

Northern Nigeria : R. Benue, between Bagana and Lokoja, March, 1907 (*Dr. G. J. Pirie*).

The collector's field-note attached to the type is as follows:—

“Caught on a sand-bank in the evening, while we were sitting out by lamp-light: bit a European.”

The present species may be distinguished from the foregoing (*Rh. concinna*, Austen) by the absence of markings on the thorax and of a dark transverse band on the first abdominal segment, as also by the band on the second (as well as that on the third) abdominal segment being interrupted in the middle line; as regards the wings, the markings in the distal half are darker in *Rh. stimulans* than in *Rh. concinna*, while the transverse band is narrower, and the apical blotch reaches the posterior branch of the third longitudinal vein, instead of terminating a little before the middle of the second submarginal cell.

Rhinomyza stimulans is closely allied to a new species of the same genus found in Southern Nigeria, of which a ♀ from Agbabu, S. Nigeria, 23.iv.1909 (*Dr. Hannington*), is in the possession of the Liverpool School of Tropical Medicine. Apart from its larger size (length 13.5 mm., wing-expanse 26.3 mm.), the Liverpool specimen is distinguished by its darker colour (dorsum of thorax mummy-brown), dark brown antennæ, shorter and stouter first antennal joint, second antennal joint having its upper angle much more produced (continued into a long point), and, in the wing, by the brown blotch in the tip of anal cell extending to the hind margin and filling up rather more than the distal third of the axillary cell. In the shape of the frontal callus, general pattern of the wing-markings, and general shape and extent of the dark bands on the abdomen the two species are alike.

XXXIX.—*Descriptions and Records of Bees*.—XXXIII.

By T. D. A. COCKERELL, University of Colorado.

Callomelitta turnerorum, sp. n.

♀.—Length about $7\frac{1}{2}$ mm.

Thorax, legs, and abdomen entirely bright rufo-fulvous; head black, with the lower margin of clypeus, labrum, and the bidentate mandibles ferruginous; antennæ fulvous, the

flagellum thick, its middle sutures somewhat constricted beneath; eyes large; face narrow, facial quadrangle very much longer than broad; hair of face not dense enough to hide surface, pale, with a silvery lustre and a slight yellowish tint; clypeus, face, and front strongly and densely punctured; sides of vertex shining, with strong well-separated punctures; cheeks small, hardly half diameter of eye; mesothorax and scutellum shining, with distinct well-separated punctures; scutellum with pale yellowish hair; area of metathorax broadly triangular, smooth and shining, without sculpture; sides of metathorax with two little projecting points, as in *Binghamiella*. Legs with thin pale golden hair; tegulae clear rufo-fulvous. Wings hyaline but hairy, the apex broadly dusky, including apical part of marginal cell; stigma and nervures ferruginous; stigma large; lower section of b. n. gently arched, falling a little short of t.-m.; second s.m. much higher than broad, twice as broad below as above, and receiving first r. n. in middle; third s.m. also higher than broad. Abdomen broad, shining, with sparse inconspicuous pale yellowish hair; third segment with evident punctures.

Hab. Cairns, Queensland, "Kur. 3. 02" (*G. & R. Turner*). British Museum.

A very distinct species, easily known by its peculiar colour. It is in some ways intermediate between *Callomelitta* and *Binghamiella*. The metathorax and comparatively small size suggest *Binghamiella*, but the venation is different and more like that of *Callomelitta*. The peculiar coloration recalls *Halictus rowlandi* and *Parasphecodes contaminatus*, also found at Cairns.

Exoneura bicolor, Smith.

Smith based this genus and species on the female only. *E. pictifrons*, Alfken, may be its male, it is from S.W. Australia; and Swan River must apparently be considered the type locality of *E. bicolor*, as it is the first of the two localities cited. A male in the British Museum from Victoria (*C. F.*, Sept. 1901, Turner Collection) may belong to *bicolor* or to *hamulata*—more probably, I think, to the latter, as it has the scape entirely dark, the first abdominal segment black above, and the second very largely black. The eyes are extremely large and prominent, and the face is very narrow, narrower in the middle than the width of an eye; clypeus pale yellow; yellow lateral face-marks narrow, not nearly reaching level of top of clypeus, the black interval between them and clypeus

about as broad as they are ; face and vertex with long black hair ; antennæ wholly dark ; flagellum thick, only moderately long ; abdomen claviform, slender basally ; hind tibia claviform, with a broad black band behind ; hind basitarsus thick, sausage-shaped. There is a fringe of curled dark bristles at the end of the abdomen, such as may be seen in male *Allodape*.

EURYGLOSSIDIA, gen. nov.

Bees superficially resembling *Parasphecodes*, but with the tongue *Colletes*-like in both sexes, and only two submarginal cells. From *Euryglossa* they are separated by the venation of the long and ample wings ; lower section of basal nervure only gently arched, falling only a little short of t.-m. ; submarginal cells both very long ; second s.m. receiving first r. n. at a distance from its base equal to about half of first t.-c. ; apical section of second r. n. vertical, joining second s.m. a short distance from end, the angle formed a right angle ; second s.m. narrowed above, the second t.-c. forming less than a right angle on outer side with marginal ; lower side of first s.m. almost straight ; stigma longer. Hind spur of female with four long slender dark spines, the other spurs minutely spinulose ; hairs of hind tibial scopa long-branched. Palpi essentially as in *Euryglossa*, except that the joints of the maxillary palpi are much longer, and the last joint is much longer than the penultimate.

Smith described two Australian bees as *Scrapter bicolor* and *S. carinata*. The name *bicolor* being preoccupied, it was altered by Dalla Torre to *australiensis*. Vachal, in 1897, proposed a generic name *Smithia* for these bees, but did not give any generic characters, and apparently acted simply from a sense of the improbability of the Australian insects belonging to *Scrapter*. *Smithia* being preoccupied, W. A. Schulz in 1906 substituted *Melittosmithia*.

There can be little doubt, I think, that these are Euryglossine bees. No type for *Smithia* or *Melittosmithia* has been designated ; I therefore name *carinata* (Smith), the first species cited by Schulz, as the type.

This insect seems from the description to be related to *Euryglossa froggattiana*, Ckll., which is by no means a typical *Euryglossa*. *Melittosmithia*, thus interpreted, is quite distinct from *Euryglossidia*, but it may be that the other species, *australiensis*, belongs to the latter genus.

Euryglossidia rectangularata, sp. n.

♀.—Length about 8 mm.

Head and thorax black, quite hairy; abdomen very bright chestnut-red, with a large round black spot on each side of second segment; femora black, with the knees ferruginous; tibiæ and tarsi ferruginous, more or less suffused with dusky; tegulæ ferruginous. Wings pale reddish, stigma and nervures ferruginous. Head broad; mandibles dark, strongly grooved; clypeus shining, with strong sparse punctures; supraclypeal area shining, punctured only at sides; sides of face shining, but front and vertex dull and granular; no definable facial foveæ; hair of cheeks and underside of thorax greyish white; hair of face partly fuscous and partly pale, of vertex behind ocelli long and dark fuscous; flagellum dull red beneath; mesothorax and scutellum dull, minutely tessellate, with scattered very weak punctures; hair of thorax above greyish, mixed with dark fuscous; metathorax essentially as in *Euryglossa*, the basal area large, triangular, dull and rough basally, more shining beyond; scopa of hind femora white, but the large plumose scopa of hind tibiæ grey; hind basitarsus longer than the other joints together. Abdomen smooth and shining, the hair at apex strongly stained with fuscous.

♂.—Much more slender; the abdomen claviform, slender basally; the abdomen is variably suffused with black and has a faint purple lustre, the second segment is the least darkened; stigma and nervures rufo-fuscous; face broad; clypeus covered with white hair; flagellum long, very obscure reddish beneath; ocelli prominent.

Hab. Victoria (C. F., Feb. 1901; Turner Collection); 3 ♀, 2 ♂. A female is the type.

E. rectangularata is the type of the genus. Another species is *Euryglossidia ichneumonoides* (*Euryglossa ichneumonoides*, Ckll., 1906).

Megachile kurandensis, sp. n.

♂.—Length about $8\frac{1}{2}$ mm.

A short broad species, the anterior tarsi simple but robust, with long pale fulvous hair behind. Black; ventral pubescence of head and thorax white, a very large thick beard on lower side of cheeks; face densely covered with golden-fulvous hair; vertex with long black hair; head ordinary; mandibles and antennæ black; hair of thorax above and pleura mainly black (long on scutellum), but fulvous on tubercles, at corners of mesothorax, in scutello-mesothoracic

suture, and behind scutellum; mesothorax well punctured, the punctures separate; tegulæ piceous. Wings dusky in marginal cell and throughout the apical region; b. n. not reaching t.-m.; second s.m. a little broader below than first. Legs ordinary, inner side of tarsi, and of tibiæ more or less, with fox-red hair. Abdomen with pale fulvous hair (like that of metathorax) at base; segments 2 to 4 with apical bands of bright golden-fulvous or golden-orange hair, fifth with about the apical two-thirds covered with such hair, and sixth entirely covered; margin of sixth very obtusely binodulose; no ventral spine; anterior coxæ unarmed, but with a large tuft of hair.

This may be compared with *M. sequior*, Ckll., but the latter has a pair of well-developed teeth on the sixth abdominal segment.

Hab. Kuranda, Cairns, Queensland, Jan. 1902 (*Turner*).
British Museum.

Megachile eucalypti, sp. n.

♀.—Length about 10 mm.

Black, parallel-sided, with the last three abdominal segments clothed with scale-like fulvous hair, which is so distributed that the surface appears minutely black-speckled, the tegument showing through; head large, facial quadrangle longer than broad; mandibles black, quadridentate; clypeus low and broad, strongly and very densely punctured, the lower margin shining, and slightly crenulate; sides of face with much white hair; flagellum obscurely reddish beneath; vertex densely and strongly punctured; thorax with four small but very dense and conspicuous tufts of white hair, one at each side of prothorax and one at each posterior corner of mesothorax; tubercles also with a dense white tuft, and one behind and a little below wings; mesothorax and scutellum strongly, extremely densely punctured; tegulæ piceous. Wings slightly dusky, with a darker streak in marginal cell; second s.m. very long. Legs ordinary; spurs pale. First abdominal segment with a conspicuous patch of white hair on each side; first three segments with apical, greyish, slightly fulvous-tinted hair-bands, that on first failing laterally; ventral scopa entirely white.

♂.—Length about 8½ mm.

Long and narrow, in most respects like the female; face densely covered with shining white hair; thoracic hair-spots smaller or even absent; vertex, mesothorax, and scutellum with a good deal of dark fuscous hair; flagellum long and

slender; anterior femora with long white hair behind and yellowish white in front, and beneath with a very well-defined oblique band of pure white felt or tomentum; anterior tibiæ reddish brown in front and near base, very thick, bulging and almost angular behind, posteriorly with an even brush-like fringe of fulvous-tinted hair; the inner edge of the anterior femora has a white tegumentary band, while the tibiæ, seen from within, are shining white, with a black margin, the apical end pale fulvous; anterior tarsi very extraordinary, being broadly expanded, the main part of the joints black, with a short silvery hair-fringe in front, but the expanded lamina white, with a broad black stripe along the posterior margin; the expanded white part of the third joint looks greyish exteriorly, having on the inner side a very large long-oval black spot; ferruginous claws are almost sessile on this great expanded structure; anterior coxæ with much white hair, but no spines, their trochanters beneath red; middle and hind knees red, their tibiæ more or less reddish, their tarsi entirely red; no band on first abdominal segment; sixth segment obtusely binodulose, the small nodules close together; no ventral spines.

This species resembles *M. nigrovittata*, Ckll., and *M. modesta*, Sm. The male is easily known by the extraordinary anterior legs. The female is known from such species as *M. rhodura*, Ckll., and *M. gilbertiella*, Ckll., by having the red or orange colour of the apex of the abdomen wholly due to hair.

Hab. Mackay, Queensland; female at flowers of *Eucalyptus*, Dec. 1899 (Turner, 291); males, April 1899 and Sept. 1900 (Turner, 5 a). British Museum.

Megachile serricauda, sp. n.

♂.—Length about 8 mm.

A short, rather robust insect, resembling the group of *M. macularis*, *sequior*, *cygnorum*, and *kurandensis*, but the thorax without hair-spots, and the margin of the sixth abdominal segment strongly but irregularly dentate or serrate, with a rounded central emargination. Black, with the dorsal pubescence fulvous and the ventral white; face densely covered with golden-fulvous hair; mandibles black, faintly reddish toward the apex, very hairy; eyes green; antennæ black; vertex closely punctured, but shining; mesothorax and scutellum dull, very densely and minutely punctured; fulvous hair of thorax abundant. Legs ordinary, except that the very hairy anterior basitarsus has a large, deep, hairless

excavation or groove on the inner side; anterior coxæ with strong but only moderately long black spines; middle and posterior tarsi with long white hair; tegulæ fuscous, paler at sides. Wings somewhat dusky. Abdomen shining, the hind margins of the segments with dense entire fulvous hair-bands; fifth segment with much fulvous hair basally, sixth covered with fulvous hair above, except apically; no ventral spine.

Compared with *M. kurandensis*, the antennæ are shorter in proportion and the ocelli are quite different. In *kurandensis* the ocelli are close together and the interocellar distance is less than that from lateral ocelli to eye or from ocelli to occipital margin, the vertex being broad. In *M. serricauda* the ocelli are wide apart, the interocellar distance being a little greater than the distance from ocelli to eye and much greater than that to occipital margin.

Hab. Mackay, Queensland, May 1900 (*Turner*). British Museum.

Megachile gilbertiella, sp. n. (vel *apicata*, subsp.?).

♀.—Length about 8 mm.

Black, parallel-sided, with the tegument of the fifth abdominal segment and rather more than the apical half of the fourth bright ferruginous; ventral scopa white, fulvous on apical segment; anterior margin of clypeus with two widely separated short teeth and a slight prominence in the middle between them.

This is certainly very close to *M. apicata*, Smith, but does not wholly agree with the description, and is from a very different locality. There is also some resemblance to *M. stalkerii*, Ckll., but comparison of types brings out important differences.

Head large; mandibles black; clypeus densely punctured; face and cheeks with white hair; flagellum dark brownish beneath; front and vertex with strong and dense but distinct punctures; mesothorax and scutellum with similar punctures, shining between them; white thoracic hair-spots as in *M. eucalypti*; tegulæ very dark. Wings rather dusky; second s.m. very long. Legs ordinary, with white hair, that on inner side of tarsi yellowish. Abdomen shining, strongly punctured; first segment with a triangular patch of dense white hair on each side; second to fourth segments with marginal hair-bands, broad and white at sides, linear and more or less yellowish in the middle; bases of segments also

with pale hair; scale-like hair peppered over the last two segments fulvous.

Hab. Cooktown, Queensland, Oct. 1902 (*Gilbert Turner*).
British Museum.

Megachile oculipes, sp. n.

♂.—Length about 10 mm.

Black, parallel-sided, rather narrow; hair of head and thorax white except on the broad vertex, where it is fulvous; head broad; eyes green, stained with blood-red; abundant hair of face greyish white; lower edge of clypeus with two small teeth; mandibles black, tridentate; vertex and front coarsely granular or rugoso-punctate; scape short, entirely bright ferruginous; flagellum long and slender, black above, ferruginous beneath except the last three joints; mesothorax and scutellum densely rugoso-punctate; little tufts of white hair on tubercles and posterior angles of mesothorax, but not forming conspicuous spots; hair of cheeks beneath abundant and pure white; tegulae brown. Wings hyaline; a fuscous streak in marginal cell. Anterior coxae apparently spined (the insect is carded, and they are hard to see); anterior femora red in front and behind, with much white hair; their tibiae entirely bright red; their tarsi clear red, basally with long reddish (the first two or three black) hairs behind, and beyond that with a very large oval lobe, which is white, with a grey centre, simulating an eye; the grey centre is, of course, represented by a black spot beneath (compare *M. euca-lypti*); middle femora red in front; their tibiae thick, red, with a broad black band behind; their tarsi very thick, black, except the apex of the last joint, with the claws; hind legs black, the tarsi thick; hind spurs piceous. Abdomen shining, strongly punctured, base with loose white hair; hind margins of first three segments with white hair-bands; black parts (especially fourth segment) with short black hair; apical segments with silvery hair, not dense; margin of sixth segment truncate.

Known by the structure of the front legs and the end of the abdomen without red. The colour of the middle tibiae, scape, &c. readily separate it from *M. vestitor*, Ckll., *lineatipes*, Ckll., and *latipes*, Sm.

Hab. Townsville, Queensland, 12. 2. 03 (*F. P. Dodd*).
Turner Collection; British Museum.

Megachile lineatipes, sp. n.

♂.—Length about $10\frac{1}{2}$ mm.

Black, broad and robust; eyes green, converging below; face covered with long cream-coloured hair; mandibles black; vertex densely punctured, its hair partly fuscous; antennæ black; hair of thorax white below, greyish white above, long and black on disc of scutellum and largely black on mesothorax; mesothorax and scutellum very densely rugoso-punctate; tegulæ piceous. Wings dusky. Anterior coxæ with long curved black spines, which are reddish at extreme tip; anterior part of coxa yellowish, with a comb of four long ferruginous linear spines; anterior femora ferruginous (blackened behind apically), greatly flattened and expanded, sharply keeled below, and obtusely angulate toward base, the basal half of the broad inner surface with fine zebra-like black lines or stripes; their tibiæ trigonal, very short and thick, the outer surface (except the anterior apical corner very broadly) black or nearly, the inner apical margin blackened; their tarsi cream-colour, flattened and expanded, with an oval reddish lobe about the middle anteriorly, and behind with a long pale fringe, the hairs fuscous-tipped; on the inner edge (especially on the basitarsus) is a fringe of stiff black hairs; the other legs are black, with white hair, yellowish on inner side of tarsi; hind tarsi very thick; spurs black. Abdomen short, with black hair, white and loose on first segment; segments 2 to 4 with narrow white hair-bands; apical half of fifth segment in middle, and sixth above, except apically, clothed with pale fulvous hair; sixth with two very strong teeth or spines, wide apart; no ventral spine.

Readily separated from *M. latipes*, Sm., by the two sharp teeth at end of abdomen. It is really much closer to *M. chrysopyga*, but has the anterior tarsal lobe paler and much more reduced than in that species. It is even nearer to *M. phenacopyga*, but distinct by the anterior legs.

Hab. Kuranda, Cairns, Queensland, Jan. 1902 (*Turner*). British Museum.

The specimen is also marked E, which may refer to the collector.

Megachile sericeicauda, sp. n.

♂.—Length $9-10\frac{1}{2}$ mm.

Black, without any red at apex of abdomen; eyes doubtless

red in life, in the dry state reddish grey; facial quadrangle much longer than broad, little narrowed below; face densely covered with fulvous hair; mandibles black; labial palpi with first joint robust and dark, the others pallid; cheeks broad, with much white hair below; antennæ black, flagellum long; vertex broad, with dark fuscous hair; punctures of vertex small and dense on each side of ocelli, larger and sparser (the shining surface showing) posteriorly; mesothorax densely and coarsely punctured; hair of thorax white, without any yellow tint, shining silvery on scutellum, but black or dark fuscous on anterior middle of mesothorax; tegulæ piceous. Wings strongly dusky, upper half of marginal cell fuliginous. Legs black, with white hair; anterior tarsi simple, hair on inner side of tarsi yellowish; anterior coxæ simple, very hairy; hind spurs black. Abdomen shining, with very large distinct punctures; hair short and black, loose and white at base of first segment; a dense triangular patch of pure white hair at each side of first segment (compare *M. gilbertiella*); no hair-bands; middle of sixth segment with appressed silky-white hair, and a little of the same on fifth; margin of sixth very obtusely bilobed, the actual margin of sixth (beneath) has a pair of angular projections; last ventral with a broad whitish margin.

Hab. Mackay, Queensland (*Turner*). British Museum. The type is marked 10 *a*, and was taken in Sept. 1900. Others were taken in October 1901.

Easily known from *M. austeni*, Ckll., by the large distinct punctures of the abdomen.

The following table separates several males in which the apex of the abdomen is not red (although in *lineatipes* there is a pale fulvous hair-patch):—

Anterior tarsi greatly modified	1.
Anterior tarsi simple; sixth abdominal segment not spined	4.
1. Middle tibiæ bright red in front; scape bright red. Middle tibiæ dark	<i>oculipes</i> , Ckll.
2. Sixth abdominal segment with a median sharp point	2.
Sixth segment without such a point	<i>vestitor</i> , Ckll.
3. Sixth segment with two sharp teeth	3.
Sixth segment without such teeth	<i>lineatipes</i> , Ckll.
4. Abdomen with large distinct punctures	<i>latipes</i> , Sm.
Abdomen with small indistinct punctures	<i>sericeicauda</i> , Ckll.
	<i>austeni</i> , Ckll.

Trigona longipes, Smith.

I have a Brazilian specimen from F. Smith's collection. I believe there is no doubt that Smith's *longipes* of 1854 and 1863 are the same insect; hence the name *longicrus*, Dalla Torre, falls as a synonym.

Trigona laboriosa, Smith.

A specimen from Smith's collection appears to me to be identical with *T. fulviventris*, Guér., as represented by Baker at Belize. *T. laboriosa* was described from Panama.

Trigona guianæ, sp. n.

Worker.—Length about 7 mm.; anterior wing about 7 mm.

Head and thorax black; abdomen exceedingly shiny, the dorsal surface very dark brown, without hair; legs black, the last tarsal joint reddish, that of hind legs clear ferruginous. Head large, face broad; sides of face greyish-white pruinose; no pale markings on head or thorax; mandibles dark reddish, strongly dentate; cheeks (except below, where they are shining) densely covered with grey tomentum; clypeus and front shining; antennæ black or almost above, pale ferruginous beneath, including scape; mesothorax and scutellum shining; thorax with scanty short whitish tomentum, more abundant at sides of metathorax, but vertex, mesothorax, and scutellum with erect black hair; tegulæ piceous, faintly reddish. Wings uniformly yellowish dusky, not dark, stigma and nervures pale honey-colour. Knees slightly reddish; legs with black hair; hind tibiæ slender at base, gradually widening to the broadly truncate end.

Hab. Guiana. British Museum, 96. 238.

T. mombuca, Sm., has the same grey cheeks, but the antennæ are dark, the posterior margin of the hind tibia is more convex, and the third and fourth abdominal segments are mainly ferruginous. *T. fuscipennis*, Friese, is also allied, but differs by the dark antennæ and the dark basal part of wings. I do not know how to separate *fuscipennis* from *amalthea*, Oliv.; at least an *amalthea* from Smith's collection seems to be the same as *fuscipennis* from Venezuela (*Kummerow*), received from the Berlin Museum.



Cockerell, Theodore D. A. 1910. "Descriptions and records of bees. XXXIII." *The Annals and magazine of natural history; zoology, botany, and geology* 6, 356–366.

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