three-fourths longer than the third. *carinata* Smith
- (59) 60. Sides of the thorax mainly yellow; second joint of the flagellum half as long again as the third. *labidura* Handl.

B. Cameroni Handl. has been omitted from the above key, being unknown to me in nature.

1. INTEGRA Group.

Face wide, eyes parallel or feebly divergent below. Wings noticeably short in the ♀. Sixth tergite in the ♀ with lateral carinae towards the apex, enclosing a flattened pygidial area. In the male the anterior tarsi are dilated, especially the second to fourth joints, the middle femora are often dentate posteriorly, the middle tibiae are usually produced into a point at the apex, the middle tarsi are not normal, the second sternite is armed with a carina or tubercle, the

sixth with a tubercle, the seventh wide, with two longitudinal carinae. Second sternite in the ♀ evenly and finely punctured, with some shallow and larger punctures.

Including *B. Cameronis* Handl.

B. Cameronis Handl. (figs. 1, 1 a-f, Plate VI, fig. 34). *Sitzungsber. K. Akad. Wiss. Wien*, CII, p. 715, ♀, ♂. 1893.

"Inner margins of the eyes distinctly divergent below, the face carinate

between the antennae. Eleventh joint of the antennae in the ♂ excavated below, the seventh, eighth and ninth very distinctly spined behind. Wings almost hyaline, the veins brown, in the ♀ almost twice as long as the width of the thorax. Hind wing with only one longitudinal vein emitted from the apex of the medial cell. Basal joint of the anterior tarsi with seven or eight spines, which are dilated in the ♂. The three intermediate joints are widely dilated outwardly, almost quadrate, their inner angles armed with short, straight spines. The middle femora in the ♂ are hardly excavated below, not distinctly dentate but crenulate, the middle tibiae not produced at the apex, the first joint of the middle tarsus

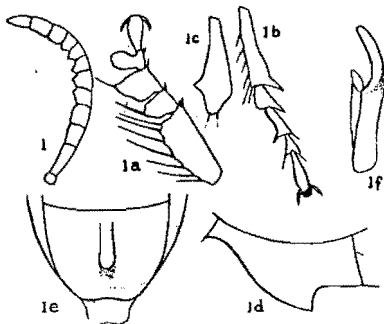


Fig. 1. *Bembex Cameronis*, ♂, flagellum; a, ♂, left anterior tarsus; b, ♂, middle tibia and tarsus; c, ♂, middle tibia, dorsal aspect; d, ♂, second sternite; e, ♂, sixth and seventh sternites; f, ♂, genitalia.

dilated near the apex, excavated and having a dentiform carina in the middle. The ♀ has a less distinct pygidial area on the sixth tergite than in *B. integra*. Seventh tergite in the ♂ widely rounded at the apex, the second sternite has a median dentiform tubercle and the sixth also has a small one. Head and thorax densely covered with a grey pilosity. Sculpture similar to that of *integra*. (Head with a dense and fine fundamental puncturation and scattered coarse punctures on the labrum and clypeus. Dorsum of the thorax and the mesopleurae densely covered with coarse and fine punctures. Tergites with a very even, fairly fine and moderately dense puncturation, the apical segment in the ♂ with numerous coarse punctures, in the ♀ with a very dense, moderately coarse and in the middle almost rugose, puncturation. Sternites in the ♀ dull, with a very fine and dense puncturation and a few larger punctures here and there; in the ♂ more shining, with a coarser puncturation.)

Black. Anterior and posterior orbits, clypeus, labrum, the margin of the pronotum narrowly, the pronotal tubercles, sides of the prothorax, large spots on the mesopleurae, metapleurae and sides of the epinotum, a very narrow line sometimes obsolete on the scutellum, complete fasciae, barely sinuate and moderately dilated laterally on the first five tergites, a cordiform spot on the sixth tergite in the ♀, and a transverse spot on the sixth tergite in the ♂, lateral maculae on the sternites in the ♀, of which the first three are joined in the middle and almost the whole of the sternites in the ♂, yellow. Scapes yellow, the flagellum in the ♂ fuscous above, brown below, entirely brown in the ♀. Legs yellow; coxae, trochanters, femora and in the ♂ also the tibiae, more or less marked with black. 15-19 mm. long.

Cape Province. Types in the Berlin Museum."

A ♂ specimen, 16 mm. long, from Tradouw Pass, Swellendam, C. P., and in the South African Museum, which I attribute to this species, has the bands on the abdomen lacteous rather than yellow; the structure of the legs and antennae agree with the figures of those parts in Handlirsch's monograph, but the genitalia are slightly different. The figures given herewith are drawn from this specimen. In addition it should be noted that the interocular distance on the vertex is equal to the length of the first six joints of the flagellum, and that the second joint is three-quarters longer than the third.

2. ULULA Group.

Face wide. Eyes feebly divergent below. Wings fairly short.

♂. Anterior tarsi simple. Middle femora dentate near the apex behind. Basal joint of the middle tarsi slightly enlarged near the apex. Second sternite with a longitudinal carina, the sixth tergite with a tubercle or platform, the seventh with a median and lateral carinae.

♀. Second sternite dull, closely and finely punctured. Vertex only shallowly depressed on each side of the ocellar area. Allied to the *cinctella* group of the Palearctic region, but the ♀ has no pygidial area.

Including *ulula* Arnold and *Stevensoni* Arnold.

B. ulula n.sp. (figs. 2, 2 a, b); Plate VI, figs. 3 and 43).

♂. 15 mm. long. Black. Mandibles excepting the apex, labrum, clypeus, anterior orbits, the face at the base and a sinuous line below the anterior ocellus, temples, posterior margin and sides of the pronotum, the mesopleurae excepting a black spot below the tegulae and two black spots on the posterior margin, the metapleurae excepting their posterior margins, sides of the epinotum, narrow streaks on the sides of the mesonotum, narrow transverse bands on the posterior margins of the scutellum and metanotum, an arcuate band on the epinotum, continuous transverse bands, abruptly dilated at the sides, on the first six tergites, the underside of the thorax, first two sternites excepting four black spots on the second, and apical bands, dilated at the sides, on the third to fifth sternites, lemon yellow. Legs lemon yellow, with narrow black streaks on the upper side of the femora. Tegulae yellow in front. Wings hyaline, the veins ochreous, the subcosta black as far as its junction with the basal vein. Flagellum ochreous below, fuscous above. Pilosity white and very sparse. Punctuation of the mesonotum exceedingly fine, very close and shallow; that of the scutellum much larger, oblique and not very close. Dorsum of the epinotum very finely reticulate-punctate. Tergites closely punctured, the seventh shining, coarsely and not closely punctured. Sternites 2-4 closely and finely punctured all over, the second dull, the rest almost so. The second sternite has a low median longitudinal carina which does not reach the apical margin; the sixth is very slightly raised in the middle and has an indistinct carina over its apical half; the seventh is distinctly tricarinate. Seventh tergite triangular, broadly rounded at the apex, the sides not sinuate. Clypeus moderately convex, somewhat flattened in the middle in front. Inner margins of the eyes parallel. Face carinate below between the antennae. Vertex

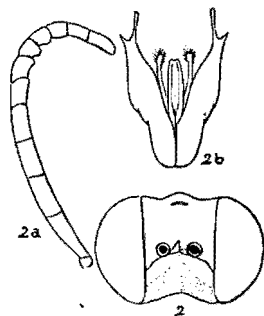


Fig. 2. *Bembex ulula*, ♀, head; a, ♂, flagellum; b, ♂, genitalia.

less deeply impressed on each side of the ocellar area than in the majority of our species. Antennae long and slender. Second joint of the flagellum not quite one-third longer than the third, the seventh to ninth slightly and bluntly produced on the outer margin, the apical joint cylindrical, about one-third longer than the penultimate, none of the joints excavated below. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus one-third of the fourth joint. Basal joint of the anterior tarsi with seven whitish spines. Middle femora with two or three small teeth near the apex behind. Middle tibiae with one spur, not produced at the apex outwardly. The basal joint of the middle tarsi is slightly dilated near the apex. The genitalia are unlike those of any other member of the genus excepting *Stevensoni*. The outer paramera are bifurcate at the apex, the inner ramus long and thin and much longer than the outer ramus.

♀. 15 mm. long. Base of the clypeus with a transverse black spot on each side. The yellow bands margining the posterior orbits sometimes meet in the middle behind the ocellar area. Mesonotum with two clavate yellow streaks in the middle and a sinuous one near the base, these are sometimes united to form a U-shaped mark. Sixth tergite ochreous on the apical half. Second sternite yellow, with a large black macula in the middle which is connected by a thin band at the base to two small black maculae at the sides. Sternites 3-5 with triangular yellow maculae at the sides, sometimes connected by a band of the same colour on the margin. Otherwise like the ♂ in colour and sculpture. Clypeus very distinctly flattened on the apical half. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. The second joint of the latter is almost three-fourths longer than the third. Second sternite a little more closely punctured than in the ♂, the sixth very closely and microscopically punctured. Sixth tergite triangular, narrowly rounded at the apex, the lateral margins with black and rather long setae. Otherwise like the ♂.

Victoria Falls, Gwaai, Sawmills and Springvale, S. R. January. Taken visiting the flowers of a small leguminous, clover-like plant, and very noticeable on account of its shrill hum, more like that of a bee than a Sphegid.

(R.M. and T.M. colls.) Types in the Rhodesia Museum.

B. Stevensoni n.sp. (figs. 3, 3 a and b, Plate VI, fig. 48).

♂. 14 mm. long. Black. Labrum, clypeus, mandibles except at the apex, scapes excepting a narrow black streak above, sides of the face widely, a triangular area between the antennal sockets, a V-shaped mark and a spot on each side of same below the anterior ocellus, temples, pronotum excepting the neck and a streak in front of the tubercles, prosternum in the middle, sides of the mesothorax excepting the margins of the epimerum and a black patch on the lower posterior angle of the mesopleurae, the metapleurae, sides of the epinotum excepting their margins, sides of the mesonotum, a transverse band on the posterior margin of the scutellum, transverse bands on the anterior and posterior margins of the metanotum and a line margining the sides of the epinotal median area, pale lemon yellow. Fairly wide bisinuate bands on the first six tergites dull white. Sternites 1-3 lemon yellow; spots on their basal angles, the carina on the second and two spots on each side of the same and the base of the third, black. The fourth and fifth sternites with narrow apical bands of lemon yellow, broadly dilated at the sides. Legs lemon yellow, a streak on the upper side of the femora, the basal halves of the trochanters and an irregular mark on the inside of the tibiae, black. Tegulae pale yellow in front, brownish behind. Wings hyaline, the veins brown.

Pilosity white and scanty. Clypeus not flattened anteriorly. Inner margins of the eyes almost parallel. Second joint of the flagellum about one-third longer than the third, the eighth to eleventh excavated below, the seventh to tenth slightly dilated but not spinose, the apical joint slightly curved, cylindrical and barely longer than the penultimate joint. Interocular distance on the vertex equal to the length of the first four joints of the flagellum, plus one-third of the fifth joint. Punctuation of the thorax close, very fine, oblique and shallow. Fifth and sixth tergites sparsely punctured, the seventh shining, with a few scattered and large punctures. Sternites 1-5 closely and finely punctured and dull, the sixth shining and more strongly punctured on its apical half. Second sternite with a median longitudinal carina which is raised posteriorly and ends in a sharp angle some distance from the hind margin. Sixth tergite with a semi-elliptical platform at the base; seventh tergite with three carinae, the middle one broadened towards the base into a convex triangular area. Outer paramera of the genitalia bifurcate, the outer ramus long and narrow, the inner one triangular and lamelliform. Basal joint of the anterior tarsi with seven whitish spines. The apical half of the middle femora indistinctly serrate below.

Bulawayo (Arnold); Sawmills, S. R. (R. H. R. Stevenson). January to February. Type in the Rhodesia Museum.

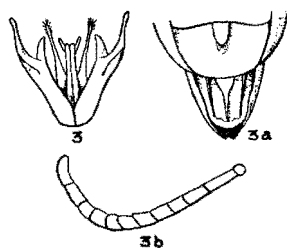


Fig. 3. *Bembex Stevensoni*, ♂, genitalia; a, ♂, sixth and seventh sternites; b, ♂, flagellum.

3. BUBALUS Group.

♂. All the joints of the anterior tarsi dilated. Middle femora dentate behind, middle tibiae with a short apical point and a distinct spur. Middle tarsi abnormal. Second sternite with a longitudinal tubercle, the sixth armed, the seventh wide and with two convergent longitudinal carinae.

♀. Second sternite finely punctured all over.

Closely allied to the *integra* group. Including *B. bubalus* Handl.

B. bubalus Handl. (figs. 4, 4 a-c). *Loc. cit.* p. 719, ♂, ♀.

♂. 22 mm. long. Black. Labrum, clypeus, mandibles except at the apex, scapes, sides of the face, a triangular area at the base of same, posterior orbits narrowly, pronotal tubercles and the margins of the pronotum below them and the lower anterior angle of the mesopleurae, lemon yellow. Flagellum reddish ochreous. Tegulae brown. The first six tergites have transverse, bisinuate and lacteous bands. Sternites 1-6 lemon yellow, the first and second black at the base, the third to fifth in the middle with a short transverse black spot at the base and apex. Sixth sternite with a black spot on each side of the median carina and a black spot on the basal angles. Legs lemon yellow, the coxae and femora above and the whole of the middle and hind trochanters, black. Wings hyaline, slightly tinged with brown, the veins dark brown. Pilosity long and abundant, greyish brown on the vertex and mesonotum, white elsewhere. The sixth and seventh sternites densely pilose in the middle. Punctuation of the thorax and tergites fine, close and shallow, the tergites fairly dull, the sternites shining, shallowly, finely and not closely punctured except the second. Clypeus very convex transversely, not flattened in front, almost three times wider than long. Inner margins of the eyes almost

parallel. Scapes thick, about twice as long as wide at the apex. Second joint of the flagellum rather short, three-quarters longer than the third, the sixth to ninth spined at the base, the tenth to twelfth deeply excavated below, the ninth to eleventh dilated, the twelfth twisted. Interocular distance on the vertex equal to the length of the first five joints of the flagellum plus half of the sixth joint. Vertex not deeply depressed at the sides of the ocellar area. Second sternite with an acute, triangular and transversely compressed tooth. Sixth sternite with a similar tooth extending over its basal two-thirds. Seventh sternite with a median carina and a faint carina on each side. Seventh tergite triangular, shining, finely punctured at the base, sparsely and coarsely at the sides, the apex deeply and angularly emarginate. The eighth sternite has the apical process bluntly trilobate. The ventral flaps of the seventh tergite are very large and broadly ovate. The joints of the anterior tarsi are all dilated, especially the last three; the basal joint has seven or eight white spines on the outer margin, and the third and fourth have two flattened white spines at the apex. Middle femora with two teeth on the posterior margin near the base; middle tibiae not distinctly produced at the apex; basal joint of the middle tarsi dilated at the apex, bidentate on the inside and excavated between the teeth, the second joint is also moderately dilated.

♀. 18 mm. long. Clypeus with two black spots at the base. Flagellum pale ferruginous. The pale bands on the tergites are lemon yellow, not lacteous as in the ♂. Sixth sternite and apical margin of the fifth tergite ferruginous. The sixth tergite is yellow, except at the base where it is ferruginous. Femora ferruginous above and in front, the posterior femora black behind. Otherwise like the ♂ in colour. Fifth and sixth tergites with a sparse fulvous pilosity. Sternites very closely and finely punctured, and with a few large shallow punctures. Clypeus sparsely and fairly strongly punctured. Scapes much more slender than in the ♂, three times longer than wide at the apex. Second joint of the flagellum nearly twice as long as the third. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. On the tarsal comb the two apical spines on the basal joint and the two on the second joint are long and ferruginous, the other spines are pale yellow and shorter. Sixth tergite narrowly rounded at the apex, the sides slightly sinuate.

Willowmore, C. P.

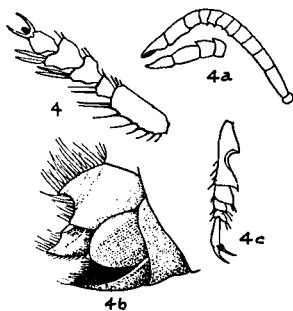


Fig. 4. *Bembex bubalus*, ♂, anterior tarsus; a, ♂, flagellum; b, ♂, apical sternites, lateral view; c, ♂, left middle tarsus.

4. ANOMALIPES Group.

♂. Eyes very slightly divergent below. Basal joint of the fore tarsi greatly dilated, the second slightly so. Middle tibiae with only one spur and not produced outwardly at the apex; the basal joint of the middle tarsi slightly dilated and produced into a point at the apex. Second sternite carinate; sixth sternite with an oblong platform on the apical half; the seventh with a median carina which is flattened at the base. Seventh tergite broadly rounded at the apex, the sides slightly sinuate and with distinct lateral carinae on its apical half.

Including *anomalipes* Arn.

B. anomalipes n.sp. (figs. 5, 5 a-e; Plate VI, fig. 5).

♂. 19 mm. long. Black. Extreme apex of the labrum and the posterior orbits pale ochreous. A spot on the sides of the pronotum lemon yellow. First six tergites with transverse bands of lemon yellow, that on the first narrowed medially and slightly interrupted, that of the second abruptly trisinate. Seventh tergite black. Sternites 1-5 with triangular yellow marks at the sides of the apical margins. Legs lemon yellow, the anterior femora above, the outer half of the anterior tibiae and the base of the anterior tarsal joints, black. A broad streak on the upper side of the middle and hind femora, a narrow one on the tibiae and the apical tarsal joint, black. Tegulae with a small yellow spot in front. Wings hyaline, the veins dark brown. Clypeus with a long and dense whitish pubescence. Pilosity of the head and thorax fairly long, dense and white, that of the vertex and mesonotum shorter and pale fulvous. Thorax closely, finely and shallowly punctured, the punctures round. Second sternite closely punctured except in the middle near the apex, fairly shining, the other sternites shining, coarsely and sparsely punctured at the sides. Seventh tergite closely, finely punctured at the base, sparsely and more coarsely on the apical third, which is shining. Labrum with a fine median longitudinal carina which is expanded over the apical third into a low tubercle which is slightly hollowed out. Clypeus strongly convex, not flattened in front. Eyes slightly divergent below. Interocular distance on the vertex equal to the length of the first six joints of the flagellum. Vertex fairly deeply impressed at the sides of the ocellar area. Second joint of the flagellum three-quarters longer than the third, the seventh and eighth feebly spined at the base, the ninth to eleventh excavated below, the apical joint compressed and narrowed apically, its apex truncate. Scapes thick, barely twice as long as wide. Second sternite with a median longitudinal carina, raised posteriorly and ending in an acute tooth some distance from the posterior margin. Sixth sternite with an oblong platform in the apical half; seventh sternite with a median longitudinal carina which is flattened at the base. Seventh tergite broadly rounded at the apex, its sides slightly sinuate and distinctly carinate on each side of the apical half. The ventral flaps of the seventh tergite are long and narrow. Outer paramera of the genitalia acute at the apex, subrostrate. Basal joint of the anterior tarsi dilated, less than twice as long as wide, the outer margin with six flattened lanceolate black spines, the second joint slightly dilated. Femora simple. Basal joint of the middle tarsi dilated and produced into a tooth at the apex outwardly.

Penkridge, near the eastern border of S. Rhodesia, 1 ♂, October, type (R. R. R. Stevenson): Thysville, Congo (J. Bequaert).

The specimen from Thysville in the Congo Museum, Tervueren, has the posterior margin of the scutellum dark yellow. Type in coll. Stevenson.

A very distinct species, easily recognised by the shape of the fore tarsi and the seventh tergite.

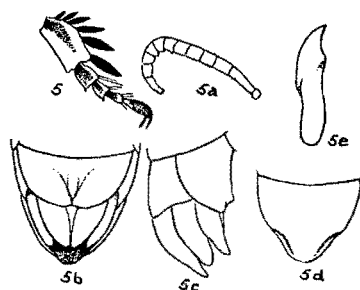


Fig. 5. *Bembex anomalipes*, ♂, anterior tarsus; a, ♂, flagellum; b and c, ♂, sixth and seventh sternites; d, ♂, seventh tergite; e, ♂, paramera of the genitalia, right half from above.

5. ATROSPINOSA Group.

Eyes almost parallel, only feebly divergent below.

♂. Basal joint of the anterior tarsi slightly dilated, the basal spines of the joint inserted on the middle line below and not on the outer margin. Middle femora strongly serrate along the whole of the hind margin; middle tibiae slightly swollen near the apex, with only one spur and not produced into a point outwardly at the apex. Second sternite closely punctured, armed with a large, compressed and rounded tooth; sixth sternite armed, the seventh with a median longitudinal carina.

♀. Second sternite closely and finely punctured.

Including *atrospinosa* Turner.

B. atrospinosa Turner (figs. 6, 6 a-e). *Ann. Mag. N.H.* xx, p. 289, ♂, ♀. 1917.

♂. 18 mm. long. Black. Mandibles except at the base, clypeus, labrum, sides of the face and its base between the antennae, a curved bilobed streak below the anterior ocellus, posterior orbits, scapes below, sides of the pronotum and a rectangular macula on the mesopleurae in front, pale straw yellow. Wide transverse bands on the first six tergites and triangular lateral marks on the second to fifth sternites, lacteous. Legs pale yellow, the anterior femora above, and the anterior tibiae on the outside, black; middle and hind

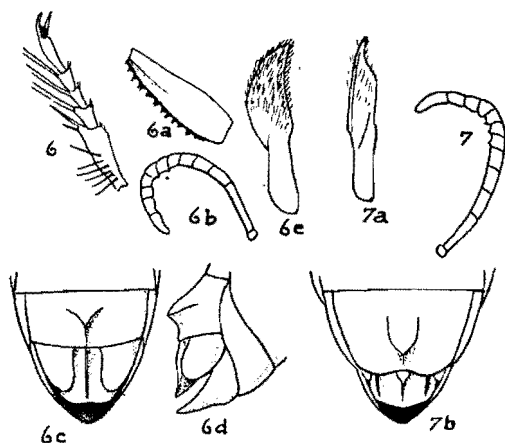


Fig. 6. *Bembex atrospinosa*, ♂, anterior tarsus, ventral view; a, ♂, left middle femur; b, ♂, flagellum; c and d, ♂, sixth and seventh sternites; e, ♂, outer paramera, right half from above.

Fig. 7. *Bembex albofasciata*, ♂, flagellum; a, ♂, outer paramera, right half; b, ♂, sixth and seventh sternites.

femora rufescent and streaked with black above, the middle and hind tibiae with a narrow black line on the outside. Tegulae fuscous, with a yellow spot in front. Wings hyaline, the veins black. Pilosity and pubescence whitish, the former fairly long and dense on the vertex and epinotum. Mesonotum, mesopleurae and scutellum closely and microscopically punctured, the epinotum a little more strongly but still finely punctured. Tergites 1-6 finely and shallowly punctured, moderately shining, the seventh with a sparse and fairly strong puncturation. Second sternite very finely, shallowly and closely

punctured and dull at the base, somewhat rugulose near the apical margin, the other sternites shining, with a sparse and shallow puncturation. Eyes almost parallel. Clypeus convex, not flattened in front, about twice as wide in front as long. Second joint of the flagellum slender, four and a half times longer than wide at the apex, two and a half times longer than the third; seventh and eighth joints with a very small spine at the base, the apical joint curved, attenuated apically and longer than the penultimate joint. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus half of the fourth joint. Vertex fairly deeply impressed on each side of the ocellar area. Second sternite with a very high and broad, compressed tooth, rounded at its apex. Sixth sternite with a triangular platform, which is acute at the apex. Seventh sternite with a median longitudinal carina. Seventh tergite narrowly truncate at the apex, its ventral flaps large and wide. Basal joint of the anterior tarsi slightly dilated outwardly at the apex, where it has two yellowish spines; a large space separates the latter from six black spines on the basal half which are inserted on the middle line of the joint and not on the outer margin as usual. Middle femora serrate along the whole of their posterior margin, the teeth black. Outer paramera of the genitalia wider on the apical half than on the basal, rostrate and finely pilose.

♀. 17 mm. long. Yellow markings on the head and thorax deeper than in the ♂, lemon yellow. Posterior margin of the pronotum and scutellum yellow. Legs pale ferruginous above, ochreous below. Clypeus with two small black spots at the base, the flagellum ferruginous below, brownish above. The bands on the first five tergites not quite so pale as in the ♂, having a tinge of yellow. First sternite ferruginous, sixth tergite black at the base, reddish yellow apically. Second joint of the flagellum slender as in the ♂. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. Sternites 1-5 microscopically and closely rugulose and dull; the sixth shining, except at the base, and with a sparse, coarse puncturation. Sixth tergite narrowly rounded at the apex. Basal joint of the anterior tarsi with eight long spines on the outer margin, the basal three ferruginous and shorter than the others, which are black. Vertex shallowly impressed at the sides of the ocellar area.

Willowmore, C. P. (Dr H. Brauns).

6. ALBOFASCIATA Group.

Face wide. Eyes feebly divergent below.

♂. Middle femora dentate, middle tibiae with one spur, middle tarsi normal. Second sternite with a tooth, the sixth with a platform, the seventh with a carina on each side.

♀. Second sternite with fine and coarse puncturation.

Closely allied to the *atrospinosa* group, from which it differs chiefly by the puncturation of the second sternite in the ♀ and by the shape of the genitalia in the ♂.

Including *albofasciata* Smith. The two species *speciosa* Arn. and *cultrifera* Arn. may be provisionally attached to this group.

B. albofasciata Smith (figs. 7, 7 a and b, Plate VI, figs. 1, 2). *Ann. Mag. N.H.* XII, p. 296, ♂. 1873.

B. Karschii Handl. *Loc. cit.* p. 742, ♂, ♀.

♂. 18 mm. long. Very similar in colour to *atrospinosa*, but differing therein as follows. The clypeus has a large, rhomboid black spot on each side of the base. All the femora are black above, the middle in the basal half and the

hind femora excepting the apex are black also below. Tibiae black on the inside, the anterior pair also with a short black streak on the outside. The bands on the abdomen are lacteous as in *atrospinosa*, but are more dilated at the sides. The puncturation of the thorax is stronger than in that species, but still fairly fine. The sternites are much more strongly punctured, and moderately shining, the punctures largest on the second sternite. Eyes as in *atrospinosa*, the interocular distance on the vertex the same as in that species. Vertex not deeply impressed at the sides of the ocellar area. Second joint of the flagellum three and a half times longer than wide at the apex, three-fifths longer than the third; sixth to eighth joints feebly spined at the base, the ninth to eleventh moderately excavated below, the apical joint slightly curved and longer than in *atrospinosa*, being nearly twice as long as the penultimate. Second sternite with a compressed tooth, not so high as in *atrospinosa*, and ending in a blunt right angle. Sixth sternite with a semi-elliptical platform in the middle, the seventh with a carina on each side and a small triangular platform in the middle at the base. Seventh tergite semi-elliptical, coarsely punctured and shining, its ventral flaps small and not covering the seventh sternite. Spines of the tarsal comb whitish, the basal joint with six spines on the outer margin. Middle femora serrate along the whole of their posterior margin. Outer paramera not so wide in the apical half as in *atrospinosa*.

♀. 19 mm. long. The pale colour on the face and legs is chrome yellow, and the whole of the scape is of that colour. Posterior margin of the pronotum, sides of the mesonotum, narrow transverse bands on the posterior margin of the scutellum and metanotum, the lateral margins of the median area of the epinotum and the pale bands on the abdomen, chrome yellow. Sixth tergite black at the base, ochreous elsewhere, its sides with blackish setae. Pubescence and pilosity on the vertex and mesonotum pale fulvous. Labrum and clypeus sparsely and rather strongly punctured. Second joint of the flagellum three-fourths longer than the third. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. Second sternite dull, with a close and fine puncturation intermixed with larger, shallow and oblique punctures, a narrow median longitudinal line impunctate. Third to sixth sternites dull, more closely and more finely punctured than the second, the sixth with a scattered and larger puncturation in addition. Sixth tergite triangular, closely striato-punctate, the apex narrowly rounded. Basal joint of the anterior tarsi with seven spines on the outer margin, the basal spine short and thin.

De La Rey and Johannesburg, Transvaal: Cape Province.

B. speciosa n.sp. (figs. 8, 8 a-e).

♂. 19 mm. long. Closely allied to *albofasciata*, the sculpture, pilosity and shape of the abdominal fasciae being as in that species. Black. Mandibles except at the apex, labrum, clypeus and the rest of the head with markings like those of *albofasciata* but of a lemon yellow colour. Scares yellow excepting a small black spot at the apex above. Flagellum fusco-ferruginous above, ochreous below excepting the second joint which is pale lemon yellow. Pronotum, excepting a broken black band in front, and the greater part of the sides and lower surface of the thorax, lemon yellow; the hind margin of the mesopleurae, a spot at their middle, the margins of the epimerum and the anterior margin of the sides of the epinotum, more or less black. Sides of the mesonotum and two clavate streaks on its anterior half, posterior margin of the scutellum, anterior and posterior margins of the metanotum and the median area of the epinotum excepting the base, pale lemon yellow. Abdominal

bands lemon yellow, but paler in the middle, more abruptly dilated at the sides than in *albofasciata*. Apical margin of the sixth tergite and sternite, seventh tergite except in the middle, and apical half of the seventh sternite, ferruginous. Genitalia ferruginous, the apical fourth of the outer paramera pale yellow. Legs chrome yellow with small black spots or streaks above on the femora and base of the tibiae. Sculpture very much like that of *albofasciata* but the mesonotum is closely and obliquely punctured and somewhat transversely rugulose. Clypeus slightly flattened in front. Scapes two and a half times longer than wide, much thicker than in *albofasciata* in which they are nearly three and a half times longer than wide. Second joint of the flagellum nearly three times longer than wide at the apex and about one-half longer than the third, seventh to tenth joints feebly dentate on the posterior margin, the tenth and eleventh excavated below, the apical joint excavated at the base below, curved and obliquely truncate at the apex. Eyes slightly divergent below. Interocular distance on the vertex nearly equal to the length of the first four joints of the flagellum. Second sternite with a high compressed tooth, rounded

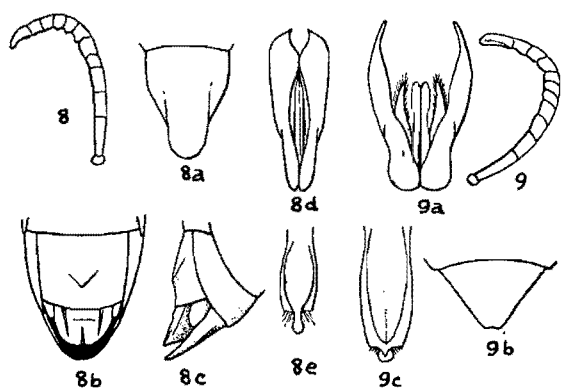


Fig. 8. *Bembex speciosa*, ♂, flagellum; a, ♂, seventh tergite; b and c, ♂, sixth and seventh sternites; d, ♂, genitalia; e, ♂, eighth sternite seen from above.

Fig. 9. *Bembex cultrifera*, ♂, flagellum; a, ♂, genitalia; b, ♂, seventh tergite; c, ♂, eighth sternite from above.

at the apex; sixth sternite with a very low triangular platform, the seventh with widely separated lateral carinae and a low median carina on the apical half, and transversely impressed at the base. Seventh tergite like that of *albofasciata*, semi-elliptical, but narrower and more parallel-sided, coarsely but not closely punctured. Anterior tarsi simple, the basal joint with seven whitish spines on the outer margin and a very thin short one at the base. Middle femora strongly and irregularly serrate behind, the teeth yellow; middle tibiae with one spur, slightly swollen near the middle and produced outwardly into a point at the apex. Outer paramera of the genitalia only slightly widened over the apical half, rapidly acuminate towards the apex.

♀. 19 mm. long. Very much like *albofasciata* ♀ and with the same colour pattern on the abdomen, excepting the sixth tergite which is ferruginous. The coloration of the head and thorax is similar to that of the ♂, but the clypeus is black at the base, the flagellum black above, ochreous below excepting the lemon yellow second joint, and the yellow colour of the thorax is deeper or chrome yellow. The mesonotum has a clavate yellow streak on each side near the middle and a transverse one at the base; these may be very small

or absent and are never so greatly developed as to unite to form a U-shaped mark. The yellow on the epinotum is more extensive than in the ♂, the declivity being all yellow except for a V-shaped black mark outside the median area. The black markings on the legs are more extensive than in the ♂. The superficial resemblance to *albofasciata* ♀ is very great, but the colour of the sixth tergite and the sides of the thorax which are mostly yellow and the carinate sixth sternite suffice to distinguish the species on closer examination. Eyes distinctly divergent below. Second joint of the flagellum three-fifths longer than the third. Interocular distance on the vertex equal to the length of the second, third and fourth joints of the flagellum or nearly equal to the length of the first four. Second sternite closely punctured all over, finely so at the base, the apical half slightly shining and with a larger but still fairly fine puncturation. Sixth sternite with a distinct median longitudinal carina. Sixth tergite coarsely and closely punctured, distinctly narrower in the apical half than in *albofasciata* ♀. Basal joint of the anterior tarsi with seven long yellowish spines on the outer margin, not including the thin and short one at the base. Otherwise like the ♂.

Gwaai, Victoria Falls and Matopos, S. R. January to February (G. Arnold); Sanyati Valley and Bulawayo (R. H. R. Stevenson). Types in the Rhodesia Museum.

By the structure of the genitalia this species falls within the *albofasciata* group, but it is an aberrant member on account of the closely punctured second sternite of the ♀.

B. cultrifera n.sp. (figs. 9, 9 a-c; Plate VI, figs. 4, 44).

♂. 15-18 mm. long. Colour pattern very much like that of *speciosa* but the pale bands on the abdomen are dirty lacteous as in *albofasciata*, and the seventh tergite is ferruginous only at the sides and apex. The sides of the thorax are mainly black, the mesopleurae have a Y-shaped yellow mark only on the anterior lower angle. The pale bands on the scutellum and metanotum are wider than in *speciosa*, that of the scutellum nearly always interrupted in the middle. The epinotum is entirely black. Legs yellow except for a small black spot at the base of the middle and hind tibiae, and the upper side of the hind femora which is very pale reddish. Flagellum brownish red above, ochreous below. Wings hyaline, the veins blackish. Sculpture of the mesonotum stronger than in either *albofasciata* or *speciosa*, without transverse rugulosity, the punctures larger and nearly round. Sternites punctured in the same way as in *speciosa*. Seventh tergite with a shallow, irregular and large puncturation. Second joint of the flagellum a little more than three times longer than wide at the apex, half as long again as the third; fifth to eleventh joints slightly excavated below, the joints simple or without distinct spines on the posterior margin, the twelfth joint curved, not attenuated, blunt at the apex and nearly twice as long as the preceding joint. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. Second sternite with a strong median carina which ends in a sharp tooth a little before the hind margin. Sixth and seventh sternites as in *speciosa*, but the triangular platform on the sixth is narrower and more acute at the apex. The eighth sternite has an apical process not unlike that of *speciosa*. Seventh tergite broadly triangular, narrowly truncate at the apex. Genitalia quite different from those of *speciosa*, the outer paramera being cultrate, gradually narrowed from the middle towards the apex, where they are thin and acute. Basal joint of the anterior tarsi with seven yellow spines on the outer margin; the middle femora dentate along the whole of the hind margin, the teeth

yellow; the middle tibiae with one spur and not produced into a point on the outside.

♀. 18–19 mm. long. Very much like *speciosa* ♀, from which it may be distinguished as follows. Flagellum brownish red above. Anterior femora with a black streak above, the middle and hind pair pale reddish above. Mesonotum without yellow streaks on the disc. Mesopleurae, metapleurae and sides of the epinotum black, the mesopleurae with a reversed cuneiform yellow macula on its upper half. Declivity of the epinotum entirely black. Yellow bands on tergites 1–5 not shallowly bisinuate on their anterior margins as in *speciosa*, but abruptly bi-emarginate. Sixth tergite ferruginous at the sides and apex, yellow in the middle and with a black spot on each side of the base. Second sternite with the middle part shining, coarsely and sparsely punctured, dull, closely and finely punctured at the sides. Sixth sternite subcarinate only over the apical half. Eyes less divergent below than in *speciosa*. Second joint of the flagellum three-fourths longer than the third. Interocular distance on the vertex equal to a little more than the length of the first four joints of the flagellum. Punctuation of the mesonotum coarser, and of the median area of the epinotum finer than in *speciosa*. Otherwise like the ♀ of that species.

Bulawayo. December (R. H. R. Stevenson). Types in coll. Stevenson. (R.M. coll.)

7. SCAURA Group.

Eyes distinctly divergent below; the face rather narrow.

♂. Basal joint of the anterior tarsi dilated, the spines inserted not on the outer margin but between the latter and the middle line of the joint. Middle femora dentate on the posterior margin; middle tibiae with one spur. Second and sixth sternites armed, the seventh with a median carina. Genitalia quite unlike those of any other member of the genus, the apical half of the outer paramera very broad. Apical joint of the flagellum very long and strongly twisted.

♀. All the sternites dull, very finely and closely punctured. Including *scaura* Arn., a large, robust species allied to the *atrospinosus* group by the structure of the anterior tarsi in the ♂.

B. scaura n.sp. (figs. 10, 10 a–e; Plate VI, fig. 51).

♂. 21 mm. long. Black. Mandibles except at the apex, labrum, clypeus, sides of the face, a triangular area between the antennal sockets extending to, and uniting with a transverse sinuate bar below the ocelli, posterior orbits, posterior margin and sides of the pronotum, posterior half of the tegulae and a large macula below them on the mesopleurae, pale lemon yellow. (In one specimen there are two black spots at the base of the clypeus.) Scapes and flagellum ochreous, the two basal joints of the latter and a streak on the upper side of the scapes, black. First five tergites with moderately sinuate lacteous bands, narrowed in the middle, the sixth tergite, except at the base, chrome yellow; the seventh with a large apical spot of the same colour. (In one specimen the sixth tergite has a yellow band interrupted in the middle.) Legs pale yellow, the upper side of the femora and narrow streaks on the tibiae, black. Wings hyaline, the veins dark brown. Pubescence and pilosity white. Labrum and clypeus with silvery pubescence. The shape of the pale bands on the tergite are like those of *atrospinosus*. Punctuation of the thorax very fine and close, but not so fine as in *atrospinosus*. Tergites 1–6 finely and very shallowly punctured, the seventh coarsely and closely punctured except at the

apex. Sternites moderately shining, the second to fourth and the sixth with a shallow and fairly large puncturation, the fifth closely and very finely punctured. Clypeus and labrum impunctate. Clypeus convex, slightly flattened in the middle in front, about twice as wide as long. Eyes distinctly divergent below. Face unusually narrow. Interocular distance on the vertex equal to the length of the first four joints of the flagellum; the vertex fairly deeply impressed at the sides of the ocellar area. Second joint of the flagellum nearly two and two-third times longer than the third, and three times longer than wide at the apex; seventh to twelfth joints deeply excavated below, the eighth to tenth with two small spines on the lower hind margin, the eighth to eleventh strongly produced in front apically, the twelfth strongly twisted and about twice as long as the penultimate. Second sternite with a large, compressed and rounded tooth like that of *atrospinosus*. The sixth and seventh sternites also as in that species. Seventh tergite wide, rounded at the apex, the sides feebly sinuate. Anterior tarsi similar to those of *atrospinosus*; the basal joint is distinctly dilated apically, the apex has two short black spines which are separated by a wide space from four slightly longer black spines on the basal half. As in *atrospinosus* these are not inserted on the outer margin but between the latter and the middle line. Between the two sets of spines there is a whitish, translucent and somewhat swollen area. Middle femora with four black spines on the posterior margin. Middle tibiae with one spur, not produced into a point outwardly. Outer paramera of the genitalia very wide, angular at the apex and at the sides in front.

♀. 21 mm. long. Clypeus with two black spots at the base. Pronotum more extensively yellow than in the ♂. Sides of the mesonotum, transverse bands on the posterior margins of the scutellum and metanotum, lateral margins of the median area of the epinotum and median transverse bands on the first five tergites, chrome yellow. Sixth tergite with a small chrome yellow spot at the apex. The bands on the tergites are more widely dilated at the sides than in the ♂. All the sternites dull, very closely and finely punctured. Sixth tergite triangular, closely and fairly strongly punctured, the apex narrowly rounded. Face not quite so narrow as in the ♂. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus half of the fourth; the second joint of the flagellum two and a third times longer than the third. Tarsal comb composed of long ferruginous spines, the basal joint broad, about twice as long as wide at the apex, the outer margin with six spines. Otherwise like the ♂.

Sawmills, S. R. 1 ♂, April (G. Arnold); 1 ♂ also from Sawmills, and 1 ♀ from Sanyati Valley, S. R. (R. H. R. Stevenson).

Type of ♂ from Sawmills in the Rhodesia Museum, of the ♀ in coll. Stevenson.

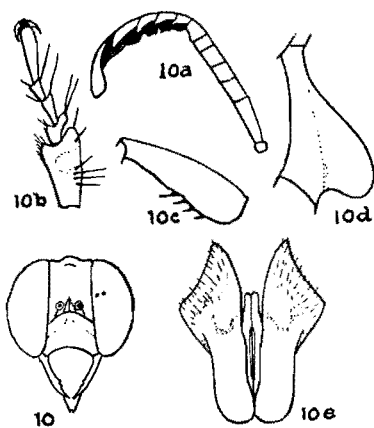


Fig. 10. *Bembex scaura*, ♂, head; a, ♂, flagellum; b, ♂, anterior tarsus; c, ♂, middle femur; d, ♂, second sternite; e, ♂, genitalia.

8. AFRA Group.

Face wide. Eyes barely divergent below.

♂. Middle femora dentate, middle tibiae with one spur and produced into a point at the apex, middle tarsi simple. Second and sixth sternites with a longitudinal tubercle, the seventh sternite tectiform, with a median carina and short lateral ridges near the base. Seventh tergite widely rounded.

Including *afra* Handl.

B. afra Handl. (figs. 11, 11a and b; Plate VI, fig. 6). *Loc. cit.* p. 741, ♂.

♂. 15–18 mm. long. Black. Lateral margins of the labrum and clypeus, posterior orbits very narrowly, a thin line on the scapes in front, the upper margin of the pronotum, pronotal tubercles, transverse bands on the first six tergites, that of the first widely, of the following narrowly interrupted in the middle, and very narrow apical bands, widely dilated at the sides, on the second to fourth sternites, pale yellow. Legs yellow, the femora above and a thin line on the outside of the tibiae, black. Wings hyaline, the veins brown. Thorax with a shallow, and not very close semi-punctuation. Sternites coarsely and not closely punctured. Punctuation of the thorax and tergites fairly fine, oblique and close. Eyes nearly parallel. Interocular distance on the vertex equal to the length of the first five joints of the flagellum. The second joint of the latter four-fifths longer than the third, the fifth and sixth slightly dilated on the outer margin, the seventh and eighth feebly spined below, the ninth to eleventh excavated below, the apical joint gradually narrowed towards its end, transversely compressed and longer than the eleventh. Second sternite with a low median longitudinal carina which is depressed before reaching the apical margin; the sixth with a small median spine, the seventh with a median carina which is flattened at the base. Middle femora distinctly serrate along the whole of the hind margin, the teeth black and acute. Middle tibiae produced into a point at the apex on the outside, and with one spur. Seventh tergite wide, almost semicircular, shining, sparsely and not coarsely punctured.

The description given above is based on a specimen from the Vienna Museum bearing a label "*afra* m. det. Handlirsch." The seventh sternite does not show the lateral ridges near the base mentioned in Handlirsch's description.

Cape Province.

9. BIDENTATA Group.

Eyes distinctly divergent below. Face moderately wide. Wings long.

♂. Middle femora sometimes dentate on the hind margin. Middle tibiae without an apical point, with one spur. Second and sixth sternites unarmed, or with small tubercles, the seventh unarmed. The seventh tergite with a well-developed tooth on each side near the base.

♀. Second sternite usually finely punctured in the middle.

Including *Moebii* Handl., *odontopyga* Turner and *Scotti* Turner.

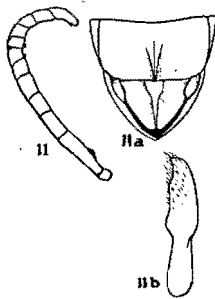


Fig. 11. *Bembex afra*, ♂, flagellum; a, sixth and seventh sternites; b, outer paramera, left half from above.

B. Moebii Handl. (figs. 13, 13 a; Plate VI, fig. 7). *Loc. cit.* p. 775, ♂, ♀.

B. testaceicauda Cam., *Ann. Trans. Mus.* II, p. 144. 1910.

♂. 16–20 mm. long. Black. Labrum, clypeus, scapes, mandibles excepting the apex, sides of the face and a triangular area between the antennal sockets, two small spots below the ocelli, posterior orbits, sides and posterior margin of the pronotum, the sides of the mesonotum adjacent to the tegulae, a more or less triangular mark on the mesopleurae in front of the epimerum, and the legs, chrome yellow. A streak above and below on the hind femora and the extreme base of the hind tibiae, black. Tergites 1–5 with bands across the middle, varying from pale whitish yellow to lemon yellow in colour, that on the first always widely interrupted in the middle, those on the second to fourth bisinuate and usually narrowly interrupted in the middle, that of the fifth usually entire. The apical margin of the sixth tergite, and sometimes also of the fifth, ferruginous. Seventh tergite deep chrome yellow, blackish at the base. Sternites 2–5 with yellow apical bands narrowed and infuscated in the middle, the sixth and following sternites flavo-ferruginous. Flagellum brownish black above, flavo-ferruginous below. Wings hyaline, faintly tinged with brownish yellow, more particularly the upper margin of the radial and the lower margin of the cubital cells; veins dark brown. Pilosity whitish, fairly long and abundant,

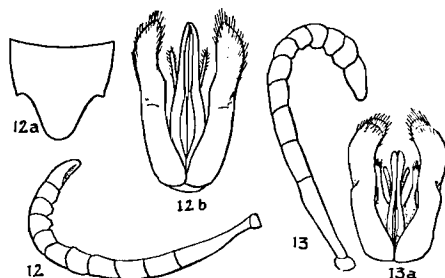


Fig. 12. *Bembex odontopyga*, ♂, flagellum; a, ♂, seventh tergite; b, ♂, genitalia.

Fig. 13. *Bembex Moebii*, ♂, flagellum; a, ♂, genitalia.

yellowish on the mesonotum. Sternites with fulvous pubescence and small tufts of long hairs of the same colour in the middle of the fourth and fifth, the sixth with fulvous pilosity all over. Thorax very closely and finely punctured, the tergites less closely. Second sternite closely and fairly finely punctured, only the median carina, which ends in a low and acute tooth, being shining and impunctate. Third and following sternites sparsely and not coarsely punctured. Clypeus very convex transversely, usually subcarinate at the base. Eyes moderately divergent below. Scapes short and thick, subovate, less than twice as long as wide. Second joint of the flagellum five and a half times longer than wide at the apex and nearly twice as long as the third, the sixth to twelfth joints excavated below, the eighth to eleventh slightly dilated, the apical joint short, about half as long again as the preceding joint and not much narrowed apically. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. Sixth sternite with a low, small and triangular platform, often obsolete or nearly so. Seventh tergite triangular, widely rounded at the apex, with a rectangular tooth on each side at the base. Tarsal comb long, composed of stiff yellow spines, of which there are seven on the basal joint. Middle femora excised at the apex of the hind margin, the lower

angle of the excision forming a distinct tooth. The outer paramera of the genitalia are very distinctly curved inwards apically, blunt at the apex, the apical half clearly convex on the dorsal face.

♀. 17-21 mm. long. Basal half of the clypeus often rufescent or with two reddish brown spots. Scapes reddish yellow above. The mesonotum has two longitudinal streaks of yellow near the middle in front and a transverse one, often broken into two, at the base. Posterior margins of the scutellum, metanotum and epinotal dorsum with narrow yellow bands. The sides of the thorax are in greater part yellow, only the epimerum and base of the mesopleurae, posterior margin of the metapleurae and posterior margin of the sides of the epinotum being black. The bands on the tergites are wider and paler than in the ♂, distinctly bisinuate and entire. Sixth abdominal segment flavo-ferruginous, blackish at the base. Tibiae more or less suffused with ferruginous colour on the outside. Otherwise coloured like the ♂. Mesonotum more strongly punctured than in the ♂, fairly closely so in front but less so on the posterior half and on the scutellum, which are slightly shining. Sternites shining, the second and third sparsely and coarsely punctured in the middle, closely and fairly finely at the sides, the fourth, fifth and sixth finely so at the base, fairly coarsely and sparsely punctured elsewhere. Sixth tergite triangular, widely rounded at the apex, without lateral teeth at the base, closely punctured, the punctures large at the base and becoming smaller and fairly shallow towards the apex. Labrum very distinctly and sparsely punctured. Clypeus subcarinate at the base, slightly flattened in the middle in front. Eyes not so strongly divergent below as in the ♂. Second joint of the flagellum nearly six times longer than wide at the apex and nearly two and a third times longer than the third. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. Scapes thick as in the ♂, but clavate rather than ovate. As in the ♂ the ocellar area is rather flat. Tarsal comb composed of reddish yellow spines, of which there are seven on the basal joint. Otherwise like the ♂.

Delagoa Bay: Victoria Falls, Sawmills, Sanyati Valley and Umtali, S. R. September to December.

Two specimens from the Sanyati Valley and Sawmills (coll. Stevenson) are very much dwarfed, one a ♂, measuring only 13 mm. long, and a ♀ 15 mm. This species is partial to shady situations for its nests, such as ant-bear holes and the sandy ground under dwellings built on piles. (R.M. and T.M. colls.)

B. odontopyga Turner (figs. 12, 12 a and b; Plate VI, fig. 8). *Ann. Mag. N.H.* XIX, p. 439, ♂. 1917.

♂. 19 mm. long. Black. Base of the mandibles, labrum, clypeus excepting two black spots at the base, scapes below, sides of the lower half of the face, and the temples, pale ochreous yellow. Transverse maculae, narrowed inwardly, on the sides of the second to fourth tergites, a bisinuate band on the apical half of the fifth, a band on the sixth and a small spot on each side of the seventh, chrome yellow. The extreme apical margins of the tergites fusco-ferruginous. The apical margins of the second to fifth sternites with chrome yellow bands which are dilated at the sides. Apex of the seventh sternite reddish brown. Legs yellow, the middle and hind femora below and the tibiae outwardly, black. The hind femora are also black above. Wings hyaline, the veins black. Head and thorax with whitish pilosity and pubescence, the mesonotum and abdomen with short brownish pubescence. Thorax very finely and closely punctured, more closely on the mesopleurae than elsewhere, most finely on the mesonotum and scutellum which are slightly shining. Tergites closely and finely punctured; sternites slightly shining, fairly closely, obliquely

and not coarsely punctured. The second sternite is not carinate but has a median longitudinal and shining line, widening towards the base. Seventh tergite strongly punctured, closely so on the basal half. Eyes divergent below. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus half of the fourth. Second joint two and a half times longer than the third, the ninth and tenth joints truncate on the outer margin and excavated below like the eleventh and twelfth; the latter is slightly curved, rounded at the apex and three-fourths longer than the penultimate joint. Seventh tergite with a short tooth on each side near the middle, the apical half beyond the teeth narrowed, broadly rounded at the apex. Sixth and seventh sternites unarmed. The genitalia differ from those of *Moebii* by the flatter outer, and the longer inner paramera. Anterior tarsi normal, the basal joint with seven reddish yellow spines; fore and middle femora not serrate.

Ngara and Fort Jameson, Nyasaland; Sanyati Valley, Penkridge and Mutambara, S. R. (R. H. R. Stevenson).

B. Scotti Turner (Plate VI, fig. 9). *Ann. Mag. N.H.* ix, p. 371, ♂. 1912.

♀. 16 mm. long. Black. Labrum, clypeus excepting two black spots at the base, sides of the face and two spots below the anterior ocellus, yellowish white. Basal half of the mandibles, the carina between the antennae, temples, pronotum, sides of the mesonotum and a U-shaped mark on the middle of same, sides and ventral surface of the thorax, posterior half of the scutellum, the metanotum and an arcuate band on the epinotum, lemon yellow. A spot on the lower part of the mesopleurae and narrow lines margining the sclerites of the pleura are black. Tergites 1-5 with lemon yellow bands, wider at the sides than in the middle and bisinuate except on the first. Sixth tergite yellow, black at the extreme base, the apical margin slightly ferruginous. Sternites yellow, black at the extreme base, the second with a median black spot. Legs yellow. Wings hyaline, the veins fusco-ferruginous. Face and clypeus with a thin silvery pubescence. Pilosity of the head and thorax white, scanty and short. Mesonotum and scutellum shining, very sparsely and finely punctured, the epinotum a little more closely punctured. Sixth tergite strongly punctured. Sternites shining, fairly strongly and sparsely punctured, especially in the middle. Eyes nearly parallel. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth joint. Clypeus subcarinate at the base, the apical half flattened in the middle. There is a short carina between the antennal sockets. Second joint of the flagellum a little more than twice as long as the third, the apical joint blunt and hardly longer than the preceding joint. Tarsal comb long, the basal joint with seven spines.

♂. 16 mm. long. Seventh tergite with a yellow spot at the base. The colour pattern is like that of the ♀ but the yellow is paler, or olive yellow. Tarsi, tibiae and femora simple. The four apical joints of the flagellum are excavated below, the twelfth joint is a little longer than the eleventh, curved, rounded at the apex; ninth to eleventh joints produced below at the apex, the sixth joint at the apex and the seventh at the base, thickened. Second sternite simple, the sixth feebly carinate on the apical half, the apex emarginate, the seventh simple. Seventh tergite with a tooth on each side near the base. Otherwise like the ♀.

Zungeru, Nigeria.

A small species with the livery of *B. ulula* Arn., for which at a first glance it might be mistaken.

10. DIVERSIPENNIS Group.

Face narrow, the eyes strongly divergent below. Wings fairly long.

♂. Second sternite with a small longitudinal tubercle, the sixth armed, the seventh with two parallel and widely separated longitudinal carinae.

♀. Second sternite smooth and shining in the middle, without fine puncturation.

Including *diversipennis* Smith, *ugandensis* Turner, *Bequaerti* Arn., and *venusta* Arn.

B. diversipennis Smith (Plate II, fig. 4, vol. XI, part I; figs. 14, 14 a-c). *Ann. Mag. N.H.* XII, p. 297, ♂, ♀. 1873.

B. Johnstoni Turner. *Ann. Mag. N.H.* X, p. 372, ♂. 1912. Turner, *Ann. Mag. N.H.* XIX, p. 437. 1917.

♂. 24-25 mm. long. Black. Labrum, mandibles excepting the apex, anterior third of the clypeus and sides of the face narrowly, pale whitish yellow; the temples chrome yellow. Ocellar area black, the rest of the head including the eyes, ferruginous. Antennae pale ferruginous, the scapes blackish in front. Pronotum, tegulae, sides of the mesonotum and a mark on the sides of the epinotum anteriorly, ferruginous. Pronotal tubercles yellow behind. Tergites 1-6 with large chrome yellow maculae on each side, the apical margin of the fifth, the sixth excepting the lateral maculae and the whole of the seventh, ferruginous. Apical half of the sixth and all the seventh sternite, ferruginous. The black areas of the tergites have a distinct steely blue lustre. Legs ferruginous, the middle and hind femora yellowish above at the apex, the anterior coxae lemon yellow below, the apical joint of the anterior tarsi black above, of the other tarsi black over the apical half; claws black. Wings hyaline, the veins fusco-ferruginous. Pilosity and pubescence white, short and scanty, except on the temples, anterior coxae, posterior margin of the anterior femora and sides of the thorax, where it is long. Mesopleurae fairly strongly and closely punctured, the mesonotum very finely and closely punctured. Sternites shining, the second coarsely and not closely punctured at the sides, a narrow median area at the base almost impunctate. The following sternites are very sparsely punctured in the middle, fairly closely at the sides. Clypeus convex, not flattened in front, subcarinate at the base. Eyes moderately divergent below. Scapes a little more than twice as long as wide. Second joint of the flagellum a little more than twice as long as the third and about four times longer than wide at the apex; seventh to twelfth joints dilated, the sixth to ninth slightly, and the tenth to twelfth deeply excavated below, the seventh to ninth feebly dentate behind, the apical joint moderately curved, bluntly pointed at the apex and twice as long as the penultimate joint. Interocular distance on the vertex equal to the length of the second and third joints of the flagellum. Second sternite with an acute curved spine in its apical half; sixth sternite with a low triangular platform which is acute at the apex and projects slightly beyond the posterior margin of the segment; seventh sternite with a curved carina on each side. Seventh tergite broad, narrowly rounded

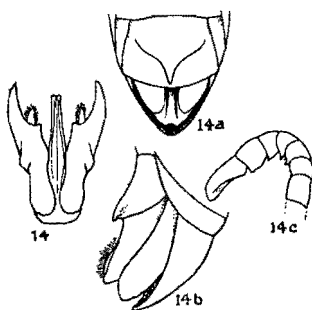


Fig. 14. *Bembex diversipennis*, ♂, genitalia; a and b, ♂, sixth and seventh sternites; c, ♂, apical joints of the flagellum.

at the apex, fairly closely and strongly punctured. Basal joint of the anterior tarsi with seven or eight ferruginous spines. Anterior femora excavated below over the basal half, middle femora excavated below over the apical two-thirds, middle tibiae flattened below, without a large spur and not produced to a point at the apex. The basal joint of the middle tarsi is feebly and angularly dilated close to the base. Outer paramera of the genitalia acute at the apex, strongly angulated on the outside at about the middle. (The figure 6, Plate II, in Handlirsch's monograph is inaccurate and misleading, the apical portion of the paramera having been drawn too slender and too abruptly narrowed from the basal portion.)

♀. 22–24 mm. long. Face entirely ferruginous, somewhat paler at the sides and on two spots below the ocellar area, but not whitish yellow as in the ♂. Scapes without a black mark below. Pronotal tubercles entirely ferruginous. Lateral maculae on the tergites paler than in the ♂, pale lemon yellow or whitish yellow; sixth abdominal segment and apical margin of the fifth tergite, ferruginous. Basal two-thirds of the fore wing and nearly the whole of the hind wing strongly tinged with dark brown. Sternites shining, very coarsely and sparsely punctured in the middle, more finely and more closely at the sides. Otherwise like the ♂ in colour and sculpture. Eyes very slightly divergent below. Second joint of the flagellum nearly twice as long as the third, and four and a half times longer than wide at the apex. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. Sixth tergite triangular, narrowly rounded at the apex. Middle femora and tibiae not excavated below. Otherwise like the ♂.

Central Africa from Angola to Uganda, and southwards as far as the Transvaal and S.W. Africa (Tsumeb). (R.M. and T.M. colls.)

B. venusta n.sp. (figs. 15, 15 a–d; Plate VI, figs. 35, 47).

♂. 24 mm. long. Black. Mandibles excepting the apex, labrum, clypeus, the whole of the scapes, face, vertex excepting the ocellar area and a bilobed macula below it, temples, pronotum excepting a ferruginous band in front,

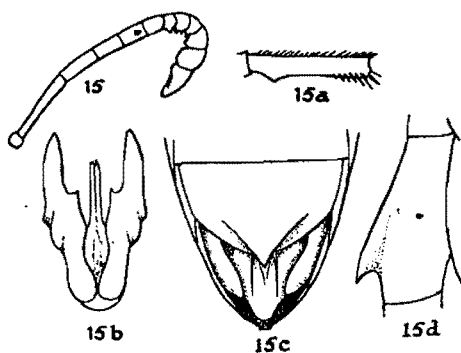


Fig. 15. *Bembex venusta*, ♂, flagellum; a, ♂, middle tarsus, basal joint; b, ♂, genitalia; c, ♂, sixth and seventh sternites; d, ♂, second sternite.

sides of the mesonotum opposite the tegulae, posterior two-thirds of the scutellum, metanotum excepting the extreme posterior margin, the dorsum of the epinotum excepting the base and an arcuate black band outside the median area, chrome yellow. Flagellum pale ferruginous. Tergites 1–6 chrome yellow, the first four with apical black bands angularly dilated in the middle,

the fifth and sixth with narrow ferruginous apical bands, the first black on the declivous face and with two round black spots on the brow, the second and third each enclosing black maculae. Seventh tergite black at the extreme base, ferruginous in the middle and yellow at the apex. Sternites black, the apical third of the sixth sternite ferruginous. Legs yellow, the anterior femora above, the middle femora except on the posterior margin and the hind femora, ferruginous. The hind femora are somewhat blackish below and the apical joint of all the tarsi is in greater part black. Wings hyaline, the veins ferruginous. Pilosity of the head and thorax whitish, noticeably dense on the lower half of the temples, on the anterior coxae and on the posterior margin of the anterior femora. Mesonotum finely, closely and shallowly punctured. Sternites 2-6 coarsely and sparsely punctured, more coarsely in the middle than at the sides. Seventh tergite closely and fairly strongly punctured basally, the apical half sparsely punctured. Clypeus slightly flattened in the middle in front. Inner margins of the eyes distinctly divergent below. Face sharply carinate between the antennal sockets. Second joint of the flagellum five and a half times longer than wide at the apex and nearly twice as long as the third, the sixth emarginate behind apically, the seventh and ninth spinose, the eighth bispinose posteriorly, the seventh to twelfth dilated, especially the tenth, eleventh and twelfth, the last six excavated below; the apical joint subtriangular, half as long again as the penultimate. Interocular distance on the vertex nearly equal to the length of the second and third joints of the flagellum, or to that of the first and second plus half of the third. Second, sixth and seventh sternites like those of *diversipennis* but the triangular platform on the sixth is wider. The genitalia are similar to those of *diversipennis* but the apical portion of the outer paramera is broader and less acute at the apex. The structure of the legs is the same as in *diversipennis*.

♀. 23 mm. long. Labrum and anterior half of the clypeus yellowish white, the basal half of the latter pale ochreous. Scapes ochreous. Face and vertex, excepting the black ocellar area, posterior orbits and anterior half of the pronotal collar, reddish or brownish ochreous. Tergites 1-5 with the black at the base and apex more extensive than in the ♂, so that the yellow bands are more deeply sinuate, those of the fourth and fifth more or less interrupted in the middle; sometimes the black indentations at the base of the second and third are separated from the extreme base, forming discrete maculae on each side of the middle. Sixth tergite black at the base, ferruginous at the apex. Wings as in *diversipennis* ♀, but the brown cloud is not quite so dark as in that species. Eyes less divergent below than in the ♂. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. The second joint of the flagellum is nearly five and a half times longer than wide at the apex. Sixth tergite closely punctured, more finely so than in the ♂, the basal half also somewhat striolate lengthwise. Basal joint of the anterior tarsi with six ferruginous spines. Otherwise like the ♂.

Kamanyab, S.W. Africa, 1 ♂, type; Ombombo, S.W. Africa, 1 ♂; Ongandjera, Otjimbembe and Erickson's Drift, S.W. Africa, 1 ♂, 8 ♀♀. Type of ♀ from Ongandjera. Types in the South African Museum.

B. ugandensis Turner (figs. 16, 16 a-c; Plate VI, figs. 10, 50). *Trans. Ent. Soc. London*, p. 746, ♂, ♀. 1912.

♀. 23 mm. long. Black. Basal half of the mandibles, labrum, lateral and anterior margins of the clypeus, sides of the face, two spots below the ocellar area, scapes below, temples, sides of the pronotum, a spot on the mesopleurae above, an arcuate band on the epinotal dorsum, sides of the epinotal dorsum

posteriorly and transverse bands on the first three tergites, lemon yellow. The band on the first tergite narrowed medially, the second with an oblong black spot on each side of the middle, the third narrow, widest in the middle. Legs yellow, the anterior tibiae outwardly, the femora above and below basally, black; tarsi reddish yellow. Wings hyaline. Clypeus with a few large punctures on the anterior half. Punctuation of the thorax close and oblique, of the tergites also oblique, finer and less close than on the mesonotum. Second sternite sparsely and coarsely punctured and shining, the lateral margins more closely punctured, the remaining sternites similarly punctured but less coarsely than the second in the middle, excepting the sixth. Pubescence and pilosity brownish grey, the fourth to sixth tergites with black pubescence. Clypeus subcarinate at the base. Eyes moderately divergent below. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. Second joint of the flagellum twice as long as the third, the apical joint two-thirds longer than the preceding joint. Extreme apex of the sixth tergite smooth and rounded. Tarsal comb composed of long ferruginous spines, of which there are six on

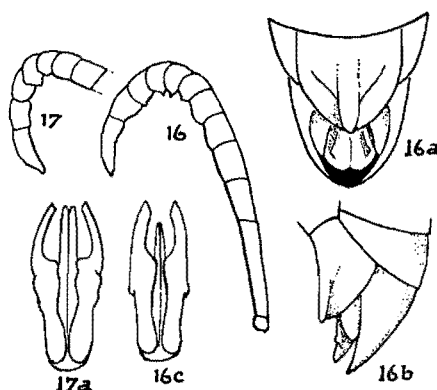


Fig. 16. *Bembex ugandensis*, ♂, flagellum; a and b, ♂, sixth and seventh sternites; c, ♂, genitalia.

Fig. 17. *Bembex Bequaerti*, ♂, flagellum; a, ♂, genitalia.

the basal joint; the latter is black on the outer half and two and a half times longer than wide at the apex.

♂. 23 mm. long. Colour pattern like that of the ♀, but the yellow on the tergites is much paler, more of an olive yellow. The yellow lateral streaks of the face are wider. Second joint of the flagellum two and a quarter times longer than the third, the eighth and ninth with a spine below on the outer margin, the tenth and eleventh concave below, the apical joint twice as long as the penultimate, slightly curved, narrowed to the apex and moderately concave below at the base. Interocular distance on the vertex as in the ♀. Second sternite with a low median carina which ends before the apical margin in a small angular tubercle. Sixth sternite raised in the middle to form an oblong, smooth platform, highest at the apex, which is rounded. Seventh sternite with a low longitudinal carina on each side, widely separated and slightly divergent apically. Seventh tergite rather long, the sides and apex shining and sparsely punctured, the lateral margins convex and rather suddenly narrowed just before the apex which is widely rounded. Middle femora with two or three denticles near the apex. Otherwise like the ♀.

Uganda, Mbale district (S. A. Neave); Entebbe (G. C. Gowdey); Mayolo, Beni, Belgian Congo (J. Bequaert). Types in the British Museum.

B. Bequaerti n.sp. (figs. 17, 17 a; Plate VI, figs. 36, 37).

♂. 23 mm. long. Dull chrome yellow. Mandibles excepting the apex, labrum, clypeus, and the scapes excepting a narrow black streak above, yellow; the sides of the face and the temples brownish yellow. Flagellum black, brownish yellow below. Mesonotum with a longitudinal black bar on each side, widest in the middle, and extending from the anterior to the posterior margin; in the middle there is another black bar, roundly dilated posteriorly, and not reaching the posterior margin. Anterior half of the scutellum black, and the base of the median area of the epinotum also black. The declivous face of the first tergite black at the base and in the middle, the brow of the declivity with two small black spots. The apical margins of the first six tergites with a very narrow dark reddish brown band, the second and third tergites each with two ill-defined, transverse and brownish maculae; the first sternite, base and apical margin of the second, apical halves of the third, fourth and fifth sternites stained with pale brownish yellow. The fourth, fifth and sixth sternites have median black spots at the base, the tubercle of the sixth is also black, and the seventh excepting its apex. Legs yellow, the femora with a pale reddish tinge. Wings hyaline, with a faintly smoky tint, the veins ferruginous excepting the costa and subcosta which are black. Pilosity on the head, thorax and first tergite yellowish grey, short on the mesonotum, fairly long and dense on the temples, anterior coxae and mesosternum. Dorsum of the thorax very finely and very closely punctured, almost reticulate-punctate, the mesopleurae even more finely punctured than the mesonotum. Sternites 2-4 shining, coarsely and fairly sparsely punctured in the middle, closely and rather finely at the sides, the fifth and sixth nearly dull, finely and closely punctured except near the apical margin where there are a few large punctures. Tergites 1-6 with a very fine, short and black pubescence, and very finely punctured. The seventh tergite fairly closely punctured at the sides. Clypeus slightly flattened in the middle in front, subcarinate at the base. The face is very distinctly carinate between the antennal sockets. Eyes strongly divergent below. Second joint of the flagellum four times longer than wide at the apex and two and a third times longer than the third joint, the eighth to eleventh moderately dilated and also excavated below, the apical joint moderately curved, twice as long as the eleventh, acute at the apex. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus half of the fourth. Second sternite with a feeble carina which ends in a small tooth some distance from the apical margin. Sixth sternite with a narrow triangular platform ending in an acute point, not much raised above the rest of the segment, like that of *ugandensis* but more acute. Seventh sternite with a longitudinal carina on each side and a trace of a median one, the lateral carinae are nearer together than in *ugandensis* and less divergent apically. Seventh tergite elongate triangular, not sinuate at the sides, the apex rather narrowly rounded. Basal joint of the anterior tarsi with six yellow spines. The middle femora are somewhat concave below, so that their cross-section is triangular, the posterior margin trenchant but not serrate or dentate.

♀. 24 mm. long. Chrome yellow. Apex of the mandibles, two round spots at the base of the clypeus, face excepting the sides, the base and a triangular spot below the ocellar area, the vertex and occiput, black. A transverse band across the front of the pronotal collar, the mesonotum excepting the lateral

margins and two narrow longitudinal streaks extending over the anterior two-thirds, the anterior and posterior margins of the scutellum and of the post-scutellum, the base of the median area of the epinotum and an arcuate band on the outside of it and an arrow-shaped mark on the mesosternum, black. Tergites 1-5 chrome yellow, with a black apical band which is widest in the middle, the first black at the base, the black joining the apical band in the middle, the second and third each enclosing two transverse and fairly large black maculae, the fourth and fifth with a bilobed black band at the base, the sixth black and with a thin yellow streak on each side. Sternites yellow, the second with the middle third black, yellow at the sides, the third to sixth black, the third to fifth also with triangular yellow maculae at the sides. Legs yellow, a streak on the anterior and middle femora above, and the extreme base of the tibiae above, black. Second sternite shining, coarsely and very sparsely punctured in the middle, moderately closely and much more finely at the sides. Sternites 3-5 finely but not very closely punctured, moderately shining, with a few larger punctures on their apical halves. Sixth sternite dull, very finely and closely punctured, with a median longitudinal carina on its apical half. Sixth tergite closely and fairly strongly punctured, triangular, the sides slightly sinuate, the apex narrowly rounded. Eyes not quite so strongly divergent below as in the ♂. Second joint of the flagellum nearly four and a half times longer than wide at the apex and twice as long as the third joint. Interocular distance on the vertex as in the ♂. Tarsal comb composed of long, thick reddish yellow spines, of which there are six on the basal joint. Otherwise like the ♂.

Pengo, Belgian Congo, February (J. Bequaert), 2 ♂♂, 1 ♀. Types in the Congo Museum, Tervueren.

In spite of the considerable difference in the colour patterns, this species is closely allied to *ugandensis*. The flagellum is very similar, but the eighth and ninth joints are not clearly spinose, and the outer paramera of the genitalia have their apical portion narrower and more arcuate than in *ugandensis*.

B. Bequaerti, var. *dira* n.v. (Plate VI, figs. 38, 39).

♂. Of the same size and robust build as the type of the species, but with the yellow colour less pronounced. The clypeus has a black spot on each side at the base, the sides of the face are chrome yellow, the scapes are black above, the whole of the mesonotum excepting the lateral margins is black and the transverse black bands on the scutellum, metanotum and epinotum are much wider. The mesopleurae are black in front below the pronotal tubercles, and round the margins of the epimerum. The mesosternum is black. The apical black bands on the first six tergites are wider than in the type of the species, and all enclose two sharply defined transverse black maculae. The seventh tergite has the apical margin and sides black. The yellow markings on the sternites are much reduced. The apical joints of the tarsi are black above as well as below. The median carina of the seventh sternite is more distinct than in the type of the species.

♀. The melanism in this sex is more marked than in the ♂. The mesonotum lacks the two longitudinal median streaks of yellow which are present in the type of the species and the scutellum has only a short triangular yellow mark on each side. The difference between this variety and the type of the species is made clear by a comparison of the figs. 36, 37 and 38, 39 in Plate VI.

Stanleyville, Belgian Congo. 1 ♂, 1 ♀, March (J. Bequaert). Types in the Congo Museum, Tervueren.

11. MONEDULA Group.

Face wide. Eyes distinctly divergent below. Wings long.

♂. Middle femora not dentate on the hind margin. Second and sixth sternites with small longitudinal tubercles, the seventh without a distinct carina.

♀. Second sternite shining in the middle, only coarsely punctured.

Including *monedula* Handl., and *albidula* Turner.

B. albidula Turner (figs. 18, 18 a; Plate VI, fig. 12). *Ann. Mag. N.H.* xix, p. 438, ♂. 1917.

♂. 24 mm. long. Black. Basal half of the mandibles, labrum, clypeus at the sides, in front and narrowly in the middle, scapes below, sides of the face as far as two spots of the same colour below the anterior ocellus, temples, prosternum, sides of pronotum including the posterior margin of the pronotal tubercles, the posterior angles of the epinotum and a spot on the upper margin of the declivity, yellowish white. Abdomen black, with a distinct violaceous tint. The first four tergites with yellowish white maculae on each side, narrowed outwardly and abruptly so inwardly, the fifth tergite with maculae of the same colour narrowed inwardly and meeting in the middle, the sixth with a transverse spot of whitish yellow on each side.

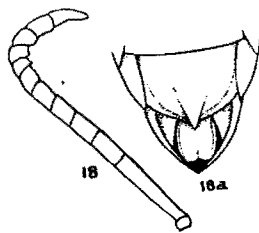


Fig. 18. *Bembex albidula*, ♂, flagellum; a, ♂, sixth and seventh sternites.

The second and third sternites with a small yellowish white spot on each side. Anterior coxae and apical half of the middle coxae yellowish white, the tibiae and anterior femora of the same colour, the former with black streaks above and below and the latter black at the base; middle and hind femora in greater part black. Tarsi dirty white above, fuscous below, the apical joints and the outer margins of all the tarsal joints of the fore legs black. Wings hyaline, the veins black. Pilosity on the head white and fairly long. Eyes divergent below. Clypeus subcarinate at the base. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. The second joint of the flagellum is two and a quarter times longer than the third, the eighth and ninth with a slight tooth at the base, the tenth and eleventh feebly concave below, the twelfth half as long again as the eleventh. Second to fifth sternites shining, sparsely, coarsely punctured in the middle, more finely and closely at the sides. Sixth sternite fairly dull and finely punctured, with a few large punctures on the apical half. Second sternite like that of *ugandensis*, the sixth with a triangular platform acute at the apex. Seventh sternite without distinct carinae, but the lateral margins are slightly swollen. Seventh tergite triangular, narrowly rounded at the apex, closely punctured at the base, sparsely so at the apex. Femora unarmed.

Mussaia, Sierra Leone.

B. monedula Handl. (fig 19; Plate VI, fig. 11). *Loc. cit.* p. 789, ♂, ♀.

"Eyes distinctly divergent below, the face distinctly carinate between the antennae, the clypeus fairly convex, slightly flattened in front. Antennae about as far from each other as from the eyes, almost cylindrical in both sexes, the antepenultimate joints in the ♂ not spinose and not excavated. Wings distinctly infuscated, the veins blackish, two and a half times longer than the width of the thorax in front, the medial cell in the hind wing emitting

two longitudinal veins at the apex. Legs robust, anterior tarsi normal, the basal joint with six spines on the outer margin, middle femora not dentate below, the middle tibiae in the ♂ without a large anterior spur. Abdomen fairly long, . . . the sixth tergite in the ♀ without a pygidial area, widely rounded at the apex, the seventh tergite in the ♂ wide, almost truncate at the apex, the sides sinuate. Second and sixth sternites in the ♂ armed with small and acute tubercles, the seventh indistinctly carinate, the eighth with a long and acute apical spine. Genitalia of a singular shape. Thorax with a short and dense brown pilosity, fairly coarsely and irregularly punctured.

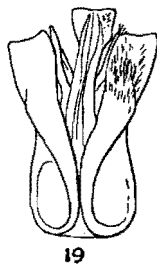


Fig. 19. *Bembex mone-dula*, ♂, genitalia (after Handlirsch).

Body black, with a violaceous lustre on the abdomen; the anterior orbits narrowly and the posterior widely, the labrum, anterior margin and sides of the clypeus and large lateral spots on the first four or five tergites, yellow. Antennae black, the scapes more or less pale below. Legs black. 22–27 mm. long. Delagoa Bay.”

The only example which I have seen is a ♀ from the British Museum. I have copied Handlirsch's figure of the genitalia, which are quite distinct from those of any other African species.

12. ARNOLDI Group.

Eyes parallel. Face wide. Head, thorax and first tergite densely pilose.

♂. Antennae filiform, all the joints of the flagellum cylindrical. Legs normal, the middle tibiae with a large spur. Sternites 1–6 simple and very finely punctured, the seventh with a median carina.

♀. Second sternite shining, sparsely and coarsely punctured in the middle, finely and fairly closely at the sides.

Including *Arnoldi* Brauns.

B. Arnoldi Brauns (figs. 20, 20 a; Plate VI, fig. 15).

♂. 14 mm. long. Black. Mandibles except at the apex, labrum, clypeus, scapes below, sides of the face and the temples in front, pale lemon yellow. The apex of the femora below, the tibiae below and the tarsi pale lemon yellow, the last joint of the tarsi ochreous. Flagellum pale brown below. Wings hyaline, the veins ferruginous. Head, excepting the labrum and clypeus, thorax and first tergite densely clothed with a white pilosity; the remaining tergites with a fairly conspicuous whitish pubescence. Thorax and tergites finely and closely punctured, except the seventh tergite which is coarsely so. Sternites dull, finely and closely punctured, all of them simple except the seventh which has a fine median longitudinal carina. Clypeus very convex and prominent. Scapes slightly clavate, fully three times longer than wide. Second joint of the flagellum twice as long as the third, all the joints cylindrical, the apical joint bluntly rounded at the apex, about half as long again as the

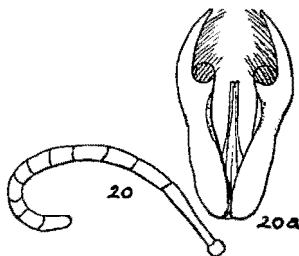


Fig. 20. *Bembex Arnoldi*, ♂, flagellum; a, ♂, genitalia.

penultimate. Vertex very wide, the interocular distance there being equal to the length of the first five joints of the flagellum plus half of the sixth. Basal joint of the anterior tarsi with six whitish spines on the outer margin. Seventh tergite broadly rounded at the apex, the sides very distinctly sinuate. Outer paramera of the genitalia abruptly narrowed at about the apical third, acute at the apex, the narrow portion fringed with long hairs on the inner margin. The genitalia strongly resemble those of the Palearctic *cinctella* group, with which, however, this species has no relationship.

♀. 15 mm. long. Black. The sides of the clypeus and labrum suffused with dirty yellow. There are two ochreous spots below the ocelli, and the temples are narrowly lemon yellow in front. Posterior margin of the pronotum at the sides and the lateral margins of the mesonotum opposite the tegulae, yellow. First tergite with a yellow streak on each side, narrowed inwardly; tergites 2-5 with bisinuate lemon yellow bands. Femora black, with the anterior margin yellow, but only on the apical half on the hind femora. Tibiae black below and on the outer margins, yellow elsewhere, tarsi dirty yellow, suffused with brown underneath. Pilosity and pubescence on the head, thorax and first tergite abundant as in the ♂, but of a brownish white colour, on the vertex and mesonotum pale brown. Sternites fairly shining, coarsely and sparsely punctured in the middle, finely and fairly closely at the sides, the sixth rather sparsely and not very finely punctured. Sixth tergite triangular, narrowly rounded at the apex, shining, closely and fairly finely punctured. The sixth sternite is subcarinate lengthwise in the middle. Second joint of the flagellum three-quarters longer than the third. Interocular distance on the vertex equal to the length of the first four joints of the flagellum, plus two-thirds of the fifth. The vertex is deeply depressed on each side of the ocellar area. Tarsal comb composed of long blackish spines, of which there are six on the basal joint.

Zwartkops and Jeffery's Bay, C. P. November (Dr H. Brauns). Types in coll. Brauns.

According to Dr Brauns's observations this species is confined to sand dunes on the seashore. The ♀ is exceedingly like *carinata* ♀.

13. MELANOPA Group.

Face wide, the eyes barely divergent below. Wings fairly long.

♂. Middle femora dentate behind, often indistinctly or only near the apex; middle tibiae with a spur. Second and sixth sternites with longitudinal carinae or tubercles, the seventh with a carina.

♀. Second sternite shining in the middle, with coarse puncturation only.

Including *melanopa* Handl., *forcipata* Handl., *labidura* Handl. and *carinata* Smith.

B. melanopa Handl. (figs. 21, 21 a-c; Plate VI, figs. 16, 17). *Loc. cit.* p. 797, ♂, ♀.

♂. 15-17 mm. long. Black. Sides of the labrum occasionally, and the middle of the mandibles, dirty yellow, two spots below the ocelli ochreous, the posterior orbits narrowly lemon yellow. A triangular mark on each side of the first tergite and bisinuate bands on the second to fifth tergites lemon yellow, that on the fifth usually interrupted in the middle. Legs yellow, the anterior tibiae and tarsi on the outside, the anterior femora on the outside and below, the middle femora above and at the base below, the middle tibiae behind, the hind femora above and below, the hind tibiae on the inside and a narrow line above, black. The apical joints of all the tarsi blackish. Wings

hyaline, the veins brown. Last three or four joints of the flagellum brownish yellow below. Pilosity on the head and thorax whitish and fairly dense, the clypeus with a dense white pubescence. Mesonotum shallowly and fairly closely punctured, slightly shining. Sternites fairly coarsely punctured, sparsely so in the middle, much more closely at the sides, especially on the second sternite. Clypeus very convex and prominent, subcarinate at the base, slightly flattened in the middle in front. Face feebly carinate between the antennal sockets. Eyes parallel or nearly so. Vertex wide, deeply impressed on each side of the ocellar area. Interocular distance on the vertex equal to the length of the first five joints of the flagellum. Scapes thick. Second joint of the flagellum about one-half longer than the third, the fifth feebly, the sixth to ninth distinctly spinose on the posterior margin, the ninth to eleventh dilated and also excavated below, the apical joint curved, gradually narrowed towards the blunt apex and longer than the penultimate. Second sternite with a median longitudinal carina, slightly rising posteriorly and ending in a rounded angle. Sixth sternite with a narrow triangular platform, the seventh longitudinally carinate over its apical third. Seventh tergite strongly and closely punctured, very widely rounded at the apex. Basal joint of the anterior tarsi with six

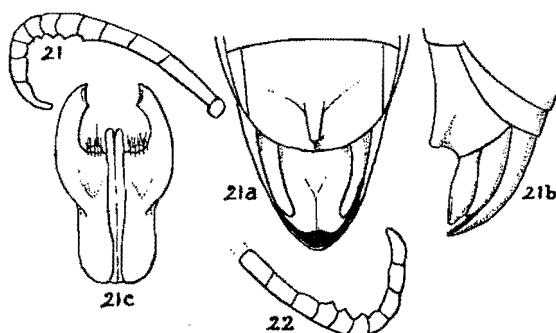


Fig. 21. *Bembex melanopa*, ♂, flagellum; a and b, ♂, sixth and seventh sternites; c, ♂, genitalia.

Fig. 22. *Bembex carinata*, ♂, flagellum.

black spines. Middle femora with two or three teeth on the posterior margin near the apex. The shape of the yellow fasciae on the abdomen is decidedly variable. The commonest pattern is shown in fig. 17, Plate I, but sometimes the bands are wider and much less deeply bi-emarginate in front.

♀. 16 mm. long. Posterior margin of the sides of the pronotum sometimes narrowly yellow. A very narrow line on the posterior margin of the scutellum and an arcuate one on the posterior margin of the median area of the epinotum, pale yellow. Basal joint of the middle and hind tarsi fuscous on the inside, the apical joint of all the tarsi brownish. Tergites 1-5 with dull whitish bands, not yellow as in the ♂. Those on the first and fifth usually reduced to a triangular mark on each side, that of the second enclosing a transverse black spot on each side. Punctuation like that of the ♂, but the second sternite has shallow and very large punctures in the middle. Apical half of the sixth sternite subcarinate longitudinally in the middle. Sixth tergite closely punctured except near the apex, where it is shining and more sparsely punctured. Second joint of the flagellum three-quarters longer than the third. Interocular distance on the vertex as in the ♂. Basal joint of the anterior tarsi with seven black spines, the basal spine shorter than the others.

Natal, Delagoa Bay and S. Rhodesia. (R.M. and T.M. colls.)

Some specimens from Algoa Bay (C. B. Krüger), in the Stevenson coll. appear to be sufficiently distinct to be separated as a race, and to furnish such a direct link between *melanopa* and *forcipata* Handl., as to reduce the latter also to the rank of a subspecies.

B. melanopa race *litoralis* n.r.

This differs from the type of the species as follows.

In both sexes the pilosity on the head and thorax is yellowish grey or pale fulvous as in *forcipata*, but unlike the latter the sides of the thorax are black as in *melanopa*. The mesonotum is quite dull and the puncturation on it closer and finer than in *melanopa*.

♀. Labrum, sides and anterior margin of the clypeus and the scapes below, lemon yellow. The pale bands on the abdomen are distinctly yellow, not yellowish white as in the type of the species, and the bands on the second and third tergites do not enclose oblong black spots, although they are deeply emarginate in front. The yellow of the legs is also deeper than in the type of the species.

♂. Spines of the tarsal comb pale yellow. Apical joint of the flagellum less narrowed, rounded at the apex, not truncate as in the type of the species. Second sternite much more finely punctured, the median longitudinal carina much less developed. Sixth sternite with the median platform much narrower, hardly triangular. The genitalia are exactly like those of the type of the species.

B. melanopa race *forcipata* Handl. *Loc. cit.* p. 798, ♂, ♀.

"Very much like and related to *melanopa*, the thorax a little less strongly punctured, distinguished by the yellowish grey pilosity and by the colour of the head and thorax. Black; the anterior and posterior orbits broadly, the face between the antennae, clypeus excepting often two small spots in the ♂ and a large median spot in the ♀, labrum excepting a median line in the ♀, margins of the pronotum and the pronotal tubercles, large spots on the sides of the prothorax, mesothorax and epinotum, often the posterior angles of the mesonotum, a narrow band on the scutellum in the ♀ (more rarely in the ♂), the greater part of the epinotum in the ♀, maculae on the first segment, fasciae on the second and third segments and often enclosing black spots, sinuate fasciae on the fourth and fifth, and lateral spots on the sixth in the ♂, pale yellow. Antennae black. Scapes yellow in front; legs pale yellow, more or less variegated with black towards the base. 15–20 mm. long. This form agrees so closely with the preceding (*melanopa*) in all structural characters and even in the genitalia that I would not venture to separate them if the slight difference in the puncturation of the thoracic dorsum and the more yellowish grey pilosity were not considered in conjunction with the constant colour differences and the different geographical distribution. Possibly one is dealing only with a local race."

Zanzibar and Tanga, 6 ♂♂, 4 ♀♀.

B. carinata Smith (fig. 22; Plate VI, figs. 13, 14). *Cat. Hymen. B.M.* iv, p. 323, ♀. 1856.

B. venator Smith. *Cat. Hymen. B.M.* iv, p. 323, ♀. 1856.

♂. 16 mm. long. Black. Labrum, mandibles excepting the apex, clypeus, scapes below, sides of the face and the temples narrowly, posterior margin of the pronotal tubercles, sometimes a very narrow band on the scutellum, yellow. The clypeus has two small black spots at the base. A transverse macula

on each side of the first tergite, transverse bisinuate bands on the second to sixth tergites, those of the second and third sometimes narrowly interrupted in the middle, lemon yellow. Legs yellow, the femora black except at the apex, the tibiae with small spots of black on the outside, the basal joint of the fore tarsi black outwardly. Last four joints of the flagellum pale yellow below. Pilosity and pubescence white, the former rather long and abundant on the head and thorax. Dorsum of the thorax dull, closely and finely punctured. Tergites more strongly punctured than the thorax. Second sternite evenly, closely and strongly punctured, the third and fourth very sparsely, the fifth and sixth more closely so, but not as closely as the second. Labrum flattened. Clypeus very convex, not flattened in the middle in front. Eyes parallel. Interocular distance on the vertex equal to the length of the first five joints of the flagellum. The second joint of the latter is about three-fourths longer than the third, the fifth slightly, the sixth to eighth distinctly spined below, the ninth to eleventh dilated, the tenth and eleventh excavated below, the twelfth narrowed to the apex, curved and a little longer than the eleventh. Second sternite with a median longitudinal carina which extends from the base to the apex of the segment; the sixth sternite with a low raised angle in its apical half. The seventh sternite has a feeble median longitudinal carina and is shallowly emarginate at the apex. Seventh tergite coarsely and fairly closely punctured, rounded at the apex. Anterior femora with a very indistinct denticulation at the apex, the middle femora very distinctly dentate along the whole of the posterior margin.

♀. 15 mm. long. Labrum often with a black spot at the base. Clypeus with only the sides and anterior margin yellow. Sides of the face almost entirely black. Outer halves of the femora, anterior tibiae and basal joint of the tarsus and inner half of the posterior tibiae, black. Posterior tarsi fuscous on the inside. The yellow bands on the second to fourth tergites are much narrower than in the ♂, and much reduced on the first and fifth, on the first sometimes nearly obsolete. Third to fifth sternites, sides of the second and base of the sixth fairly finely and not very sparsely punctured. Otherwise like the ♂ in colour, sculpture and pilosity. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. The second joint is three-fourths longer than the third. Tarsal comb long and black, the basal joint with six spines. Sixth tergite triangular, widely rounded at the apex.

Mossel Bay, C. P.

B. labidura Handl. *Loc. cit.* p. 799, ♂.

The following description is based on a cotype "det. Handlirsch" from the Vienna Museum.

♂. This differs from *melanopa* as follows.

Labrum, clypeus, face at the sides and below the antennae, two spots below the anterior ocellus and the scapes excepting a black streak above, yellow. Legs in greater part yellow; fore and middle femora with a black streak above, the hind tibiae with a black streak on the inside. The second to fifth sternites have apical yellow bands, widened laterally and interrupted in the middle. Pronotum, sides of the mesonotum, posterior margin of the scutellum, posterior margin of the epinotal dorsum, mesopleurae excepting the anterior and posterior margins, metapleurae and sides of the epinotum excepting a streak in the middle, yellow. Punctuation of the thorax and abdomen finer and closer than in *melanopa*. Face narrower than in that species; interocular distance on the vertex equal to the length of the first five

joints of the flagellum plus half of the sixth. Second joint of the flagellum not quite half as long again as the third, the apical joint two-thirds longer than the eleventh. The triangular dentiform tubercle on the sixth sternite is less acute and less prominent.

♀. 15–17 mm. long. Clypeus and labrum black in the middle, yellow at the margins, face yellow at the sides as in the ♂. Legs more variegated with yellow than in *melanopa*. Pale markings on the abdomen distinctly yellow, not yellowish white as in *melanopa* ♀. Metanotum and epinotal dorsum with transverse yellow bands. Inner margins of the eyes parallel, not divergent above and below as in *melanopa*. Sixth tergite much more closely punctured than in that species. Interocular distance on the vertex equal to the length of a little more than the first four joints of the flagellum. Second joint of the flagellum half as long again as the third. Tarsal comb fusco-ferruginous.

Central Africa; British East Africa, Mombasa and Lake Mpeketoni. Specimens in the Paris Museum from Basutoland (*Leg.* Ellenberger) which I attribute to this species have the whole head, excepting the posterior orbits and the lateral margins of the labrum, black; the sternites are also black, only the second to fourth having small yellow spots at the sides.

14. MEDITERRANEA Group.

Face fairly wide, the eyes feebly divergent below. Wings long.

♂. Middle femora usually dentate, middle tibiae with a spur. Second and sixth sternites with tubercles or often only feebly carinate, the seventh with a longitudinal carina.

The characters of this group are very much the same as in the *melanopa* group, the difference lying chiefly in the shape of the genitalia.

Including, *intermedia* Dahl., *Baumannii* Handl., *capicola* Handl., *Braunsii* Handl., *Kriechbaumeri* Handl., *velox* Handl., *modesta* Handl., *massaica* Cam. and *fraudulenta* Arn.

B. intermedia Dahl. (figs. 23, 23 a and b; Plate VI, fig. 19). *Hymen. Eur.* 1, p. 491, No. 27, ♀. 1845.

B. olivata Dahl. *Hymen. Eur.* 1, p. 491, No. 29, ♀. 1845.

♂. 15 mm. long. In greater part yellow and whitish. Head lemon yellow, the apex of the mandibles ferruginous; the ocellar area, the middle of the face excepting a transverse band below the ocellar area and a triangular area behind the clypeus, the back of the scapes and the occiput, black. Flagellum black or dark brown above, pale dull yellow below. Pronotum, excepting a black spot of variable size at the sides, lemon yellow. Mesonotum black, the lateral margins and three streaks in the middle which form a more or less U-shaped mark, often incomplete, lemon yellow. Sides of the thorax lemon yellow, the anterior margin of the mesopleurae narrowly, the anterior and posterior margins of the metapleurae, the mesosternum and two spots on the sides of the epinotum, black. Scutellum and metanotum black in front, lemon yellow behind. Epinotal dorsum and declivity black, with arcuate yellow bands of very variable extent across the brow and the base of the declivity. Tergites 1–6 pale glaucous white, the declivous face of the first and the bases of the second to sixth narrowly black, the apical margins of the first five tergites with a blackish brown band, somewhat dilated in the middle. Seventh tergite black, usually with two pale yellowish spots behind the apex. Sternites black, the apical margins very narrowly, and triangular marks at the sides, pale lemon yellow. The black area on the base of the first tergite sometimes has two or more

yellow spots in the middle, and on the sternites the yellow sometimes covers the apical half of the segments. Legs yellow, the femora black at the extreme base and with blackish streaks above. A spot on the underside of the anterior tibiae and the apical halves of the anterior tarsal joints, black. Wings hyaline, the veins brown. Face, vertex, thorax and first tergite with a long, dense and yellowish white pilosity. Mesonotum not very closely punctured; seventh tergite fairly strongly punctured at the sides. Second sternite closely, shallowly and largely punctured, almost rugulose-punctate, the punctures being confluent; the remaining sternites shining, very sparsely and fairly finely punctured. Clypeus slightly flattened in the middle in front. Eyes very feebly divergent below. Scapes thick, subtriangular, about twice as long as wide at the apex. Second joint of the flagellum half as long again as the third, and only three times longer than wide at the apex, the eighth to eleventh joints dilated, angular in the middle and also excavated below, the apical joint curved, narrowed slightly towards the apex which is bluntly truncate. Interocular distance on the vertex equal to the length of the first five joints of the flagellum. Second sternite with a low longitudinal carina which does not end in a tooth. Sixth sternite unarmed, the seventh carinate longitudinally in the middle. Seventh tergite triangular, narrowed from the middle to the apex, which is narrowly rounded. Tarsal comb composed of whitish spines, of which there are six on the basal joint. Middle femora dentate along their whole length behind, the teeth small.

♀. 15–16 mm. long. Clypeus usually with a black spot on each side of the middle. The pale bands on the first five tergites are distinctly pale lemon yellow, not glaucous white as in the ♂; the second and third usually enclose two transverse black spots near the base. Sixth tergite black, with a large ochreous spot on each side at the base. Otherwise like the ♂ in colour.

Sternites shining, the second very sparsely and largely punctured in the middle, more finely and more closely at the sides, the other sternites finely and sparsely punctured. Scapes cylindrical or moderately clavate, about three times longer than wide at the apex. Second joint of the flagellum four and a half times longer than wide at the apex, not quite half as long again as the third, the apical joint moderately curved, rounded at the apex and twice as long as the penultimate joint. Interocular distance on the vertex as in the ♂. Sixth sternite with a trace of a median carina in its apical half. Sixth tergite triangular, closely and strongly punctured, narrowly rounded at the apex. Otherwise like the ♂.

Natal, Transvaal, Cape Province and Tanganyika; Sawmills and Sanyati Valley, S. R.; Windhuk, S.W. Africa. (R.M. and T.M. colls.)

Handlirsch rightly synonymised Dahlbom's *olivata* with this species, but as he does not appear to have seen the type of either, it is difficult to understand why he should have preferred the latter name. The name *intermedia* has priority since its description in Dahlbom's work precedes that of *olivata* by a few lines.

Dahlbom's descriptions are exceedingly short and based entirely on colour, and it is not out of the question that they were based not only on this species but also on *Baumannii*.

B. Baumannii Handl. (figs. 24, 24 a). *Loc. cit.* p. 813, ♂.

♂. 16 mm. long. Very similar to the preceding species, from which it differs as follows. Apical margins of the first five tergites testaceous. Behind the apical margin is a black band, sometimes adjacent, and sometimes separated by a narrow line, of the same glaucous white colour as the basal part of the segments.

(In seven specimens before me, the pattern of the tergites is singularly asymmetrical, the bands in many cases traversing only half or three-quarters of the segments.) On the seventh tergite the apical yellowish white mark is much larger than in *intermedia*. The seventh sternite usually has a yellow spot on each side at the apex; these are also sometimes present in *intermedia*, but are not so large. The second sternite is carinate longitudinally as in *intermedia*, but the sculpture is different, the puncturation being larger, more sparse and without rugulosity. The sixth sternite has a short median carina on the apical half, sometimes very feeble or obsolete. The seventh sternite is like that of *intermedia*. Seventh tergite much wider at the apex and less narrowed in the apical half. The outer paramera of the genitalia are more acute at the apex and the broad apical portion is widest at the middle and not at the base as in *intermedia*. The scapes are longer, more cylindrical, but the flagellum hardly differs from that of *intermedia* although the apical joint is less narrowed towards its end and the eighth to eleventh joints are not quite so dilated. Otherwise like *intermedia*.

Hex River, C. P.: Windhuk, S.W. Africa. (S.A. Museum.)

B. capicola Handl. (figs. 25, 25 a and b; Plate VI, figs. 20, 21). *Loc. cit.* p. 81, ♂.

♂. 17-21 mm. long. Black. The tergites chiefly yellow. Labrum, clypeus, mandibles excepting the apex, base of the face between the antennal sockets, scapes below, posterior orbits narrowly, posterior angles of the epinotum, legs, tergites 1-6 excepting the declivous face of the first, the apical margins of the first five, a small black spot on each side of the middle of the second and third, and triangular marks on each side of the apical margins of the second to fifth sternites, lemon yellow. Sides of the face, two round spots below and two triangular spots behind the ocellar area, a band on the posterior margin of the pronotum, pronotal tubercles, tegulae in front, the lateral margins of the mesonotum adjacent to the tegulae, posterior margins of the scutellum and metanotum and an arcuate band, interrupted in the middle, on the brow of the epinotal declivity, yellowish white. Coxae and trochanters black, variegated with yellow. Flagellum black above, ochreous below. Wings hyaline, the veins pale brown. Head, thorax and base of the first tergite with long whitish pilosity. Mesonotum very finely, closely and shallowly punctured, the mesopleurae less closely and less finely, the sides of the epinotum with a shallow and sparse puncturation in the middle. Sternites shining, the second with a sparse and very coarse puncturation, its sides somewhat more finely punctured. Third to sixth sternites a little more finely punctured than the second. Clypeus slightly flattened in the middle in front. Eyes very feebly divergent below. Scapes clavate, about two and a half times longer than wide. Second joint of the flagellum three-fourths longer than the third, the sixth slightly swollen behind, the seventh distinctly dentate on the posterior margin, the eighth to eleventh dilated and also excavated below, the apical joint

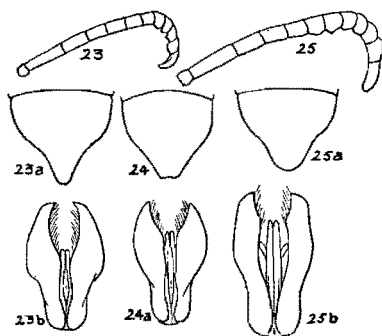


Fig. 23. *Bembex intermedia*, ♂, flagellum;

a, ♂, seventh tergite; b, ♂, genitalia.

Fig. 24. *Bembex Baumannii*, ♂, seventh

tergite; a, ♂, genitalia.

Fig. 25. *Bembex capicola*, ♂, flagellum;

a, ♂, seventh tergite; b, ♂, genitalia.

slightly curved, very little narrowed towards the apex and about one-third longer than the preceding joint. Interocular distance on the vertex equal to the length of the first five joints of the flagellum plus half of the sixth. Second sternite with a well-developed median longitudinal carina which ends in a subacute angle before the apical margin. Sixth sternite with a triangular platform somewhat obtuse at the apex, the seventh with a sharp median longitudinal carina. Seventh tergite triangular, the apex widely rounded, the sides slightly sinuate, the puncturation somewhat obliterated in the middle. Anterior tarsi with a comb of yellowish spines, of which there are six on the basal joint. Middle femora not dentate, middle tibiae with one spur.

♀. 17 mm. long. Clypeus with two black spots near the base. Scutellum and metanotum usually entirely black, the arcuate band on the epinotum and the posterior angles of that segment lemon yellow. Tergites 1-5 with yellow bands across the middle, that on the first interrupted and much narrowed medially, that of the second and also sometimes of the third enclosing two black maculae near the base. The greater part of the femora black at the base, the tibiae with a black streak below. Mesonotum less finely punctured than in the ♂, the sternites sparsely and coarsely punctured, the sixth tergite closely punctured. Sixth sternite with a distinct median carina which almost reaches the base. Scapes less clavate than in the ♂, three and a half times longer than wide at the apex. Second joint of the flagellum half as long again as the third. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. Tarsal comb pale ferruginous. Otherwise like the ♂.

Cape Town, Lady Grey and Grahamstown, C. P.; Johannesburg. (R.M. and T.M. colls.)

B. Braunsii Handl. (figs. 26, 26 a and b; Plate VI, fig. 22). *Loc. cit.* p. 815, ♂, ♀.

"Similar to, and allied to *capicola*. The head as in that species, the labrum half as long again as wide, the clypeus fairly prominent. In the ♂ the ninth and tenth joints of the antennae are slightly spinulose below, the tenth to twelfth distinctly excavated below, the last joint fairly long, curved, rounded at the apex. Wings almost two and a half times longer than the width of the thorax in front, the medial cell of the hind wing emits two longitudinal veins at the apex. Basal joint of the anterior tarsi with six spines. Anterior femora in the ♂ unarmed, the middle femora crenulate-dentate behind. Tibiae and tarsi normal. Abdomen conical, the sixth tergite in the ♀ smooth at the apex and fairly widely rounded, without a median carinula. Seventh tergite in the ♂ fairly narrowly rounded at the apex, the lateral margins not sinuate, the second sternite with a distinct longitudinal carina, the sixth with a small compressed and acute tubercle, the seventh distinctly carinate longitudinally. The genitalia almost the same as in *capicola*, the outer paramera almost truncate at

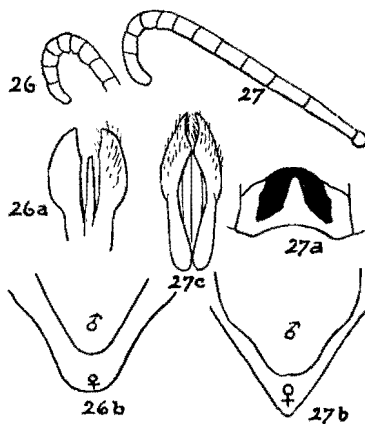


Fig. 26. *Bembex Braunsii*, ♂, flagellum; a, ♂, genitalia; b, ♂ and ♀, apical tergites (after Handlirsch).

Fig. 27. *Bembex Kriechbaumeri*, ♂, flagellum; a, ♀, clypeus; b, ♂ and ♀, apical tergites; c, ♂, genitalia.

the apex. Head, thorax and base of the abdomen with a fairly dense, greyish pilosity; thorax above densely and moderately punctured, second sternite shining in the middle, and fairly coarsely punctured. Black; orbits, lower part of the face, the clypeus excepting two basal black spots, labrum, the pronotal tubercles and greater part of the pronotum, lateral margins of the mesonotum and often, in the ♀, two thin streaks on its disc, narrow bands on the scutellum, metanotum and epinotum (almost obsolete in the ♂), more or less large maculae on the sides of the thorax and epinotum, a very wide band on the first tergite, emarginate in the ♂ and often interrupted in the ♀, very wide bands enclosing two black spots on the second and third tergites, narrower bands bisinuate in front on the fourth, fifth and in the ♂ also the sixth and lateral spots on the sternites, deep yellow. Antennae black, pale below towards the base. Legs yellow, variegated with black basally. 15–18 mm. long."

French Guinea.

I have seen the type of the ♀ in the Braunsian collection. The sixth sternite is somewhat raised lengthwise in the middle but not so much so as to be carinate except close to the apex. The second joint of the flagellum is about one-third longer than the third. The interocular distance on the vertex is nearly as long as the first six joints of the flagellum. The medial cell in the hind wing emits only one longitudinal vein at the apex.

B. Kriechbaumeri Handl. (figs. 27, 27 *a-c*; Plate VI, figs. 23, 24). *Loc. cit.* p. 816, ♂, ♀.

♂. 14–15 mm. long. Black. Mandibles excepting the apex, labrum, clypeus excepting two black spots near the base, the sides of the face and its base between the antennae, two spots below the ocellar area and the scapes below, lemon yellow. The posterior orbits whitish yellow. Posterior margin and sides of the pronotum, posterior half of the pronotal tubercles, a streak on the anterior angles of the mesonotum, the lateral margins of the same, the posterior margins of the scutellum and metanotum, an arcuate band, interrupted in the middle, on the epinotal declivity, the posterior angles of the epinotum and a streak on the sides of the same in front, lemon yellow. Tergites 1–5 and sometimes also the sixth with broad whitish yellow bands, that on the first narrowed medially, on the second emarginate by the black in front and with a transverse black spot on each side which is sometimes confluent with the black at the base. The apical margins of the first two tergites are distinctly dark brown and not black. Seventh tergite black. Apical margin of the first sternite flavo-testaceous, the second and third sternites with large triangular yellow marks at the sides. Legs yellow, the femora blackish, more extensively above than below, the apical half of the anterior coxae and a streak on the anterior tibiae below, black. Flagellum dark brown above, ochreous below. Head, thorax and first tergite with a long, yellowish grey pilosity. Mesonotum and scutellum with a very close fundamental and microscopic puncturation, with which is intermixed a larger puncturation. Sternites shining, sparsely punctured except on the sides of the second, the punctures very shallow, fairly large on the second and third, small on the other sternites. Seventh tergite very finely punctured, the apical third impunctate. Clypeus distinctly flattened in the middle in front. Eyes parallel. Second joint of the flagellum half as long again as the third, all the joints simple, the apical joint not narrowed towards the apex, slightly curved and nearly twice as long as the preceding joint. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. Second sternite with a low median carina, the sixth simple, the seventh carinate lengthwise in the middle. Seventh tergite narrowly

rounded at the apex, the sides feebly sinuate. Basal joint of the anterior tarsi with six spines. The middle femora not dentate on the posterior margin. Outer paramera of the genitalia acute at the apex.

♀. 15 mm. long. Clypeus with a large Λ -shaped black mark at the base, almost reaching the anterior margin. Mesopleurae with a vertical yellow bar near the posterior margin. Tibiae streaked with black above and below; tarsi reddish ochreous, the basal joint of the posterior pair somewhat fuscous above. In one specimen the first four tergites have transverse lemon yellow bands, the first much narrowed medially, the second and third each enclosing black maculae, and the fourth bi-arcuate and interrupted in the middle (Plate VI, fig. 24). In the other specimen the band on the first is very much narrowed medially and interrupted, the second is broken at the base by a propeller-shaped black macula, the third encloses two black spots, and the fourth to sixth are entirely black. In the first specimen there are two thin yellow longitudinal lines on the anterior half of the mesonotum, and the greater part of the mesopleurae, sides of the epinotum and lower half of the metapleurae are yellow. In both specimens only the second sternite has small yellow spots at the sides. Interocular distance on the vertex as in the ♂. Second joint of the flagellum half as long again as the third. Sixth tergite triangular, convex transversely, smooth and shining in the middle and feebly subcarinate over the middle third of its length. Sixth sternite convex transversely, but without any trace of a median carina. Otherwise like the ♂.

I have seen three ♂♂ and two ♀♀ in the Braunsian coll. from Lower Guinea and Liberia, all of which bear Handlirsch's labels as types! *B. Silvestrii* Maidl (Boll. del. Lab. di Zool. Portici, IX, p. 149, ♂, 1914) is very closely allied to this species if it is not merely a race of it. It differs, to judge by the description and figures, only in having the colour black and dirty white, instead of black and yellow, in the slightly deeper sinuation of the sides of the seventh tergite and in the seventh joint of the flagellum which is feebly angular, hardly spinose, on the posterior margin. The genitalia are the same as in *Kriechbaumeri*.

Kriechbaumeri, race *scitula* n.r.

Three ♀♀ from Narugas and Tsintsabis, S.W. Africa, in the South African Museum and numerous specimens from Sawmills, differ from the type in being on the average somewhat smaller, 14 mm. long, and in having the two yellow longitudinal streaks on the mesonotum larger and connected with a transverse streak at the base, forming a distinct U-shaped mark. The face is also more extensively yellow, that colour covering the whole face as far as the level of the anterior ocellus excepting two triangular black spots below the ocellus. There are also two yellow spots behind and slightly to the side of the ocellar area; in some specimens these marks are connected by a streak with the yellow below the ocellar area. The mesonotum lacks the fundamental microscopic puncturation present in the type of the species. The apical half of the sixth sternite has a distinct, but low, median longitudinal carina; the sixth tergite has no trace of a carina and is closely punctured all over except just behind the apex.

B. modesta Handl. (figs. 28, 28 a and b). Loc. cit. p. 821, ♂.

♂. 15 mm. long. In colour and sculpture this species is very much like the melanic form of *labidura* from Basutoland. The antennae and sternites do not differ appreciably from those of *labidura*, although the dentiform tubercle on the sixth sternite is blunt at the apex. The apical half of the posterior margin of the middle femora is irregularly serrate, the teeth small and of

unequal size, the largest being near the apex. It differs from *labidura* in having the seventh tergite sinuate at the sides, so that the apical third of the segment is narrower than the rest. The genitalia are of quite a different shape, the outer paramera not having the narrow apical termination which is seen in *labidura*. Interocular distance on the vertex equal to the length of the first six joints of the flagellum, the second joint of the latter is two-thirds longer than the third. Spines of the tarsal comb all yellow, the basal joint with six spines.

Guinea. (I have seen the type, which is in the Vienna Museum.)

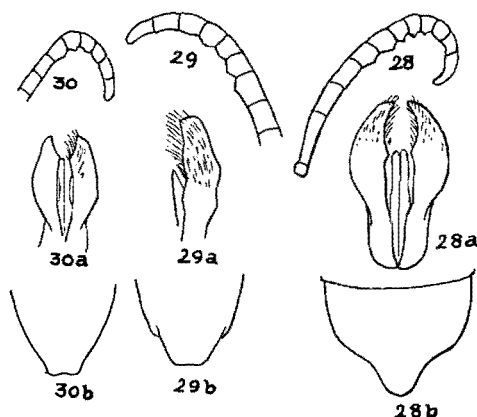


Fig. 28. *Bembex modesta*, ♂, flagellum; a, ♂, genitalia; b, ♂, seventh tergite.

Fig. 29. *Bembex Stadelmanni*, ♂, flagellum; a, ♂, genitalia; b, ♂, seventh tergite (after Handlirsch).

Fig. 30. *Bembex velox*, ♂, flagellum; a, ♂, genitalia; b, ♂, seventh tergite (after Handlirsch).

B. velox Handl. (figs. 30, 30 a and b). *Loc. cit.* p. 819, ♂.

"Face wide, carinate between the antennae. Eyes slightly divergent towards the clypeus. Clypeus slightly prominent, evenly convex. Labrum half as long again as wide. Antennae slender, the eighth and ninth joints distinctly spinulose behind, the three following joints distinctly excavated below, the apical joint a little curved, and rounded at the apex. Wings slightly infuscated, the veins dark brown; two and a half times longer than the width of the thorax in front; the medial cell of the hind wing emits two longitudinal veins from the apex. Tarsi normal, the basal joint of the anterior pair with six spines; middle femora serrate-dentate behind, the tibiae not produced at the apex, but with one spur. Abdomen conical, the seventh tergite distinctly emarginate at the apex, barely sinuate at the sides, the second sternite with a low longitudinal carina, the sixth with a very obtuse tubercle, the seventh carinate lengthwise. Outer paramera of the genitalia fairly wide, barely truncate at the apex. Thorax fairly densely and moderately coarsely punctured above, and like the head, with a dense grey pilosity. Black; the anterior orbits widely, the posterior narrowly, the clypeus, labrum, posterior margin of the pronotum narrowly, short streaks on the sides of the mesonotum, a narrow band on the scutellum, a narrow and broken band on the first tergite, a wide one enclosing two black maculae on the second, feebly sinuate bands on the third to fifth and small lateral spots on the sternites, yellow. Antennae black, scapes yellow

below, legs yellow, the base and the greater part of the femora black. 15 mm. long."

Zanzibar.

B. Stadelmanni Handl. (figs. 29, 29 a and b). *Loc. cit.* p. 820, ♂.

"Similar to, and allied to *velox*. Eyes not divergent below. Clypeus slightly prominent. Labrum half as long again as wide. Antennae slender, as far from each other as from the eyes, the seventh to tenth joints slightly spinulose below, the ninth to twelfth excavated below, the apical joint fairly long, curved, rounded at the apex. Wings hyaline, the veins fuscous, two and a half times longer than the width of the thorax in front, the medial cell of the hind wing emitting two longitudinal veins at the apex. Tarsi normal, the basal joint of the anterior pair with seven spines. Middle femora serrate-dentate behind. Middle tibiae not produced at the apex, but with a spur. Abdomen conical, the first segment very declivous at the base, seventh tergite almost truncate at the apex, the second sternite with an acute compressed tooth, the sixth with a fairly flat pyramidal tubercle, the seventh with a distinct longitudinal carina. Outer paramera of the genitalia roundly truncate at the apex. Thorax fairly densely and fairly finely punctured, and like the head, covered with grey pilosity. Second sternite shining in the middle and sparsely punctured. Black; anterior and posterior orbits widely, lower part of the face, clypeus, labrum, greater part of the prothorax, streaks on the sides and two spots on the disc of the mesonotum, a very narrow band on the scutellum, fairly large maculae on the sides of the thorax and epinotum, a narrow and broken band on the first tergite, broad bands enclosing two nearly complete black maculae on the second and third, broad bands on the fourth to sixth tergites and large maculae on the sternites, yellow. Antennae fuscous above, yellow below; legs pale yellow, variegated with black. 16 mm. long."

Mombasa.

B. massaica Cam. (figs. 31, 31 a-e; Plate VI, fig. 18). Sjöstedt's *Kilimandjaro-Meru Exped.* VIII, p. 290, ♀, ♂. 1910. Turner, *Ann. Mag. N.H.* xix, p. 439. 1917.

♂. 17 mm. long. Black. Mandibles except at the apex, labrum, clypeus, sides of the face widely, the base of the same between the antennal sockets, scapes below, two spots below the ocellar area, posterior orbits, posterior margin and sides of the pronotum excepting a bilobed black spot above, a vertical bar on the mesopleurae, the sides of the epinotum in front and behind, lateral margins of the mesonotum and two clavate streaks on its disc in front, posterior margins of the scutellum and metanotum, and an arcuate band, angularly dilated in the middle, on the epinotum, pale yellowish white. Tergites 1-6 with wide bands of yellowish white, those of the second and third each enclosing two oblong black spots near the base. The apical margins of sternites 1-5 and triangular maculae on each side of them, yellowish white. Legs yellowish white, the base of the femora below, streaks on their upper side, much reduced on the middle pair, and narrow streaks on the tibiae beneath, black. Anterior coxae yellowish white on the apical half below. Flagellum black above, fusco-flavous below. Wings hyaline, the veins brown. Pilosity of the head and thorax yellowish white. Punctuation of the mesonotum close, fine and shallow. Sternites 2-6 coarsely and sparsely punctured, the second somewhat finely and closely punctured at the base. Seventh tergite closely and strongly punctured except at the apex. Clypeus very convex, not flattened in front. Eyes almost parallel, only slightly divergent below.

Scapes fully three times as long as wide. Second joint of the flagellum nearly three-fourths longer than the third, the seventh spinose below near the base, the ninth and tenth slightly dilated, the ninth to eleventh feebly excavated below, the apical joint moderately curved, slightly compressed, the apex rounded. Interocular distance on the vertex nearly equal to the length of the first five joints of the flagellum. Second sternite with a high carina ending posterior in a hamate spine, sixth sternite with a raised triangular platform which is acute at the apex, the seventh sternite with a low median longitudinal carina on its apical half. Seventh tergite rounded at the apex, the sides distinctly sinuate beyond the middle. Tarsal comb composed of pale yellowish white spines, of which there are six on the basal joint. Middle femora very feebly serrate behind, middle tibiae with a large spur. Outer paramera of the genitalia roundly truncate at the apex.

♀. 17 mm. long. Clypeus with two black spots at the base. Tergites 1-5 with pale bands as in the ♂. Mesonotum with a transverse yellow band at the base, not extending to the lateral margins. All the pale markings, excepting

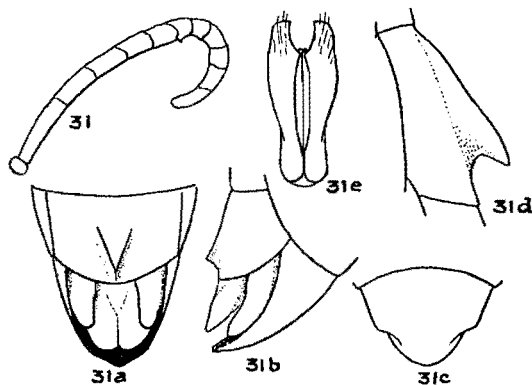


Fig. 31. *Bembex massaica*, ♂, flagellum; a and b, ♂, sixth and seventh sternites; c, ♂, seventh tergite; d, ♂, second sternite; e, ♂, genitalia.

sometimes the clypeus and sides of the labrum, not so pale as in the ♂, having a more yellowish tinge. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus one-third of the fifth. The second joint of the flagellum two-fifths longer than the third. Sternites shining, sparsely and more coarsely punctured than in the ♂, the sixth distinctly carinate lengthwise over the apical half, the apical margin slightly excised in the middle. Sixth tergite triangular, narrowly rounded at the apex, strongly and closely punctured except near the apex. Tarsal comb composed of pale brownish spines, the basal joint with six spines of which the first is short and thin. Otherwise like the ♂.

Meru, East Africa; Victoria Falls, Bembesi, Bulawayo and Umtali, S. R. (R.M. and T.M. colls.)

Cameron does not refer to the genitalia but his description of the colour pattern is very detailed and I have little doubt about the correct identification of the insects described above. Turner wrongly synonymised Cameron's species with *forcipata* Handl. The latter has the genitalia like those of *melanopa*, which are entirely different from those of *massaica*.

*B. fraudulent*a n.sp. (figs. 32, 32 a; Plate VI, figs. 41, 42).

♂. 13.5 mm. long. Deceptively like *B. albopilosa* Arn. with a similar white pilosity but not so long and dense as in that species, and with a colour pattern on the tergites which is only slightly different.

Black. Mandibles excepting the apex, labrum, clypeus, sides of the face and its base between the antennal sockets, scapes below, posterior orbits, posterior margin of the pronotum including the tubercles, tegulae, a spot below them on the mesopleurae, sides of the mesonotum, posterior margin of the scutellum, and the tergites, lemon yellow. The base of the first tergite, and bisinuate basal bands on the second and third, black. Sternites black, the apical margins and lateral angles of the second to sixth, lemon yellow, the seventh yellow at the apex. Legs chrome yellow, the basal half or more of the femora, black. Flagellum brown above, the first two joints darker, ochreous below. Wings hyaline, the veins brown. Mesonotum fairly closely punctured, but not so closely as in *albopilosa*. Second sternite finely, very shallowly and fairly closely punctured, moderately shining, the third to sixth sternites shining, very sparsely and finely punctured. Second and following tergites rather shining, the puncturation shallow, but larger and less close than in *albopilosa*. Clypeus very convex, distinctly flattened in the middle in front, three-fifths wider than long in the middle (twice as wide as long in *albopilosa*). Eyes parallel. Ocellar area with a median tubercle. Second joint of the flagellum five times longer than wide at the apex and half as long again as the third; the seventh and eighth feebly spinose behind, the seventh to eleventh slightly excavated below, the apical joint almost straight, rounded apically, not longer than the penultimate. None of the joints is dilated. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. Second sternite with a low, but sharp, median longitudinal carina, nearly reaching the apical margin and not ending in a tooth. Sixth sternite not tuberculate, merely slightly tumid in the middle. Seventh sternite with a very weak median longitudinal carina. Seventh tergite widely rounded at the apex, subtriangular. Legs normal, the middle femora very feebly serrate on the posterior margin, the middle tibiae with a spur. Comb of the anterior tarsi composed of yellowish, flattened spines, of which there are seven on the basal joint. The genitalia resemble those of *capicola*.

♀. 14 mm. long. Black. Clypeus, labrum and mandibles whitish yellow. Upper margin and posterior half of the sides of the pronotum excepting a black mark in front of the tubercles, sides of the mesonotum, a vertical bar on the mesopleurae in front, tegulae, posterior half of the scutellum and meta-notum, a broad arcuate band on the posterior half of the median area of the epinotum and the posterior angles of the same, pale lemon yellow. Colour pattern of the abdomen very similar to that of the ♂, but the tergites are pale greenish yellow excepting the basal portions of the first and second which are lemon yellow. The apical margins of the second to fifth tergites and the whole of the sixth are often creamy white. Sternites black, the second to fifth

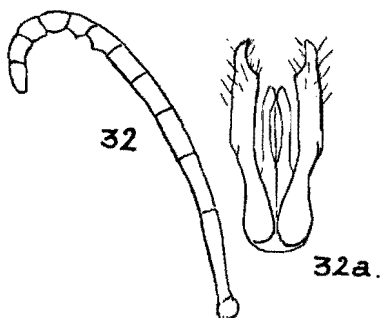


Fig. 32. *Bembex fraudulent*a, ♂, flagellum; a, ♂, genitalia.

with small greenish yellow lateral maculae on the apical margin. Second sternite moderately shining, the middle portion with a sparse and very shallow puncturation, the third to sixth tergites moderately shining, a little more closely and more strongly punctured than in the ♂. Sixth tergite very shallowly, finely, and not closely punctured. Otherwise like the ♂ in sculpture, colour and pilosity. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus four-fifths of the fourth. Flagellum long and slender, the second joint two-fifths longer than the third and more than five times longer than wide at the apex. Anterior tarsi with a comb of pale yellow spines, the basal joint with six or seven, of which the first is short and thin. Sixth tergite triangular, narrowly rounded at the apex. Otherwise like the ♂.

Durban, March. 1♂, 8♀♀ (C. N. Barker). Types in the Durban Museum. Easily confused with *albopilosa*, but clearly separated in the ♂ by the shape of the genitalia, and the flagellum in the ♀. From *intermedia* it may be distinguished by the different colour pattern on the tergites and the finer puncturation of the sternites.

15. OCULATA Group.

Face fairly wide. Eyes not strongly divergent below.

♂. Middle femora usually distinctly dentate, middle tibiae with a spur. Second and sixth sternites with more or less distinct tubercles or carinae, the seventh long, narrow and with three longitudinal carinae close together.

♀. Second sternite shining and coarsely punctured.

Including *ochracea* Handl., *harenarum* Brauns, *liturata* Turner and perhaps *lobatifrons* Turner.

B. ochracea Handl. (figs. 33, 33 a-c; Plate VI, fig. 25). *Loc. cit.* p. 864, ♂.

B. opima Turner. *Ann. Mag. N.H.* XIX, p. 440, ♂, ♀. 1917.

♂. 16 mm. long. Black. Mandibles except at the apex, labrum and clypeus, yellowish white. Sides of the face and the base between the antennae, posterior orbits, pronotum excepting a black area in front and a large black macula on each side, tegulae, lateral margins of the mesonotum, the posterior margins of the scutellum and metanotum, a band on the dorsum of the epinotum, sometimes obsolete, and the legs excepting the base of the femora, chrome yellow. Tergites 1-6 chrome yellow; the declivous face of the first, narrow basal bands on the second to fifth or sixth, and the whole of the seventh, black. Sternites black, the second to sixth with large lateral maculae and apical bands chrome yellow. Flagellum blackish above, pale ochreous below. Wings hyaline, distinctly tinged with yellow in the middle, the veins, excepting the subcosta, reddish yellow. Head, thorax and base of the first tergite with a dense but not very long, greyish pilosity. Mesonotum very closely and not very finely punctured, almost reticulate-punctate; the mesopleurae as strongly but less closely punctured. First tergite closely punctured like the mesonotum. Second sternite shining, coarsely, irregularly and fairly closely punctured, the sides somewhat less coarsely but more closely. Third to sixth sternites coarsely and fairly sparsely punctured. Clypeus prominent and very convex transversely, not flattened in front. Face with a very short carina at the base between the antennal sockets. Eyes nearly parallel. Second joint of the flagellum distinctly long, five and a half times longer than wide at the apex and nearly two and a half times longer than the third; the seventh and eighth distinctly spined below, the ninth with a very small spine near the apex, the tenth and eleventh dilated and moderately excavated below, the apical joint curved, not

much narrowed towards the truncate apex and not longer than the penultimate. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. Second sternite with a large compressed tooth, rounded at its apex; sixth sternite with a subtriangular platform, seventh sternite long and narrow, tricarinate, the lateral carinae not reaching the apical margin. Seventh tergite closely punctured, narrowly rounded at the apex. Basal joint of the anterior tarsi with six pale yellow spines; middle femora very indistinctly serrate behind, middle tibiae with two spurs.

♀. 16 mm. long. The black maculae on the sides of the pronotum are almost obsolete. Mesopleurae with a more or less clavate yellow mark, widest below. The bands on the scutellum, metanotum and epinotum are much wider than in the ♂, the posterior angles of the epinotum and the greater part of the declivity below, chrome yellow. Abdomen chrome yellow; only the declivous face of the first tergite, two small spots on the brow of the same, the first sternite excepting the apical margin, the median basal part of the

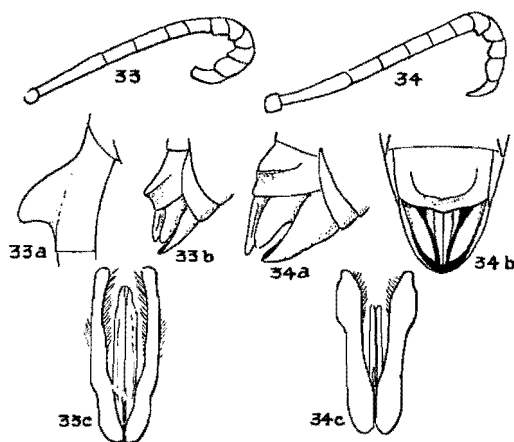


Fig. 33. *Bembex ochracea*, ♂, flagellum; a, ♂, second sternite; b, ♂, sixth and seventh sternites, c, ♂, genitalia.

Fig. 34. *Bembex liturata*, ♂, flagellum; a and b, ♂, sixth and seventh sternites; c, ♂, genitalia.

second and the base of the sixth are black. Sixth tergite dull ochreous, blackish at the base. As in the ♂ the apical half or more of the anterior coxae is yellow. Flagellum fusco-ferruginous above, pale ochreous below. The apex of the clypeus and the base of the labrum are sometimes stained with brown. Otherwise like the ♂ in colour, pilosity and sculpture, but the middle of the second sternite is only sparsely punctured. Sixth tergite fairly strongly and closely punctured at the sides, widely rounded at the apex. Second joint of the flagellum long, nearly six times longer than wide at the apex and nearly two and a half times longer than the third. Interocular distance on the vertex equal to the length of the first three joints of the flagellum plus half of the fourth.

Transvaal; Willowmore, C. P. (Dr H. Brauns).

The synonymy of *opima* Turner with this species is clearly established by the structure of the genitalia. The ♂ sometimes has a black spot at the base of the clypeus, and the second tergite may have the two projecting bays of the basal black band separated as discrete maculae.

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

B. liturata Turner (figs. 34, 34 a-c; Plate VI, figs. 26, 27). *Ann. Mag. N.H.* XIX, p. 440, ♂, ♀. 1917.

♂. 17 mm. long. Black. Mandibles except at the apex, labrum, clypeus excepting a transverse black spot at the base, anterior and posterior orbits narrowly, the basal margin of the face below the antennae, the scapes below, posterior margin and sides of the pronotum including the lower half of the pronotal tubercles, the mesopleurae in front and the middle of the tegulae, lemon yellow. Tergites 2-6 with narrow, slightly sinuate, dull whitish bands across the middle, becoming yellowish at the sides, the first tergite with a very narrow dull whitish streak on each side, often much reduced or obsolete. Sternites 1-6 with the extreme apical margins yellow, and with lateral spots of the same colour on the second to fifth. Legs yellow, the anterior and hind femora above, and a streak on all the tibiae behind, black. Flagellum entirely black. Wings hyaline, the veins dark brown. Pilosity on the head, thorax and first tergite white, the clypeus with a dense, decumbent and white pubescence. Mesonotum shallowly and not very closely punctured, somewhat shining. Sternites shining, the second with a shallow, large and fairly close puncturation, the remaining sternites very sparsely and coarsely punctured. Seventh tergite semi-elliptical, shining, finely and fairly sparsely punctured. Clypeus strongly convex, not flattened in front. The base of the face without a distinct carina. Eyes almost parallel, very slightly divergent below. Second joint of the flagellum about five times longer than wide at the apex and fully twice as long as the third; the seventh joint emarginate at the apex below, the eighth spined below, the ninth to eleventh dilated and excavated below, the apical joint curved, rostrate and as long as the preceding joint. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. Second sternite with a large compressed tooth, the sixth with a semicircular platform, the seventh tricarinate and very narrow, the lateral carinae not reaching the apical margin. Anterior tarsi with six spines on the basal joint. Middle femora feebly serrate behind, the middle tibiae with one spur.

♀. 15 mm. long. Basal half of the clypeus black. Flagellum reddish brown above, dull ochreous below. Mesopleurae entirely black. The pale band on the first tergite much wider than in the ♂, sometimes interrupted in the middle. The bands on the second to fifth segments also wider than in the ♂. Second and third sternites fairly closely punctured at the sides, the puncturation on the middle of the second sparser and shallower than in the ♂. Sixth tergite sparsely punctured in the middle, fairly closely and coarsely at the sides, triangular, the apex narrowly rounded. Second joint of the flagellum twice as long as the third. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. Basal joint of the anterior tarsi with seven spines.

Willowmore, C. P. (Dr H. Brauns).

B. liturata, race *flavopicta*, n.r. (Plate VI, fig. 46).

♂. 17 mm. long. Entirely like the type of the species in all structural characters, but totally dissimilar in coloration, in which it resembles *Braunsii* and *massaica*. Colour of the head like that of *massaica*, of the thorax like that of *Braunsii*. First tergite with a lemon yellow band, entire but narrowed in the middle; second tergite with a wide median band, lemon yellow in front, whitish posteriorly and enclosing two transverse black maculae, tergites 3-5 with bisinuate whitish bands, those of the third and fourth very narrowly

yellowish in front, the sixth tergite yellowish white, black at the extreme base; the seventh tergite black, whitish on the apical margin. Sternites 1-6 lemon yellow, the third and sixth black at the base, the seventh black with the narrow apical portion dirty white. Legs lemon yellow.

Windhuk, S. W. Africa (C. Wilde). Type in the Transvaal Museum.

B. lobatifrons Turner. *Trans. Ent. Soc. London*, p. 747, ♂, ♀. 1912.

♂. Black; clypeus, labrum, basal half of the mandibles, the scapes which are black above, face excepting a large bilobed macula above the antennae, temples, a transverse and interrupted line on the occiput, pronotum, sides of the mesonotum and small streaks on its disc, scutellum, post-scutellum, arcuate apical bands on the epinotum, sides of the thorax which are more or less variegated with black, a wide sinuate band on the first tergite, wide bisinuate bands on the second to fourth tergites, nearly the whole of the fifth and sixth, the seventh narrowly at the apex, almost the whole of the first three sternites, wide apical bands on the fourth to sixth, the legs, thorax underneath excepting the mesosternum, pale yellow; wings hyaline, the veins brown.

♀. Very much like the ♂, the yellow bands on the second and third tergites have two black spots within them, ♂, ♀. 14 mm. long.

♂. Eighth and ninth joints of the antennae with a minute spine beneath, tenth to twelfth slightly excavated beneath, apical joint longer than the penultimate, distinctly curved and rounded at the apex. Fore tarsi normal, the basal joint with six spines on the outer margin, fore femora not serrate, intermediate femora with one or two small spines beneath near the apex, not distinctly serrate, basal joint of the intermediate tarsi normal, intermediate tibiae not produced at the apex. Seventh dorsal segment broad, narrowly truncate at the apex, the sides not sinuate. Second ventral segment with a longitudinal carina which is gradually raised into a rounded tubercle at the apex, the surface of the segment closely and evenly punctured; sixth ventral segment with a small, low, rounded tubercle in the middle; seventh ventral segment with three longitudinal carinae placed rather far apart. Wings rather short, not reaching when closed much beyond the apex of the third dorsal segment; cell of the hind wing emitting only one distinct vein from the apex.

♀. Similar to the male except in the usual sexual characters; the sixth dorsal segment with a very large yellow apical spot, the sides not sinuate, the apex narrowly rounded. Second ventral segment evenly punctured. The colour of the female is a deeper yellow than in the male.

Hab. British East Africa. Uchweni Forest, March 1-2; Lake Mpeketomi, near Kipini (S. A. Neave), March 4-5. Type in the British Museum."

I have seen only a specimen of the ♀ of this species. The eyes are almost parallel, being very feebly divergent below. The interocular distance on the vertex is equal to the length of the first four joints of the flagellum. The second joint of the latter is half as long again as the third. The ♀ bears a strong resemblance in the colour pattern of the upper side of the body to *Kriechbaumeri*, race *scitula* Arn., but in the latter the face is wider, the sides of the thorax are not almost entirely yellow and the sternites and apical tergite are black. The most distinct difference, however, lies in the shape of the vertex, *lobatifrons* having only very shallow depressions on each side of the ocellar area.

B. harenarum Brauns, n.sp. (figs. 35, 35 a; Plate VI, figs. 28, 29). Brauns *in litt.*

♂. 16 mm. long. Black. Mandibles excepting the apex and a spot on the inside at the base, labrum, clypeus, sides of the face widely as far as the level of the posterior ocelli, the base of the face between the antennae, a transverse

bar or two spots below the ocelli, the scapes in front and the posterior orbits, lemon yellow. Flagellum blackish above, ochreous below. Posterior margin and sides of the pronotum, pronotal tubercles, a vertical streak behind them on the mesopleurae, two narrow longitudinal streaks on the mesonotum in front and the lateral margins of the latter, posterior margin of the scutellum and a vertical bar on the sides of the epinotum, lemon yellow. Tergites 1-6 greenish white, the apical margins narrowly, the base of the first and two transverse maculae on both the second and third, black. Seventh tergite black, with a small whitish spot on each side at about the middle. Sternites black, the second to sixth with narrow apical bands widely dilated at the sides, greenish white. Legs yellow, the femora with a short black streak below and a longer one above, the anterior tibiae with a black streak below. Wings hyaline, the veins brownish ochreous. Head, thorax and first tergite with a very dense, greyish pilosity. Mesonotum very shallowly, finely and fairly closely punctured. Second sternite not very shining, with a shallow, large and close puncturation all over, the remaining sternites shining, finely and very scantily punctured. Seventh tergite fairly finely punctured at the sides of the base, almost smooth elsewhere. Clypeus slightly flattened in the middle in front. Face carinate below. Eyes almost parallel. Second joint of the flagellum fairly short, about three times longer than wide at the apex and two-thirds longer than the third joint; the eighth to eleventh joints strongly dilated and also excavated below, the twelfth joint curved, narrowed towards the apex, and a little longer than the penultimate joint. Interocular distance on the vertex equal to the length of the first five joints of the flagellum. Second sternite with a low median longitudinal carina; sixth sternite slightly tumid near the apex, the seventh with a median longitudinal carina and a short blunt carina on each side near the base. Seventh tergite triangular, narrowly rounded at the apex, the sides feebly sinuate. Basal joint of the anterior tarsi with six whitish spines, the first one short. Middle femora distinctly serrate on the whole of the hind margin; the middle tibiae with one spur.

♀. 15 mm. long. Basal black spot on the mandibles larger than in the ♂, the clypeus yellow only at the sides and on the anterior margin; the yellow at the sides of the face extends only two-thirds of the way up. Colour pattern like that of the ♂ but the mesonotum lacks the two yellow streaks in front and the pale bands on the first five tergites are much narrower, occupying only a third of the length of each segment. Sixth tergite entirely black. Sternites with much smaller greenish white maculae. Last three joints of the flagellum brownish yellow above. Second joint of the flagellum four and a half times longer than wide at the apex and nearly half as long again as the third, the apical joint somewhat flattened, half as long again as the penultimate. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. Sternites shining, the second coarsely and sparsely punctured in the middle, fairly finely and closely at the sides, the third to fifth sparsely and finely, the sixth sparsely and coarsely punctured. The sixth sternite is carinate lengthwise over its apical half. Sixth tergite triangular, strongly and fairly closely punctured except along the middle of its length, narrowly rounded at the apex. Comb of the anterior tarsi composed

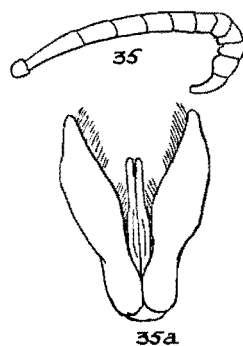


Fig. 35. *Bembex harenarum*, ♂, flagellum; a, ♂, genitalia.

of long brownish yellow flattened spines, of which there are six on the basal joint.

Plettenberg Bay, C. P. January (Dr H. Brauns). Types in coll. Brauns.

16. FUSCIPENNIS Group.

This differs from the preceding group only in having the basal joint of the middle tarsi more or less dilated in the middle or near the base.

Including *fuscipennis* Lep., *sibilans* Handl., *capensis* Handl., *compedita* Turner and *flavicincta* Turner.

B. fuscipennis Lep. (figs. 36, 36 *a* and *b*; Plate VI, fig. 30). *Hist. Nat.* III, p. 271, ♂, ♀. 1845.

♂. 16 mm. long. Black. Mandibles dirty yellow, ferruginous at the apex, labrum and clypeus brownish amber yellow. A streak on each side of the face curving inwards above, two spots behind the antennal sockets and a band, often broken up into spots, below the ocellar area, and the temples narrowly, reddish orange. Scapes and flagellum, excepting the last four joints, pale ferruginous. Posterior margin of the pronotum dull yellow, tegulae ferruginous, a spot on the posterior angles of the epinotal dorsum pale yellow. Abdomen black, tergites 1-5 with very pale whitish yellow sinuous bands, that on the first widely interrupted in the middle; sixth and seventh tergites and apical margin of the fifth, ferruginous. Sternites 1-5 black, the second to fifth with small whitish yellow spots on each side near the apex, the middle of the second and the whole of the sixth ferruginous, the seventh fusco-ferruginous. Legs reddish ochreous, the coxae, trochanters and base of the femora below, black; the tibiae and basal joint of the hind tarsi whitish above. The femora and tibiae are noticeably slender. Wings pale brown, the apical third or more, hyaline. Pilosity on the head, thorax and first tergite white, neither dense nor long. Mesonotum fairly closely and by no means finely punctured, the mesopleurae a little more strongly than the mesonotum. Tergites fairly distinctly and not very closely punctured, sternites 2-5 shining, sparsely and coarsely punctured, the sixth closely and finely so at the base, more sparsely and more strongly at the sides. Eyes nearly parallel, barely divergent below. Clypeus not flattened in front. Second joint of the flagellum four and a half times longer than wide at the apex and twice as long as the third, the seventh and eighth feebly spined behind, the ninth to eleventh not dilated, slightly excavated below, the apical joint moderately curved, slightly narrowed towards the end, which is rounded. Interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. Second sternite with a large compressed and curved tooth, the sixth with a high, subtriangular platform, the seventh feebly carinate lengthwise in the middle. Seventh tergite narrowly truncate at the apex. Basal joint of the anterior tarsi with six ferruginous spines. Middle femora not serrate or dentate, the basal joint of the middle tarsi dilated at the middle.

♀. 15-16 mm. long. Sixth abdominal segment and the apical margin of the fifth tergite, ferruginous. Second sternite more sparsely punctured than in the ♂. Sixth tergite narrowly rounded at the apex, closely and strongly punctured, subcarinate lengthwise in the middle. Second joint of the flagellum slightly longer than in the ♂. Otherwise like the ♂.

S. Rhodesia, Transvaal and Natal. A common species. Sometimes the wings in the ♂ are clear hyaline throughout.

B. sibilans Handl. (figs. 37, 37a and b; Plate VI, fig. 31). *Loc. cit.* p. 852, ♂, ♀.

♂. 16 mm. long. Very similar to *fuscipennis* and with the same colour pattern on the first six tergites. It differs from *fuscipennis* as follows.

Labrum chrome yellow. Clypeus black, only the anterior margin narrowly yellow. Markings on the face and the front of the scapes reddish ochreous. Scapes above and the flagellum black, the latter reddish brown below towards the apex. Sides of the pronotum and the lower anterior angle of the mesopleurae, lemon yellow. Seventh tergite and all the sternites black, without any ferruginous colour, the second to fifth with small yellow maculae at the sides. Legs ochreous yellow, the femora and the anterior tibiae streaked with black above. The wings are much paler, the brown stain on the basal two-thirds being much lighter than in *fuscipennis*. The pilosity is a little more abundant and longer. Flagellum thicker, the second joint only a little more than three times longer than wide at the apex, but also twice as long as the third, the sixth to eighth spinose posteriorly, the ninth slightly, and the tenth and eleventh joints distinctly dilated, the seventh to eleventh excavated below,

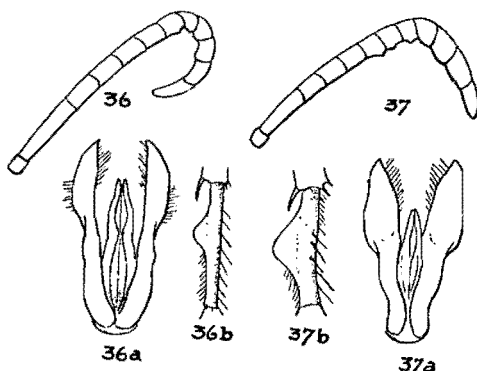


Fig. 36. *Bembex fuscipennis*, ♂, flagellum; a, ♂, genitalia; b, ♂, basal joint of middle tarsus.

Fig. 37. *Bembex sibilans*, ♂, flagellum; a, ♂, genitalia; b, ♂, basal joint of middle tarsus.

the apical joint very little longer than the penultimate, feebly curved, rounded at the apex. Interocular distance on the vertex equal to the length of the first six joints of the flagellum. Sculpture of the sternites not quite so coarse as, and a little closer than in *fuscipennis*, the tooth on the second not so long or high, the sixth as in *fuscipennis*, the seventh with a median and lateral carinae. The seventh tergite is much more widely rounded apically, being almost semi-circular, and is also more strongly and less closely punctured; the outer paramera of the genitalia are much wider. The basal joint of the middle tarsi is thicker and has a wider and higher dilatation.

♀. 18 mm. long. The brown stain on the wings darker than in the ♂, but not so dark as in *fuscipennis* ♀. Colour of the head and legs as in the ♂. Apical tergite fusco-ferruginous. The whitish yellow bands on the tergites are narrower than in *fuscipennis* and less deeply bisinuate in front. Face relatively narrower than in *fuscipennis*. Second joint of the flagellum two-thirds longer than the third, and about three and a half times longer than wide at the apex. Third to fifth sternites finely and closely punctured at the base, otherwise the sculpture of the sternites is the same as in *fuscipennis*. Sixth tergite with

a median longitudinal carina which does not extend from the base much beyond the middle of the segment. Otherwise like the ♂.

Algoa Bay (Dr H. Brauns). (T.M. coll.)

B. compedita Turner (fig. 38, 38 a-c). *Trans. Ent. Soc. London*, p. 746. 1912.

B. Kohli Turner (*nec* Morice 1897). *Ann. Mag. N.H.* ix, p. 415, ♂, ♀. 1912.

♂. 16 mm. long. Black. Labrum and base of the mandibles yellow. Face and vertex as far as the level of the posterior ocelli, excepting a T-shaped median black mark below the anterior ocellus and the vertex behind the ocelli, antennae excepting the last four joints, and the temples, reddish yellow. Upper margin of the pronotum and the posterior half of the pronotal tubercles, yellow. Tegulae ferruginous. Tergites 2-5 with bands of reddish ochreous yellow, widely interrupted in the middle on the second, slightly so on the third and fourth, the fifth and sixth entirely reddish yellow, the seventh ferruginous. Sternites 2-4 with narrow apical bands of reddish yellow, the sixth entirely of that colour except the median platform which, like the tubercle on the second, is ferruginous. Legs yellow, the femora blackish above at the base, the hind femora also black below. Wings hyaline, the veins brown.

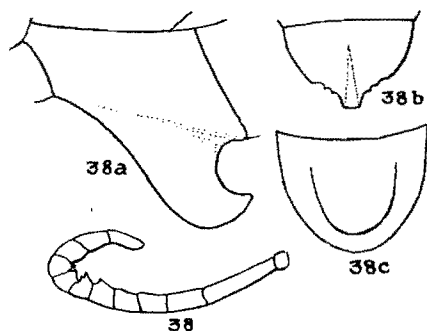


Fig. 38. *Bembex compedita*, ♂, flagellum; a, ♂, second sternite; b, ♂, seventh tergite; c, ♂, sixth sternite.

Pilosity and pubescence brownish grey, the pubescence on the mesonotum somewhat fulvous. Mesonotum, scutellum and mesopleurae dull, closely and moderately strongly punctured, the punctures round. Tergites dull, closely and finely punctured, the seventh coarsely on each side, smooth and shining in the middle. Sternites shining, sparsely and coarsely punctured in the middle, less coarsely at the sides. Clypeus very convex, not flattened in the middle in front. Eyes almost parallel; the interocular distance on the vertex equal to the length of the first five joints of the flagellum. The second joint of the flagellum is two and a quarter times longer than the third, the tenth and eleventh are excavated below, the sixth to ninth spinose below. Second sternite with a large, curved and compressed tooth. Sixth sternite with a semi-elliptical platform. Seventh tergite broadly truncate at the apex, the apical half of the lateral margins concave and trisinate. Femora not serrate. Basal joint of the anterior tarsi with six spines; the basal joint of the middle tarsi angularly dilated a little beyond the base.

♀. 17 mm. long. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. The second joint of the flagellum is

twice as long as the third, the apical joint half as long again as the penultimate. Sixth tergite triangular, narrowly rounded at the apex. Otherwise like the ♂.

Blantyre and Mlanje, Nyasaland. April to May.

B. flavicincta Turner (figs. 39, 39a-c; Plate VI, figs. 33, 49). *Ann. Mag. N.H.* IX, p. 414, ♂, ♀. 1912.

♂. 20-23 mm. long. Lemon yellow. Two spots below the anterior ocellus, the ocellar area, sides of the vertex at the upper margin of the eyes, occiput, the mesonotum in the middle so as to enclose a yellow U-shaped mark, the anterior margins of the scutellum and metanotum, epinotal dorsum in front narrowly and a streak on each side of its median area, black. The base and apical margins of the first six tergites narrowly, two transverse spots on each of them, a median spot on the second sternite, the basal half or less of the third and fourth sternites, the fifth and sixth excepting their apical margins and the seventh, black. Seventh tergite flavo-ferruginous. Mesopleurae and narrow lines margining the sclerites on the sides of the thorax, black. Flagellum ferruginous, darker at the apex. Legs yellow. Wings hyaline, the subcosta black, the other veins ferruginous. Pilosity and pubescence whitish and sparse. Thorax very shallowly, closely and finely punctured, the punctures oblique. Tergites closely punctured, the punctures a little larger than those of the mesonotum. Seventh tergite with a few large punctures. Sternites shining, very sparsely and moderately coarsely punctured. Eyes nearly parallel, slightly divergent above and below. Labrum and clypeus convex transversely. Interocular distance on the vertex nearly equal to the length of the first four joints of the flagellum. Second joint of the flagellum slightly more than twice as long as the third; the ninth to eleventh joints slightly excavated below, the seventh to eleventh slightly dilated, the apical joint a little curved, and a little longer than the penultimate. Second sternite simple, or sometimes with a trace of a median longitudinal carina on its apical half; sixth with a triangular compressed spine on its apical half and projecting over the apical margin, the seventh with two high longitudinal carinae, close together and not reaching the apical margin of the segment. The ventral flaps of the seventh tergite are very large and cover the greater part of the seventh sternite. Seventh tergite triangular, broadly rounded at the apex, slightly sinuate at the sides. Basal joint of the anterior tarsi with five or six spines. Middle femora distinctly serrate along their whole length behind, the teeth large. The basal joint of the middle tarsi slightly swollen a little beyond the base.

♀. 24 mm. long. Eyes slightly more divergent below than in the ♂. Sixth tergite coarsely punctured, closely so at the sides, the sixth sternite sparsely and very coarsely punctured in the middle. Otherwise like the ♂.

Pakasa, N. Rhodesia (Silverlock); Sanyati Valley, S. Rhodesia (R. H. R. Stevenson). (R.M. coll.)

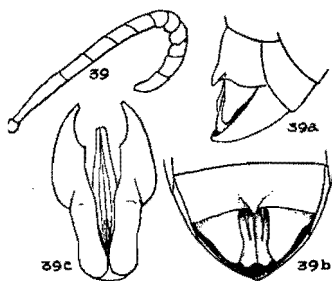


Fig. 39. *Bembex flavicincta*, ♂, flagellum; a and b, ♂, sixth and seventh sternites; c, ♂, genitalia.

B. capensis Lep. (figs. 40, 40a-c; Plate VI, fig. 32). *Hist. Nat.* III, p. 273, ♂. 1845.

B. natalis Dahl. *Hymen. Eur.* I, p. 489. 1845.

♂. 16-17 mm. long. Black. Mandibles excepting the apex, labrum, sides and anterior margin of the clypeus, lower corners of the face, scapes below, posterior orbits narrowly, posterior margin and sides of the pronotum, the lower anterior angle of the mesopleurae, the lateral margins of the mesonotum opposite the tegulae, narrow bands, often obsolete, on the posterior margins of the scutellum and epinotal dorsum, posterior angles of the latter, and the legs, pale lemon yellow. Femora streaked with black above. Tergites 1-5 with pale glaucous white bands, those on the first and second yellowish in front and at the sides, on the third to fifth yellowish at the sides only, the sixth tergite ochreous, the seventh black at the base and reddish yellow on the apical half. The first sternite, excepting its apical margin, and the basal half of the second, black; the sides of the latter yellow, the tooth in the middle red. Sternites 3-5 yellow, stained with reddish brown in the middle, the sixth pale ferruginous in the middle, ochreous at the sides. The upper side of the scape and the flagellum black, the latter pale brown below. Pilosity on the head and thorax white and fairly dense, the clypeus covered with a decumbent silvery pubescence. Sculpture of the mesonotum and sternites like that of *fuscipennis*. Seventh tergite fairly strongly and closely punctured at the sides. Clypeus not flattened in front. Eyes very slightly divergent below. Second joint of the flagellum four and a half times longer than wide at the apex, and two and a third times longer than the third joint; the sixth to eighth joints spinose behind, the ninth slightly dilated, the tenth and eleventh distinctly so, the apical joint slightly curved and barely longer than the penultimate. Interocular distance on the vertex equal to the length of the first five joints of the flagellum. Second sternite with a large and compressed tooth. Sixth sternite with a triangular platform, higher and more acute at the apex than in *fuscipennis*, the seventh sternite tricarinate, the lateral carinae not quite reaching the apical margin. Seventh tergite almost semi-circular, widely truncate at the apex. Basal joint of the anterior tarsi with six yellow spines. Basal joint of the middle tarsi dilated over the basal two-thirds. Outer paramera of the genitalia distinctly angular on the outside below the middle.

♀. 16 mm. long. Scares black above, reddish ochreous below; flagellum ferruginous, the first and last three joints blackish. Tergites 1-5 with lemon yellow bands, the sixth tergite and sternite reddish orange yellow. Second joint of the flagellum nearly five times longer than wide at the apex and two and a quarter times longer than the third. Interocular distance on the vertex equal to the length of the first four joints of the flagellum. Sixth tergite triangular, narrowly rounded at the apex. Tarsal comb composed of pale ferruginous spines. Otherwise like the ♂.

A common species widely distributed throughout Rhodesia and South Africa.

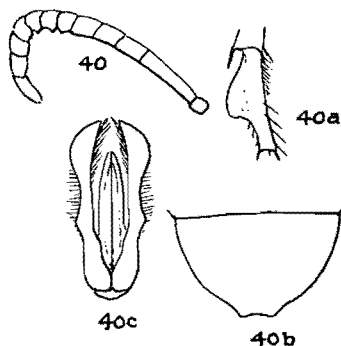


Fig. 40. *Bembex capensis*, ♂, flagellum; a, ♂, basal joint of middle tarsus; b, ♂, seventh tergite; c, ♂, genitalia.

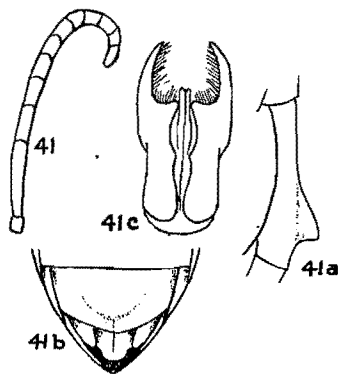
17. ALBOPILOSA Group.

Face very wide, the eyes slightly divergent above.

♂. Legs normal. Middle tibiae with a spur. Second sternite with a small tubercle, dull, shallowly and finely punctured. Sixth sternite slightly swollen, not tuberculate. Seventh sternite with a feeble median carina. Seventh tergite triangular, widely rounded at the apex. The genitalia resemble those of *B. cinctella* Handl. and this group is allied to the *cinctella* group, differing chiefly in having no apical projection on the middle tibiae.

B. albopilosa n.sp. (figs. 41, 41a-c; Plate VI, fig. 40).

♂. 14 mm. long. Black. Mandibles excepting the apex, labrum, clypeus, sides of the face and its base between the antennal sockets, scapes below and the posterior orbits very narrowly, chrome yellow. Flagellum black above, brownish yellow below. Legs yellow, the basal two-thirds of the femora above, and the basal third below, black; the anterior tibiae with a black streak on the outside. Abdomen pale lemon yellow; the basal half of the first tergite, basal third of the second and the extreme base of the following tergites, black. (In the type the segments are invaginated, so that the basal black is not visible from above on the last four segments.) Sternites lemon yellow, the basal half of the first six, black. Wings hyaline, the veins blackish. Head,



thorax and first tergite with a long, dense and white pilosity, very apparent when the insect is viewed from the side. Dorsum of the thorax shallowly, finely and closely punctured. Second sternite fairly dull, with a very shallow, fine and close puncturation all over; the third to sixth sternites somewhat shining, more finely and more closely punctured than the second. Seventh tergite fairly closely and finely punctured. Clypeus convex, not flattened in front. Eyes slightly divergent above, the interocular distance on the vertex being equal to the length of the first five joints of the flagellum, whereas it is equal to only a little more than the first four across the clypeus. All the joints of the flagellum simple, the second joint twice as long as the third and five times longer than wide at the apex, the last joint rounded at the apex and not much longer than the penultimate. Vertex not deeply impressed on each side of the ocellar area, the latter without a median tubercle. Second sternite with a curved compressed tooth extending over the third fourth of its length, sixth sternite with a low and indistinct, semi-circular swelling, the seventh with a feeble median longitudinal carina. Seventh tergite triangular, rounded at the apex, the sides slightly sinuate. Legs normal. The tarsal comb composed of yellowish spines of which there are six on the basal joint.

Klipfontein, 1♂, type (L. Peringuey); Swakopmund, 1♂. Both specimens in the South African Museum.

The specimen from Swakopmund is defective, lacking the antennae, and in the type all the joints of the flagellum are concave below, a condition which

is not natural but due to shrivelling. The specimen looks as if at one time it had been preserved in alcohol.

The following species cannot be placed within any of the known groups owing to the absence of one sex or to insufficient description.

B. junodi n.sp. (figs. 42, 42a-c; Plate VI, fig. 45).

♂. 14 mm. long. Black. Labrum, clypeus, mandibles excepting the apex, sides and base of the face, the whole of the scapes and the posterior orbits, lemon yellow. Flagellum ochreous, slightly reddish brown above. Posterior margin and sides of the pronotum, sides of the mesonotum, narrow bands on the posterior margins of the scutellum and metanotum, an arcuate band on the epinotum and the greater part of the sides of the thorax, lemon yellow. Tergites 1-6 with dirty white bands which become yellowish at the sides, those on the first four dilated at the sides. Sternites black, the apical half of the first, the sides and base of the second, and lateral triangular maculae on the third to fifth, dirty yellow. Legs yellow, the trochanters and a streak on the upper side of the femora, black. Wings hyaline, the veins brown. Pilosity greyish, short and very scanty, absent from the first tergite as well as the rest of the abdomen. Mesonotum very finely and closely punctured. Sternites fairly dull, shallowly and closely punctured, the sixth a little more strongly and less closely than the rest. Clypeus not prominent, the anterior two-thirds in the middle very distinctly flattened. Face carinate between the antennal sockets. Eyes parallel. Flagellum long and rather thick, the last five joints thinner than the basal ones, the second distinctly short, barely more than one-fifth longer than the third and only three times longer than wide at the apex, the seventh and eighth not spinose but merely angular posteriorly; the apical joint cylindrical, nearly straight and half as long again as the penultimate. None of the joints dilated or excavated below. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. The vertex is only very shallowly impressed on each side of the ocellar area; the latter lacks a median tubercle. Second sternite with a low median longitudinal carina, which does not reach the basal or apical margins. Sixth sternite with a feebly defined and very slightly elevated triangular area. Seventh sternite with three widely separated longitudinal carinae. Seventh tergite almost semi-circular, sparsely and coarsely punctured. Genitalia not unlike those of *Baumannii* and *madecassa* Sauss. Basal joint of the anterior tarsi with seven spines; the middle femora with two indistinct teeth near the apex below; the middle tibiae with one spur, the basal joint of the middle tarsi slightly flattened at the apex.

Laurenço Marques, 2 ♂♂ (Rev. H. A. Junod).

A species very distinctly characterised by the antennae, the second joint of the flagellum being unusually short. In the absence of the ♀ I am unable

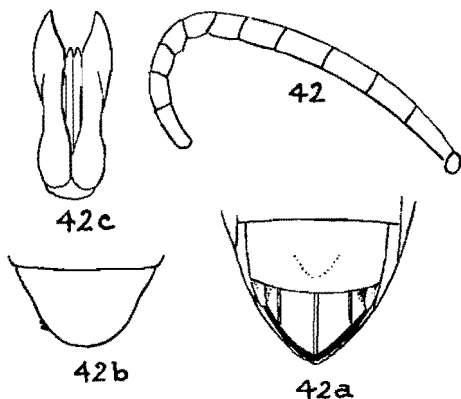


Fig. 42. *Bembex junodi*, ♂, flagellum; a, ♂, sixth and seventh sternites; b, ♂, seventh tergite; c, ♂, genitalia.

to place this species in any of Handlirsch's groups. Apart from the middle tibiae not being produced into a point at the apex, and the shape of the genitalia, it agrees fairly well with the *gracilis* group.

Type in the Transvaal Museum.

B. obtusa Turner. *Ann. Mag. N.H.* XIX, p. 436, ♂. 1917.

“♂. 21 mm. long. Black; mandibles excepting the apex, labrum, clypeus, an oblique black (?) spot on each side of the face, scapes, posterior orbits, posterior margin of the pronotum, pronotal tubercles, prosternum, the mesosternum in front, a line on the mesonotum opposite the tegulae, an oblique line on each side of the scutellum, posterior margin of the metanotum and the legs, yellow; anterior femora streaked with black above, the anterior tarsi spotted with black underneath; first tergite with a transverse macula on each side and a very narrow median band, the second to sixth tergites with bisinuate transverse bands, the sternites 2-5 with maculae on each side and a narrow apical band on the first sternite, olive yellow; flagellum ochreous below; apex of the sixth tergite and basal half of the seventh, ferruginous; wings hyaline, the veins fuscous, twice as long as the thorax.

♂. Clypeus very broadly triangularly flattened on the apical half, labrum flattened at the base; a strong longitudinal carina between the antennae; sixth, seventh and eighth joints of the flagellum each with two or three small spines beneath, joints 9 and 10 subdenticulate beneath, penultimate joint concave beneath, longer than the tenth, apical joint about half as long again as the penultimate, concave beneath, blunt and rather strongly curved at the apex. Fore tarsi rather stout, with a strong tarsal comb, the apical joint flattened, nearly as broad and less than half as long again as the penultimate, with a small spine on the middle of the outer margin; anterior and intermediate femora not serrate; intermediate tibiae produced into a distinct spine at the apex. Seventh dorsal segment very broad, with parallel sides on the basal portion to beyond the middle, the apex obtuse; the surface of the segment finely punctured, with coarse punctures intermixed near the apex. Second ventral segment with a very large tubercle, which is broadly truncate at the apex; sixth ventral segment with a slightly raised, broadly triangular area near the apex; seventh broad, with a longitudinal carina on each side; eighth produced into a stout blunt tooth. Median cell of the hind wing emitting only one vein from the apex.

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

The apical dorsal segment is shaped somewhat as in the variety of *B. pugilatrix* figured by Handlirsch (*Sitzungsb. Akad. Wiss. Wien*, CII, t. V. fig. 15), but the parallel sides are continued much nearer to the apex than in that figure. In the antennae it approaches *albofasciata* Smith, also in the short wings, but differs in the legs and apical abdominal segments. The three intermediate joints of the fore tarsi are moderately dilated, about as broad as long, nearly as much dilated as in *latitarsis* Handl.”

B. ornatilabiata Cam. and *B. lineatifrons* Cam. (*Sjöstedt's Kilimandjaro-Meru Exped.* VIII, pp. 291 and 292), from Meru, East Africa, are insufficiently described in Cameron's paper, in spite of the considerable details given therein concerning the colour pattern. I am inclined to suspect that the first species is synonymous with *melanopa* Handl., but the second is unrecognisable.

PLATES VI AND VII

PLATE VI

1. *Bembex albofasciata*, ♂. $\times 4\frac{1}{2}$.
2. *B. albofasciata*, ♀. $\times 4\frac{1}{2}$.
3. *B. ulula*, ♀. $\times 4\frac{1}{2}$.
4. *B. cultrifera*, ♀. $\times 4\frac{1}{2}$.
5. *B. anomalipes*, ♂. $\times 3$.
6. *B. afra*, ♂. $\times 4\frac{1}{2}$.
7. *B. Moebii*, ♀. $\times 4\frac{1}{2}$.
8. *B. odontopyga*, ♂. $\times 3$.
9. *B. Scotti*, ♀. $\times 5$.
10. *B. ugandensis*, ♀. $\times 3$.
11. *B. monedula*, ♀. $\times 3$.
12. *B. albidula*, ♂. $\times 3$.
13. *B. carinata*, ♀. $\times 5$.
14. *B. carinata*, ♂. $\times 5$.
15. *B. Arnoldi*, ♀. $\times 4\frac{1}{2}$.
16. *B. melanopa*, ♀. $\times 4\frac{1}{2}$.
17. *B. melanopa*, ♂. $\times 4\frac{1}{2}$.
18. *B. massaica*, ♀. $\times 4\frac{1}{2}$.
19. *B. intermedia*, ♂. $\times 4\frac{1}{2}$.
20. *B. capicola*, ♂. $\times 4$.
21. *B. capicola*, ♀. $\times 4\frac{1}{2}$.
22. *B. Braunsii*, ♀. $\times 4\frac{1}{2}$ (type).
23. *B. Kriechbaumeri*, ♂. $\times 6$ (type).
24. *B. Kriechbaumeri*, ♀. $\times 4\frac{1}{2}$ (type).
25. *B. ochracea*, ♂. $\times 4\frac{1}{2}$.
26. *B. liturata*, ♂. $\times 4\frac{1}{2}$.
27. *B. liturata*, ♀. $\times 4\frac{1}{2}$.
28. *B. harenarum*, ♂. $\times 4\frac{1}{2}$.
29. *B. harenarum*, ♀. $\times ca\ 4\frac{1}{2}$.
30. *B. fuscipennis*, ♂. $\times 4\frac{1}{2}$.
31. *B. sibilans*, ♀. $\times 4\frac{1}{2}$.
32. *B. capensis*, ♀. $\times 4\frac{1}{2}$.
33. *B. flavicincta*, ♀. $\times 4\frac{1}{2}$.
34. *B. Cameronis*, ♂. $\times 4\frac{1}{2}$.
35. *B. venusta*, ♂. $\times 4$.
36. *B. Bequaerti*, ♀. $\times 4$.
37. *B. Bequaerti*, ♂. $\times 4$.
38. *B. Bequaerti*, var. *dira*, ♀. $\times 4$.
39. *B. Bequaerti*, var. *dira*, ♂. $\times 4$.
40. *B. albopilosa*, ♂. $\times 6$.
41. *B. fraudulenta*, ♀. $\times 6$.
42. *B. fraudulenta*, ♂. $\times 6$.
43. *B. ulula*, thorax. $\times 9$.
44. *B. cultrifera*, ♀, thorax. $\times 4\frac{1}{2}$.
45. *B. funodi*, ♂, thorax. $\times 9$.
46. *B. liturata*, race *flavopicta*, ♂. $\times 4\frac{1}{2}$.
47. *B. venusta*, ♂. $\times 5$.
48. *B. Stevensoni*, ♂. $\times 6\frac{1}{2}$.
49. *B. flavicincta*, ♀. $\times 6$.
50. *B. ugandensis*, ♂. $\times 6$.
51. *B. scaura*, ♂. $\times 6$.

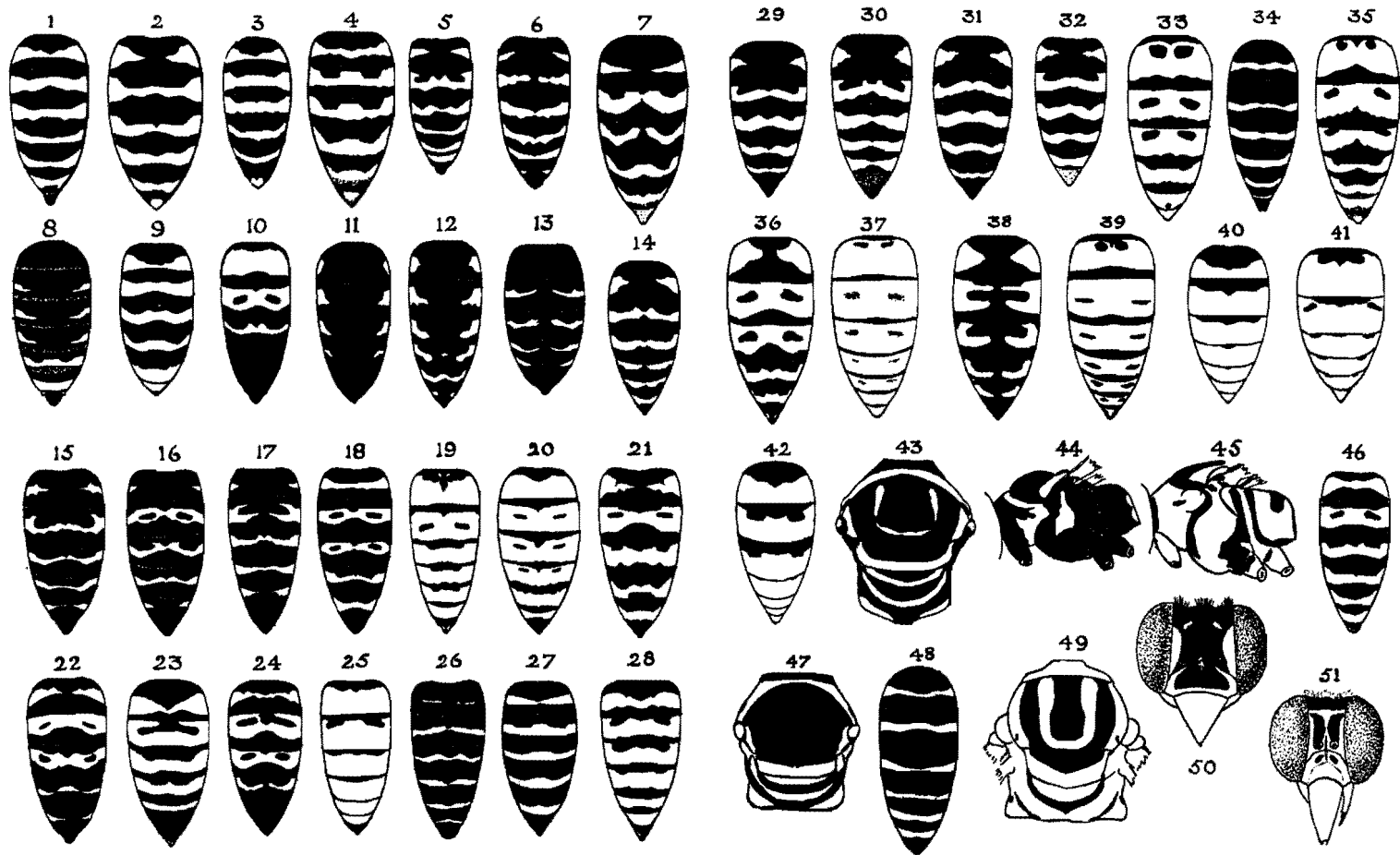


PLATE VII

1. *Tachytes nigro-annulata*. × 24.
2. *Tachytes opposita*. × 16.
3. *Tachytes erynnis* (?). × 16.
4. *Tachytes cataractae*. × 16.
5. *Tachytes disputabilis*. × 24.
6. *Tachytes Turneri*. × 16.
7. *Tachytes Neavei* × 16.
8. *Tachytes observabilis*. × 16.
9. *Tachytes rufiscutis*. × 16.
10. *Tachytes bulawayoensis*. × 16.
11. *Tachytes melancholica*. × 16.
12. *Tachytes midas*. × 16.
13. *Tachytes rhodesiana*. × 16.
14. *Tachytes separabilis*. × 16.
15. *Tachytes notabilis*. × 24.
16. *Tachytes nudiventris*. × 16.
17. *Tachytes lepida*. × 35.
18. *Tachytes punctuosa*. × 16.

