



## Annals and Magazine of Natural History: Series 7

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tnah13>

### XXXIII.—Descriptions and Records of Bees.—III

T. D. A. Cockerell<sup>a</sup>

<sup>a</sup> University of Colorado

Published online: 01 Dec 2009.

To cite this article: T. D. A. Cockerell (1905) XXXIII.—Descriptions and Records of Bees.—III, *Annals and Magazine of Natural History: Series 7*, 16:93, 301-308, DOI: [10.1080/03745480509442866](https://doi.org/10.1080/03745480509442866)

To link to this article: <http://dx.doi.org/10.1080/03745480509442866>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan,

sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Abdomen small, fusiform, very shiny, bright ferruginous, the apical third strongly infuscated; apex broadly rounded; no hair-bands; suture between first and second segments a little depressed.

*Hab.* Queensland: no. 94.61; "Ridg. 11.91; 710."

Close to *H. sphecodoides*, Smith, but the colour of the head and legs is different, and I do not feel justified in treating it as the male of that insect, hitherto known only in the female.

*Halictus vitripennis*, Smith.

A ♀ from Queensland (Ridg. 11.93; 711) agrees with Smith's too brief description and my notes on the type; but there is just a possibility that actual comparison would reveal differences.

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

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

PHENACOLLETES, gen. nov.

Tongue and paraglossæ as in *Colletes*; labial palpi small, 4-jointed, the joints subequal, but the two middle ones the shortest; distance between paraglossæ and labial palpi greater than length of former; blade of maxilla about  $2\frac{1}{2}$  times as long as wide, rounded at end; maxillary palpi very small, not half the length of maxilla-blade, the six joints stout, the first not easily seen, the second and third cylindrical, the fourth and fifth short, the sixth narrow and pointed; pubescence short, very finely plumose; abdomen free from hair, except a very fine pruinosity, and shaped like that of a *Tachytes* or *Bembecid*; stigma small and narrow (about as in *Leioproctus* as figured by Smith); marginal cell lanceolate, tapering apically; three submarginal cells—the first, on cubital nervure, at least as long as the other two together; the second large, almost square, receiving the first recurrent nervure at the end of its first third; the third about twice as long as the second below, but only as long above, its outer margin regularly curved; the second recurrent nervure enters it a little before the beginning of its last fourth, and is practically straight, with only a slight irregular curvature; basal nervure falling a very little basal of transverso-medial.

*Phenacolletes minus*, sp. n.

♂.—Length about 14 mm.; of anterior wing just over 10.

Black, with the large scutellum red varying to black; head large, circular seen from in front; cheeks broad; vertex convex; ocelli well developed, in a low triangle; mandibles dark reddish, bidentate, but the inner tooth quite small; *labrum with a shining elevated C placed with the back upwards*, rather suggestive of a hog's snout; *face broad, with the eyes practically parallel* (slightly diverging below); the whole face, up to the ocelli, covered with dense snow-white pubescence, as also are the cheeks and occiput; interocellar region with a tuft of white hair; vertex and mesothorax exposed, finely granular; *antennæ short*, entirely dark except that the apical margin of the scape is reddish, or the scape may be entirely reddish; *flagellum thick, the middle joints broader than long, and strictly cylindrical*; tubercles more or less red; pleura, postscutellum, and metathorax with much white hair; metathorax with a thick white fringe on each side; *its basal enclosure large, shining, and hairless, with a deep basal pit*, and bounded by a strong sulcus; mesothorax with three impressed lines in front, and the parapsidal lines fairly distinct; tegulae yellowish ferruginous. Wings variably dusky, inclined to be yellowish; stigma and nervures dark brown, or the stigma practically black. Legs normal, dark reddish, with fine white pruinosity, only the anterior femora having behind a fringe of white hair; *hind knee-plates well developed*; hind tibiae rather slender and nearly cylindrical, *the hind legs being quite long*; *anterior tibial spurs with a fine comb*, hind spurs simple; abdomen rather shiny, with very minute punctures, *quite without pubescence except a fine white pruinosity*, especially noticeable at sides; *sutures not depressed*; *seventh dorsal segment with a broad flattened pygidial area*; *from the apex projects a small rounded plate*. The characters italicized are likely to be of generic significance, in addition to those given in the generic diagnosis.

*Hab.* Turtle Bay, 91-82; three specimens, numbered 1421, 1423, and 1424. Turtle Bay is on the coast of Australia; I believe off the N.W. coast. The specimens were collected by Commander J. J. Walker, R.N., on the 'Penguin' Expedition.

This remarkable insect caused me much perplexity. The general appearance and structure of the abdomen resemble those of some wasp allied to *Tachytes*; the legs also are very wasp-like. On the other hand, the venation is quite that of a bee, and the mouth-parts are of the Colletid type, which,

however, is nearly the same as that of *Tachytes* and its allies. With a lens, I could not detect any plumosity in the pubescence, which is very short and like that of a wasp; but the compound microscope shows that all the hairs are minutely plumose, and this settles the reference of the genus to the bees. It is by all means the most wasp-like bee I know, and I think it affords very strong evidence in favour of the origin of the Colletid bees from a wasp of the *Tachytes*-group. It appears to follow that the bees with pointed tongues have had a quite different origin, as I have formerly suggested.

*Lithurgus atratiformis*, Ckll.

♀.—A specimen marked 92.16 and 304 shows that when quite fresh the second to fifth segments of the abdomen have extremely narrow but conspicuous white hair-fringes. Another, with the face narrower than the type, but clearly the same species, is from Queensland (*Gilbert Turner*), labelled also 304.

*Bombus terrestris* (L.).

New Zealand (*E. Saunders*); one worker, in British Museum.

*Bombus terrestris*, var. *audax* (Harris).

New Zealand (*E. Saunders*); one female, in British Museum.

*Bombus hortorum*, var. *fidens* (Harris).

New Zealand (*E. Saunders*); three females and a worker, in British Museum. There is also a female labelled "Queensland (*E. Saunders*)."

*Bombus hortorum*, var.

Similar to var. *fidens*, but prothorax, scutellum, and penultimate abdominal segment more or less distinctly reddish yellow. I have not found a varietal name for this form.

New Zealand (*E. Saunders*); two females in British Museum.

Of course, all these *Bombi* are the progeny of introduced individuals. I have credited these and other specimens to Mr. E. Saunders, following the labels, but I gather that

Mr. Saunders did not collect them, but only presented them to the Museum \*.

*Nomia tenuihirta*, Ckll.

Both sexes were taken in Queensland by Gilbert Turner. The ♀ is labelled "Ridg. 4.92" and 869. It differs from the male by its more robust form, but is in general similar. Both spurs of the hind tibia are strongly curved at the end.

*Nomia Gilberti*, sp. n.

*Hab.* Queensland (Gilbert Turner); no. 869, and labelled "Ridg. 3.92."

♀.—Length about  $8\frac{1}{2}$  mm.

Black, with white or yellowish-white pubescence, and scattered erect black hairs on vertex and occiput; abdomen in a bright light appearing very dark reddish, and having broad but rather thin white hair-bands on the broadly depressed apical margins of segments 2 to 4, and a patch on each side of the first segment; fringe of fifth segment dark grey or blackish; anterior spur of hind tibia strongly curved, posterior spur minutely pectinate; legs black, even to the tarsi, hair on inner side of tarsi black. Mandibles bidentate, largely dark reddish; face broad, with coarse yellowish-white pubescence; median raised line extending nearly to apex of clypeus, the latter shining, and curiously longitudinally ridged in an irregular way; antennæ entirely dark; vertex and mesothorax granulo-punctate. Wings faintly dusky, the apex conspicuously smoky; third submarginal cell much longer than first; second much higher than broad, but almost or quite parallel-sided, receiving the first recurrent nervure near its end.

Superficially, this looks exactly like *N. tenuihirta*, and from the fact that the collector gave both the same number it is probable that he regarded them as the same. They are, however, clearly distinct, and may be separated as follows:—

\* I learn from Mr. Chas. O. Waterhouse that all specimens in the Australian Collection labelled 92.44, 91.82, 91.155, and 90.126 were collected by J. J. Walker, on the 'Penguin' Expedition; all labelled 94.61 and 93.49, from Queensland, were collected by Gilbert Turner; all labelled 93.198 by H. W. J. Turner; all labelled 85.103 by F. DuBoulay; all labelled 85.42 by W. R. Salter; and 1903.356 by P. F. Dodd.

*N. Gilberti*, ♀.

Basal enclosure of metathorax nearly or quite as broad (antero-posteriorly) at sides as the width of the second submarginal cell; shining, with irregular but very distinct cross-ridges.

Tegulae piceous, with a whitish spot on outer margin.

Raised facial line extending far down clypeus.

Stigma honey-colour.

Wings more hyaline, with the apex obviously darkened.

*N. tenuihirta*, ♀.

Basal enclosure of metathorax almost linear at sides; dull, granular, without distinct cross-ridges.

Tegulae pale testaceous, fuscous basally, and with a whitish patch posteriorly.

Raised facial line hardly invading clypeus.

Stigma dark reddish-piceous.

Wings more dusky, the apex uniform with the rest.

In *N. Gilberti* the triangular area forming the lower extension of the metathoracic enclosure is perfectly smooth and shining, and cut off from the ridged area by a transverse keel; in *N. tenuihirta* this part is minutely granular like the rest, and not conspicuously cut off from it.

*Nomia semiaurea*, sp. n.

♀.—Length about 10 mm.

Rather broad, the abdomen top-shaped; black, with sometimes a green tint on middle of first abdominal segment; pubescence entirely fulvous or golden, except a very few scattered dark hairs on mesothorax. Face not very broad; inner orbital margins strongly concave above; clypeus densely covered with elongate punctures (strawberry-surface); face with fulvous tomentum; supraclypeal area convex; longitudinal line very fine, extending from middle ocellus to beyond middle of clypeus; mandibles bidentate, more or less stained with dark reddish; flagellum dull dark brown, delicately pruinose, light at tip; vertex and front with very minute punctures; mesothorax only sparingly hairy, the pubescence quite inconspicuous, its surface minutely roughened but rather shining, with the punctures large and deep, close at the sides, larger and more separated in the middle; tubercles densely covered with fulvous tomentum, as also the postscutellum (which may, however, be denuded); sides of metathorax with long pale fulvous hair; posterior face very well-defined, shining, with strong large punctures, and only covered with a very fine tomentum; upper part bare and strongly and closely punctured, but the true enclosure is reduced almost to nothing; tegulae rather large, orange-fulvous. Wings dusky, especially the apical part, stigma and nervures brown; second submarginal cell

small and narrow, receiving the first recurrent nervure a little before its end; third with an appendicular apical point. Tarsi and knees red, and tibiae largely so; basal joint of hind tarsi very broad and flat; abdomen shining, but strongly and quite closely punctured, hind margins of segments 1 to 4 broadly depressed and fulvous, those of segments 2 to 4 with bands of golden-orange appressed hair; fifth segment with a redder band.

It is not altogether impossible that this may be the ♀ of *N. rufocognita*, Ckll., but in that species (♂) the middle of the mesothorax is densely punctured all over, and the first abdominal segment is much more coarsely and closely punctured. The enclosure of the metathorax in *rufocognita*, though a mere line laterally, is divided by little ridges, which makes it look beaded; this is not at all the case in *semiaurca*.

*Hab.* Queensland (Gilbert Turner); two, both labelled Ridg. 491 and 617.

From the description, this must be near to *Nomia cincla*, Smith, discovered by Wallace on Great Key Island.

*Nomia halictella*, sp. n.

♀.—Length about  $8\frac{1}{2}$  mm.

Looking very much like a small *Halictus calceatus*; the shining, fulvous-banded abdomen broad in the middle and narrowing basally, so that in some positions it looks subclavate. Black, with rather light ochreous pubescence; head broad, eyes strongly converging below; mandibles dark reddish in the middle; antennæ dark, the flagellum red at apex; median raised line extending downwards only to level of antennæ; front below ocelli delicately striatulate; mesothorax dull, very minutely and closely punctured, appearing quite hairy when seen from the side, but not so when seen from above, except at the extreme lateral margins, and at the scutello-mesothoracic suture, which is full of ochreous tomentum; upper border of prothorax, tubercles, and postscutellum covered with ochreous tomentum; basal area of metathorax very narrow (short), with numerous very fine cross-ridges; posterior face of metathorax dull and granular, bounded laterally by a ridge only below; tegulae shining rufous, fuscous basally. Wings strongly dusky; stigma and nervures light dull brown, stigma large; marginal cell very blunt and broadly rounded at apex; first submarginal cell longer than third; second quite large, somewhat broader than high, receiving the first recurrent

nervure near the beginning of its last third. Tarsi dark reddish; hair on inner side of basal joint of hind tarsi (which is rather broad, with the outer apical corner produced to an acute angle) shining ochreous; second joint of hind tarsi triangular, the apex produced like that of first joint. Abdomen shining, with a rather sericeous surface, the punctures obscure; hind margins of segments rufescent, those of third and fourth with broad, dense, entire fulvo-ochraceous hair-bands; on the first and second these bands only appear laterally, or the band may be nearly complete on the second; fringe on fifth segment redder; ventral segments fringed with very long hair.

*Hab.* Queensland, four specimens (*Gilbert Turner*). They all bear the collector's number 313.

*Nomia halictella*, var. *triangularis*, nov.

♀.—A little larger (expanse of wings 18 mm.). Stigma dark reddish; basal enclosure of metathorax much larger in the middle, being produced behind to form a large triangle, which is covered with longitudinal ridges, which are not so fine as those of the type.

This insect is a very puzzling one: the enclosure of metathorax is so different from that of typical *halictella*, that one would take it for a distinct species; but in all other respects the insect is essentially *halictella*.

*Hab.* Queensland (*Gilbert Turner*), marked 311 IIy.

*Halictus urbanus baudinensis*, subsp. n.

♀.—Length about 5 mm. Similar to *urbanus*, with the same peacock-green mesothorax; but tibiae and tarsi, and apical third or fourth of femora, all bright ferruginous; hind spur with two long spines; hind femora somewhat deformed, appearing as though bent near the middle; stigma very dark reddish brown; first r. n. meeting second t.-c.; tegulae shining fulvous; abdomen beyond the first segment delicately white-pruinose.

*Hab.* Baudin I., N.W. Australia (*J. J. Walker*, 675). Collected on the 'Penguin' Expedition.

This is very likely a distinct species, but it is very close to *H. urbanus*, and may be treated as a subspecies until more material has been collected. It has the outer nervures weakened, as in *Chloralictus*.

*Paracolletes obscurus* (Smith).

♀.—W. Australia (*C. M. Worsfold*). The locality is an

unexpected one, but the insect runs to *obscurus* in the table I made from the types, and agrees sufficiently with Smith's description. The abdomen, however, has a narrow white marginal hair-band on segments 2 to 4. The long black hair of the head and thorax above is very strongly plumose.

University of Colorado,  
Boulder, Colorado, U.S.A.,  
May 23, 1905.

---

XXXIV.—*New Neotropical Chiropterus, Sciurus, Neacomys, Coendou, Proechimys, and Marmosa.* By OLDFIELD THOMAS.

*Chiropterus auritus guianæ*, subsp. n.

Ends of wings broadly white for more than an inch at their tips, both the terminal phalanges of the middle finger and the membrane itself white, contrasting markedly with the dark colour of the rest of the membrane; the edge of the membrane between the fourth and fifth digits also white, and a slight trace of a whitish edging to the membrane leading to the foot. Base of thumb almost without hairs. Fur of body and forearms not extending on to the membranes, which are practically naked throughout.

Other characters as described by Peters, Tomes, and Dobson.

Forearm of type 82 mm.

*Hab.* Venezuela and Guiana. Type from La Vuelta, Lower Orinoco, Venezuelan Guiana.

*Type.* Adult male. B.M. no. 4. 5. 7. 20. Collected 24th April, 1903, by Mr. S. M. Klages.

*Chiropterus auritus australis*, subsp. n.

White tipping to wings much reduced as compared with *C. a. guianæ*; the terminal phalanx of the third digit only whitened, and the membrane only lighter, not white, for about half an inch at the tip; no whitish line extending along the hinder edge of the wing-membrane beyond the end of the fourth digit. Base of thumb with a distinct patch of woolly fur on the metacarpus. Fur of body extending on to the wing-membrane behind the elbows below, and on the interfemoral membrane above behind the thighs and knees.

Forearm of type 83 mm.