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Annals and Magazine of Natural History: Series 8

Publication details, including instructions for authors and subscription information:
<http://www.tandfonline.com/loi/tnah14>

XLI.—Notes on Fossorial Hymenoptera.—XXVIII. On new Ethiopian species of *Bembex* in the British Museum

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Published online: 15 Sep 2009.

To cite this article: Rowland E. Turner F.Z.S. F.E.S. (1917) XLI.—Notes on Fossorial Hymenoptera.—XXVIII. On new Ethiopian species of *Bembex* in the British Museum, *Annals and Magazine of Natural History: Series 8*, 19:114, 436-441, DOI: [10.1080/00222931709486960](https://doi.org/10.1080/00222931709486960)

To link to this article: <http://dx.doi.org/10.1080/00222931709486960>

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XLI.—*Notes on Fossorial Hymenoptera*.—XXVIII. *On new Ethiopian Species of Bembex in the British Museum*. By ROWLAND E. TURNER, F.Z.S., F.E.S.

Bembex obtusa, sp. n.

♂. Niger; mandibulis, apice excepto, labro, clypeo, fronte macula obliqua nigra utrinque, scapo, orbitis externis, pronoto margine postico, callis humeralibus, prosterno, mesosterno antice, mesonoto linea supra tegulas, scutello linea obliqua utrinque, postscutello margine postico, pedibusque flavis; femoribus anticis supra nigro-lineatis, tarsis anticis infra nigro-maculatis; segmento dorsali primo macula transversa utrinque fasciaque transversa mediana angustissima, segmentis dorsalibus 2-6 fascia transversa bisinuata, ventralibus 2-5 macula utrinque, segmento-que ventrali primo fascia angusta apicali flavo-olivaceis; flagello subtus ochraceo; segmento dorsali sexto apice, septimoque dimidio basali ferrugineis; alis hyalinis, venis fuscis, thorace duplo longioribus.

Long. 21 mm.

♂. Clypeus very broadly triangularly flattened on the apical half, labrum flattened at the base; a strong longitudinal carina between the antennæ; 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. pugillatrix* figured by Handlirsch (*Sitzungsber. 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 antennæ it approaches *albofasciata*, Sm. (= *karschii*, Handl.), 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.

Bembex johnstoni, Turn.

Bembex johnstoni, Turn. *Ann. & Mag. Nat. Hist.* (8) x. p. 372 (1912). ♂.

This belongs to the group of *B. diversipennis*, not of *möbii*, to which I compared it in the description; it is, indeed, probably only an extreme colour-variation of *diversipennis*. In a considerable series of that species from E. Africa the thorax is always without yellow markings in both sexes, except in one female from Harar. The yellow markings on the abdomen vary much, but do not form continuous fasciæ as in most West-African specimens. The wings are hyaline in the male, more or less strongly fuscous at the base in the female in all specimens which I have seen.

Bembex albidula, sp. n.

♂. Niger; abdomine cæruleo-tincto; mandibulis, apice excepto, labro, clypeo macula magna basali nigra utrinque, scapo subtus, orbitis, macula parva utrinque sub ocellis, prosterno, callis humeralibus apice, segmento mediano angulis posticis, segmentis dorsalibus 2-4 fascia late interrupta, primo macula magna utrinque, quinto fascia anguste interrupta, sexto linea transversa utrinque, segmentis ventralibus secundo tertioque macula parva utrinque, femoribus anticis intermediisque subtus, tibiis supra nigro-lineatis, tarsisque anticis intus albidis; alis hyalinis, venis fuscis, anticæ latitudine thoracis duplo et dimidium longiores. Long. 22 mm.

♂. Eyes distinctly divergent towards the clypeus; labrum flattened, clypeus convex; carina between the antennæ very low. Antennæ almost normal; eighth joint of the flagellum with two very minute spines beneath; ninth with a minute spine near the base; apical joint slightly curved, rounded at the apex, longer than the penultimate. Fore tarsi moderately stout, the joints not dilated; the basal joint with seven spines, the basal spine small. Fore and intermediate femora unarmed, intermediate tarsi simple, intermediate tibiæ not produced at the apex and without a long apical spur. Seventh dorsal segment subtriangular, narrowly rounded at the apex, closely punctured at the base, sparsely at the apex. Second ventral segment with a small tubercle near the apex; sixth produced into a stout blunt tooth at the apex; seventh unarmed, without carinæ; eighth in the form of an acute spine. Median cell of the hind wing emitting two veins from the apex.

Hab. Sierra Leone, Mussaia (*J. J. Simpson*), April.

This fine species is somewhat intermediate between *diversipennis* and *monedula*, but seems to belong to the group of the latter, though distinguished from it by the spines on the eighth and ninth joints of the flagellum, and by the much narrower seventh dorsal segment. Handlirsch, in giving the distinguishing characters of the group, says "*Mittelschenkel gezähnt*," but in describing the species says "*femoribus intermediis infra non dentatis*." The latter statement is correct.

B. ugandensis, Turn., is also near this species, but differs in the structure of the antennæ, the hollow grooves beneath the three apical joints being well marked in *ugandensis* and almost obsolete in the present species, the spines on the other joints are also different. The colour-differences, though great and apparently constant locally, cannot alone be relied on in this group.

Bembex odontopyga, sp. n.

♂. Niger; mandibulis, apice excepto, labro, clypeo macula basali nigra utrinque, scapo subtus, orbitis, femoribus, tibiisque subtus, tarsisque flavis; flagello subtus obscure brunneo; segmentis dorsalibus 2-4 fascia angusta late interrupta, quinto sextoque fascia continua, septimo macula obliqua utrinque, segmentisque ventralibus 2-5 fascia angusta continua apicali brunneo-flavis; segmentis dorsalibus obscure cæruleo-micantibus; segmento septimo dorsali apice fusco-ferrugineo; alis hyalinis, venis fuscis. Long. 19 mm.

♂. Clypeus with a carina from the base to beyond the middle, deflexed from the end of the carina to the apex, not very strongly convex; the carina between the antennæ very distinct. Four apical antennal joints distinctly hollowed beneath, stout, the apical joint blunt at the apex, a little longer than the penultimate. Head, thorax, and median segment clothed with long whitish pubescence, that on the mesonotum shorter and brownish. Fore tarsi normal, the basal joint with seven spines; fore and intermediate femora not serrate. Median segment with a very feeble longitudinal groove. Seventh dorsal segment with a short spine on each side near the base, the apex rather broadly truncate, not undulating at the sides. Ventral segments unarmed. Wings about two and a half times as long as the breadth of the thorax; median cell of the hind wing emitting two veins from the apex. The eyes are distinctly divergent towards the clypeus.

Hab. Nyasaland, Ngara (*Dr. J. E. S. Old*), October.

This belongs to the *bidentata* group, and apart from colour-differences may be distinguished from *möbii* by the absence of a strong tooth at the apex of the intermediate femora; from *bidentata* by the more distinct carina of the clypeus, by the colour of the pubescence, and by the broader apex and less developed teeth of the seventh dorsal segment. *B. scotti*, Turn., the only remaining African species of the group, may be at once distinguished from this by the much finer and sparser puncturation of the thorax and median segment. In colour *odontopyga* resembles *compedita*, Turn., which is allied to *fuscipennis*.

Bembex forcipata, Handl.

Bembex forcipata, Handl. Sitzungsab. Akad. Wiss. Wien, cii. p. 798 (1893). ♂.

Bembex massaica, Cameron, Sjöstedt, Kilimandjaro-Meru Exp. ii. p. 290 (1910). ♂.

Bembex liturata, sp. n.

- ♂. Niger; labro albedo, basi macula longitudinali brunnea; mandibulis, apice excepto, clypeo fascia transversa basali nigra, scapo subtus, orbitis, pronoto margine postico, propleuris callis humeralibus, mesosterno antice, tegulis macula, linea supra tegulas, scutello margine postico, pedibusque flavis; tibiis supra nigro-lineatis; segmentis dorsalibus sex basalibus fascia flavo-olivacea; segmentis ventralibus primo apice, secundo fascia lata transversa, 3-6 macula utrinque flavis; alis hyalinis, venis fusco-ferrugineis.
- ♀. Mari similis, clypeo dimidio basali nigro; segmento mediano macula parva utrinque flavo; segmento ventrali secundo dimidio apicali brunneo-ferrugineo, utrinque flavo-maculato.
- Long., ♂ 17, ♀ 15 mm.

♂. Clypeus strongly convex; inner margin of the eyes almost parallel; no carina between the antennæ; seventh joint of the flagellum emarginate at the apex beneath, eighth with a small spine beneath, ninth and tenth stout, penultimate joint much broadened, longer than the subconical apical joint. Tarsi slender, the spines of the comb of the anterior tarsi slender; intermediate femora very feebly serrate. Seventh dorsal segment very broadly rounded or subtruncate at the apex, with a marginal carina on each side near the base. Second ventral segment with a strong tubercle, which is rounded at the apex; sixth with a large raised semicircular area. Wings rather short, only twice as long as the breadth of the thorax; median cell of the hind wing emitting only one vein from the apex.

♀. Basal joint of the fore tarsus with seven spines; sixth dorsal segment broadly triangular, very sparsely punctured in the middle, more coarsely and closely on the sides; second ventral segment shining in the middle, with large sparse punctures.

Hab. S. Africa, Willowmore (*Dr. H. Brauns*), December.

The male genitalia are not strongly curved as in the *melanopa* group, the relationship being rather with the *mediterranea* group.

Bembex opima, sp. n.

- ♂. Niger, clypeo, mandibulis, apice excepto, labroque albo-flavidulis; flagello subtus brunneo-ferrugineo; scapo, supra nigro maculato, orbitis, pronoto postice, callis humeralibus, tegulis, mesonoto linea supra tegulas, scutello margine postico, postscutello margine postico, segmento mediano fascia angusta apicali, segmento dorsali primo dimidio apicali, secundo antice nigro bisinuato, 3-6 omnino, segmentis ventralibus 2-5 lateribus et

margine apicali, pedibusque flavis; alis hyalinis, venis fusco-ferrugineis.

♀. Mari similis; macula flava sub ocellis, segmento dorsali secundo flavo, macula parva nigra utrinque, 3-5 basi anguste nigris, sexto nigro macula flava apicali utrinque; alæ anticæ thoracis latitudine duplo et dimidium longiores.

Long., ♂ ♀, 16 mm.

♂. Clypeus strongly convex, labrum flattened, no carina between the antennæ; seventh, eighth, and ninth joints of the flagellum spined beneath, apical joint curved, truncate at the apex, no longer than the penultimate. Anterior femora unarmed, intermediate femora very obscurely serrate; anterior tarsi normal, the basal joint with six spines; intermediate tibiæ and tarsi normal. Second ventral segment with a strong tubercle acute at the apex; sixth ventral segment with a slightly raised triangular area; seventh dorsal segment closely punctured, narrowly rounded at the apex, the sides with short, stiff, black pubescence. Median cell of the hind wing emitting two veins from the apex, the lower vein ill-defined. Head and thorax thickly clothed with grey pubescence.

♀. Middle of the second ventral segment shining, with deep sparse punctures; sixth dorsal segment subtriangular, very narrowly rounded at the apex, closely punctured, with stiff setæ on the sides, subcarinate longitudinally in the middle.

Hab. S. Africa, Willowmore (*Dr. H. Brauns*), January and February.

The seventh ventral segment of the male has a median longitudinal carina.

This seems to be nearest to *capicola*, Handl., though differing in the armature of the ventral segments of the male, the shape and sculpture of the seventh dorsal segment, and in other smaller details.

XLII.—*On Fabricius's Types of Odonata in the British Museum (Natural History).* By HERBERT CAMPION.

AS far as I am able to ascertain, the British Museum Collections include fourteen Dragonflies which have been described or determined by Fabricius. All but two of them came in Sir Joseph Banks's Collection of insects, which was presented by the Linnean Society in 1863. Although the welfare of