

1-1-1909

On some undescribed Indian Bees (Tetralonia, Megachile and Halictus) (Hym.)

Peter Cameron

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Cameron, Peter, "On some undescribed Indian Bees (Tetralonia, Megachile and Halictus) (Hym.)" (1909).
Bu. Paper 207.

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DESCRIPTION OF PUBLICATION

Cameron, P. 1909. On some undescribed Indian bees (Tetralonia, Megachile, and Halictus) D. ent. Zs. Berlin (47-53).

REFERENCE SOURCE OF THE REQUESTED PUBLICATION, IF AVAILABLE

Zool Rec 46(12): 26 (#442)

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PART 1—WORK ORDER

bekannte *H. annulipes* Mor. von Turkestan stehen, der aber anders gefärbte Beine und einen fast ovalen Kopf hat. Wegen des gerandeten Mittelfeldes am Mittelsegment (Metathorax bei Morawitz) gehört diese Art auch in die Gruppe des *Sneathmanellus*.

Ich fing 4 Exemplare dieser zierlichen Art in der Nähe von Triest beim Aufstieg zum Mte. Spaccato. Sie ist Freund A. Ducke in Pará, der zur Erforschung der Apidenfauna von Triest viele wertvolle Beiträge lieferte, zu Ehren benannt worden.

Halictus Perezi Alf.

♂ 7 mm lang. Dem Weibchen, welches in „Ztschr. f. Hym. u. Dipt.“, 1907, p. 203, beschrieben wurde, ähnlich. Schwarz, Fühler kurz, von Thoraxlänge, die Geißel unterseits vom zweiten Gliede an rotbraun. Gesicht dicht weisfilzig. Clypeus wenig vorgezogen, vorn weißgelb gefärbt. Thorax weißgrau behaart. Mittelfeld des Mittelsegments wie beim ♀ fein und gerade längsgerieft. Area interna hinten abgerundet, gekörnt. Erster Hinterleibsring ziemlich dicht und gleichmäßig, am Endrande etwas zerstreuter, vierter und fünfter viel feiner und zerstreuter punktiert, zweiter, dritter und vierter am Grunde seitlich weiß gefilzt. Alle Schienen am Grunde und an der Spitze, die vorderen auch innen, gelblich, alle Tarsen gelb, die letzten mehr rötlich gefärbt. Endränder der Bauchringe rötlichbraun, Flügelmal dunkelbraun gefärbt.

Von *Halictus sexnotatus* Nyl. läßt sich dieses ♂ durch die gelblich gefärbten Schienen und Tarsen (bei *H. sexnotatus* schwarz) und den punktierten Hinterleib (bei *H. sexnotatus* fast punktlos) und von *H. fallax* Mor. durch das dunkelbraune Flügelmal (bei *H. fallax* hellgelb) unterscheiden.

Mir liegt 1 Exemplar aus Spanien vor.

On some undescribed Indian Bees (*Tetralonia*, *Megachile*
and *Halictus*). (Hym.)

By P. Cameron, New Mills by Stockport (England).

Tetralonia pruinosa sp. nov.

Black, the flagellum of antennae for the greater part dark rufous, the head, pleurae and base of abdomen densely covered with white, the top of thorax with dark pale fulvous pubescence, the top of abdomen densely pruinose, the sides and apical segments densely covered with glistening white hair, the ventral hair white,

tinged with fulvous. The hair on the legs white, the apical 4 joints of the tarsi pale rufo-fulvous. Wings hyaline, the nervures black. ♀.

Length 9 mm.

Ferozepore. March (Lieut. Col. C. G. Nurse).

Upper three fourths of clypeus covered with strong punctures, the lower part closely rugose, the apical border rufous, as are also the edges of the mandibles; the front and vertex smooth. Metanotal area opaque, distinctly punctured. Apices of abdominal segments narrowly testaceous; the anal rima bare, closely, finely, not very distinctly transversely striated, the sides depressed. Calcaria pale. The 2nd and 3rd abscissae of the radius are equal in length, the 1st a little shorter than them; both the recurrent nervures are received shortly, but distinctly, before the transverse cubitals.

Tetralonia punctilabis sp. nov.

Black, the pubescence white, except on the pro- and mesonotum and scutellum on which it is rufous, the base of the 1st abdominal segment covered with whitish hair; the apices of the 2nd to 4th with broad bands of white depressed pubescence; the ventral segments and base of pygidium brown; the latter becomes gradually narrowed to a blunt point at the apex where it is less than one fourth of the width of the base. Clypeus distinctly broader than long, closely rugosely punctured, the apex transverse, furrowed. Middle of labrum strongly, closely punctured and covered with rufous pubescence; the sides smooth; the upper part of the head is less strongly punctured. Thorax closely punctured, the scutellum more closely than the mesonotum; the metanotum less strongly punctured. Hair on legs white, on the inner side of the hind tibiae and tarsi it is rufous, as it is also, to a less extent, on the underside of the middle tarsi. Calcaria pale fulvous. Wings hyaline, the nervures blackish; the 1st abscissa of radius half the length of the 2nd, which is hardly one fourth longer than the 3rd. ♀.

Length 13 mm.

Ferozepore. March (Nurse).

The pygidium is more narrowed towards the apex than it is in *ovatula* Cam. from Deesa; the latter may be known by the hair on the inner side of the hind tibiae and tarsi being black, not rufo-fulvous as in the present species; it, too, has the base of the mandibles yellow.

Tetralonia

Black, the face, of mandibles, bright yellow; the pubescence on the head and segments it is much paler; broad bands of white on the wings; hyaline, the nervures of the antennae distinctly.

Length 13 mm.

Ferozepore. March.

Pygidium distinctly apical third abruptly narrowed; the sides closely punctured, the apex with long white hair; the labrum is narrow, the centre and lower edge with long white hair. Calcaria pale. The underside, covered with white hair, legs is white.

May be known from *ovatula* by the distinct bands on the apex abruptly narrowed.

Tetralonia

Black, the clypeus bright lemon-yellow; the sides of tarsi rufous; wings hyaline, the pubescence on the head, the sides of abdominal segments and the segments red underneath. The pubescence on the sides of the abdomen is long. Length 8 mm.

Ferozepore. March.

Clypeus broader than long, the apex transverse, the sides closely punctured, the apex with long white hair. Pro- and mesonotum closely punctured; the pygidium wider than the thorax, which is transverse. The pygidium when turned back, not

Tetralonia

Black, the clypeus dark cinereous, tinged with yellow.

Deutsche Entomol. Zeitschr.

Tetralonia testaceitarsis sp. nov.

Black, the face, clypeus, and a triangular mark on the base of mandibles, bright yellow, the tarsi rufo-testaceous, the pubescence on the head and thorax fulvous, on the basal 2 abdominal segments it is much paler, the 2nd and following segments with broad bands of white depressed pubescence on their apices, wings hyaline, the nervures dark fuscous, the tegulae pale testaceous, the antennae distinctly shorter than the body. ♂.

Length 13 mm.

Ferozepore. March (Nurse).

Pygidium distinctly longer than it is wide at the base, the apical third abruptly narrowed: Clypeus somewhat strongly and closely punctured, the sides and top covered with longish white hair; the labrum is more strongly and sparsely punctured, its centre and lower edges thickly covered with long pale rufous hair. Calcaria pale. The basal half of the middle femora is, on the underside, covered with a golden pile; the hair on the legs is white.

May be known from *T. punjaubensis* by the shorter antennae, by the distinct bands on the abdomen and by the pygidium having the apex abruptly narrowed.

Tetralonia erythroceras sp. nov.

Black, the clypeus, labrum and basal half of mandibles bright lemon-yellow; the flagellum of antennae and apical joints of tarsi rufous; wings hyaline, the nervures blackish; the pubescence on the head, thorax and base of abdomen white; the apices of abdominal segments with broad bands of depressed white pile, the segments red under the pubescence; the pygidium dark red. The pubescence on the legs clear white. ♂.

Length 8 mm.

Ferozepore. March (Nurse).

Clypeus broader than long, distinctly, but not very closely punctured, the apex transverse. Labrum densely covered with long white hair. Pro- and mesothorax distinctly, but not very closely punctured; the metanotal area is more strongly punctured. Pygidium wider than long, a little narrowed towards the apex which is transverse. The antennae are shorter than usual, reaching, when turned back, not much beyond the basal abdominal segment.

Tetralonia punjaubensis sp. nov.

Black, the clypeus and labrum bright yellow, the pubescence dark cinereous, tinged with fulvous on the back of thorax and

base of abdomen; that on the underside of the middle femora and base of tarsi bright rufous, the calcaria pale. Wings clear hyaline, the nervures black, the basal 2 abscissae of the cubitus paler; the 2nd and 3rd abscissae of radius equal in length, the 1st recurrent nervure almost interstitial. Clypeus almost square, the apex transverse, furrowed; the centre of labrum broadly, densely covered with fulvous pubescence. Mandibles and antennae entirely black, the latter as long as the body; their apical joints curved. Clypeus irregularly, distinctly, but not closely punctured. The 1st abdominal segment is entirely covered with dark fulvous hair, the 2nd to near the apex with shorter, paler hair; the apices of the other segments with narrowish bands of white depressed pubescence. Ventral segments densely covered with longish pale fulvous hair, which, on the apical segments, is tinged with rufous. ♂.

Length 13 mm.

Ferozepore. March (Nurse).

Tetralonia rufolineata sp. nov.

Black, the apex of the clypeus with a distinct rufous band; the head and thorax densely covered with white pubescence, that on the mesonotum tinged slightly with fulvous, the base of the abdomen covered with long white hair; the sides of the 1st segment at the apex, a broad curved band of white pubescence on the middle of the 2nd, dilated laterally, similar bands on the apex of the 3rd and 4th and on the sides of the 5th, the pubescence on the centre of the latter and on the sides of the 6th rufous; the ventral hair bands rufous in the middle, with, on the sides, the apical bands of a brighter rufous colour than the others. The hair on the legs white, except on the underside of the fore tibiae and tarsi and on the 4 anterior metatarsi, on which it is rufous. Wings hyaline, the basal nervures (including the subcostal nervure) black, the others dark rufo-testaceous; the 2nd abscissa of the radius about one fourth longer than the 3rd; both the recurrent nervures are received very shortly before the transverse cubitals. ♀.

Length 14 mm.

Ferozepore. April (Lieut. Col. Nurse).

Clypeus wider than long, closely, strongly punctured, the punctures mostly longish, running into each other; the apex depressed, clearly separated, transverse, with the sides rounded. Labrum turned inwardly, the top and centre punctured, closely covered with long fulvous pubescence. Mandibles narrowly rufous at the apex, the lower basal half fringed with long fulvous hair.

Front and vertex close as the clypeus; then ocellus. Metanotum some moderately large, opaque, impunctate; rufo-testaceous; the

Tetralonia

Black, a triangular wide below, in the middle and extending the apical 4 joints of nervures blackish, the and about one fourth nervures are received clypeus closely, strongly transverse. Labrum notal area clearly defined except down the center of mesothorax notum. Puncturation Pygidium longer than pile, closely longitudinally rounded at the end.

Length 10 mm.

Ferozepore. Ma

The antennae are on the thorax appear usual. Characteristic pygidium and the tr

Tetralonia

Both sexes of at Ferozepore in March described. It has the and the base of the abdominal segments at the radius are equal underside of the flag seen the pygidium h

Me

Black, the hat on the underside of

Front and vertex closely, but not nearly so strongly punctured as the clypeus; there is a distinct furrow below the anterior ocellus. Metanotum closely, strongly aciculated, the base with some moderately large, clearly separated punctures. Abdomen opaque, impunctate; the pygidium bare. Apical joints of tarsi rufo-testaceous; the calcaria white.

Tetralonia claripennis sp. nov.

Black, a triangular mark, the apex above, longer than it is wide below, in the middle of clypeus, commencing above the middle and extending to the apex and the labrum pale yellow, the apical 4 joints of the tarsi rufous; wings clear hyaline, the nervures blackish, the 2nd abscissa of radius as long as the 1st, and about one fourth shorter than the 3rd; both the recurrent nervures are received shortly before the transverse cubitals. Clypeus closely, strongly punctured, almost square, the apex furrowed, transverse. Labrum closely covered with long white hair. Metanotal area clearly defined, closely, somewhat strongly punctured, except down the centre and along the apex and sides. Punctuation of mesothorax weak, the sides more closely than the notum. Punctuation of abdomen close, distinct, not very strong. Pygidium longer than wide, densely covered with pale fulvous pile, closely longitudinally striated; the apex distinctly narrowed, rounded at the end. ♂.

Length 10 mm.

Ferozepore. March (Nurse).

The antennae are fully longer than the body; the pubescence on the thorax appears to be longer and not quite so dense as usual. Characteristic is the distinctly narrowed apex of the pygidium and the triangular mark on the clypeus.

Tetralonia duvancelii Lep.

Both sexes of this species have been taken by Col. Nurse at Ferozepore in March and April. The ♀ has not been described. It has the lower two-thirds of the clypeus, the labrum and the base of the mandibles yellow; the apices of the abdominal segments are also yellow. The 1st and 2nd abscissae of the radius are equal in length and shorter than the 3rd. The underside of the flagellum is dark rufous. In the only ♂ I have seen the pygidium has the apex narrowed.

Megachile obtusata sp. nov.

Black, the hair on the head, thorax and legs white, that on the underside of the metatarsus rufous, the apices of the ab-

dominal segments with narrow bands of white pubescence, the spurs white; wings hyaline, the stigma and nervures fuscous, the former paler than the latter, the 1st abscissa of the radius a little longer than the 2nd. Mandibles with 2 apical teeth, the apical longer than the other, bluntly narrowed towards the apex, they are followed by a shorter, more sharply pointed tooth, separated from them by a greater distance than the 2 anterior are from each other; their inner edge is piceous. Base of metanotal area finely rugosely punctured, the apex aciculated. Abdomen as strongly, but not so closely punctured as the thorax, there are no transverse depressions or furrows. Ventral scopa white. Base of hind metatarsus half the width of the apex of tibiae. ♀.

Length 6—7 mm.

Ferozepore. March and April (Nurse).

The puncturation on the face and clypeus is strong; it is sparser in the middle. The head is a little wider than the thorax. First abscissa of radius one third shorter than the second.

The ♂ has the antennae not quite so long as the head and thorax united; the puncturation on the abdomen becomes distinctly stronger and closer towards the apex, which is thickly covered with depressed white pubescence, and ends in 6 distinct teeth, of which the central 2 are the larger and are also more widely separated than are the others.

Comes near to *M. punjaubensis* described above; the latter may be known from it by the 1st abscissa of radius being only about half the length of the 2nd, while in *obtusata* it is distinctly more than the half, the form of the mandibles is different; in *punjaubensis* they are more distinctly tridentate and the apical teeth are broader, blunter and the apical does not project so much beyond the subapical; in *obtusata* it is twice its length and it is also much more sharply pointed, not so bluntly rounded as in *punjaubensis*.

Halictus indicus sp. nov.

Black, the basal 3 abdominal segments red; wings hyaline, the stigma testaceous, the nervures paler, the 2nd and 3rd abscissae of the radius equal in length, the 1st recurrent nervure is received at a short distance from the transverse cubital, the 2nd at a greater distance; tegulae dark piceous. Metanotal area irregularly longitudinally reticulated on the basal half. Pubescence white, inclining to fulvous on the underside of the tarsi. Calcaria testaceous. ♀.

Length 6—7 mm.

Simla. June and September (Nurse).

Apex of clypeus projecting; the clypeus as the face. Flagellum apex. Front and notum still more than the latter. Rima dark red, base

May be known by the 3rd abdominal segment more widely separated. Nurse has the 3rd shorter than the 2nd to the apex and closely punctured distinctly defined, towards the apex.

Beobachtung und Verbreitung

(Nachtrag zu Dr. K. nach den Reisen von P. J.)

Von

Wie viele Bienen Aufenthaltes hier Sicherheit, da sie laufenen Sommer etwa 4000 Stück verteilen, wie es

Oktober
November
Dezember
Januar
Februar
März
April
Mai
Juni

Apex of clypeus clearly depressed, transverse, the sides projecting; the clypeus is as strongly, but not so closely punctured as the face. Flagellum brownish below, especially towards the apex. Front and vertex closely and finely punctured; the mesonotum still more strongly punctured, the scutellum less strongly than the latter. Apex of metanotum smooth and shining. Anal rima dark red, becoming gradually widened towards the apex.

May be known from *H. latisignatus* Cam. and *H. deesanus* Cam. by the 3rd abdominal segment being red and by the much stronger, more widely separated striae on the metanotal area. *H. rubescens* Nurse has the 3rd abdominal segment red; it is a stouter species, has the wing nervures paler, the 3rd abscissa of radius distinctly shorter than the 2nd; the striae on the metanotal area extend to the apex and the rest of the metanotum is opaque, and finely closely punctured or finely rugose rather; the anal rima is more distinctly defined, narrow at the base, becoming gradually widened towards the apex.

Beobachtungen über Blumenbesuch, Biologie, Verbreitung usw. der Bienen von Mendoza. (Hym.)
(Nachtrag zu Dr. H. Friese: Die *Apidae* (Blumenwespen) von Argentina nach den Reisenergebnissen der Herren A. C. Jensen-Haarup und P. Jörgensen in den Jahren 1904—1907.)

Von P. Jörgensen, Sønderby (Dänemark).

Teil I.

Wie viele Bienen ich während des ersten Jahres meines Aufenthaltes hier in Mendoza gefangen habe, weifs ich nicht mit Sicherheit, da ich sie nicht gezählt habe. Während des verlaufenen Sommers (Oktober 1907 bis Juni 1908) habe ich dagegen etwa 4000 Stück erbeutet, die sich auf die verschiedenen Monate verteilen, wie es die folgende Tabelle zeigt:

Oktober 1907.	50	Bienen
November "	400	"
Dezember "	2000	"
Januar 1908.	650	"
Februar "	200	"
März "	250	"
April "	350	"
Mai "	70	"
Juni "	30	"