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On a new subgenus *Orientocoelioxys* and a new species of genus *Coelioxys* LATR. from India

(Insecta, Hymenoptera, Apoidea: Megachilidae)

With 5 Figures

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Abstract. A new subgenus *Orientocoelioxys* has been proposed (type-species: *Coelioxys (Orientocoelioxys) quadrifasciatus* sp. n.). Certain comments on a few existing subgeneric categorisations of Indian species of genus *Coelioxys* follow the description of the new subgenus and of type-species. This new subgenus has been observed quite distinct with regard to its Ethiopian and American counterparts. *C. angulatus* SMITH has also been proposed to be categorised under *Orientocoelioxys*.

MICHENER (1965, p. 212) was the first to subdivide the genus *Coelioxys* LATREILLE under two subgenera, namely *Liothyrapis* COCKERELL for the species with bare eyes and *Coelioxys* 's. str.' for the species with hairy eyes. However, he further insisted upon the need for more vigorous subgeneric groupings, keeping in view the insufficiency of the character keyed for the two subgenera.

PASTEELS (1968) while revising Ethiopian *Coelioxys*, added one more subgenus *Hemicoelioxys* (type-species: *C. gracilis* PAST.), monotypic but a quite distinct subgenus with the character of posteriorly unproduced-rounded axillae. Later (1977) he upgraded it to genus *Hemicoelioxys* (type-species: *Hemicoelioxys gracillima* nom. nov. of *gracilis*).

In the meantime, MITCHELL (1973) categorised almost all the western hemisphere species of *Coelioxys* under a total of 14 groupings, among them except the *Coelioxys* 's. str.' all the subgeneric proposals were new.

The Indian species of this genus categorised so far are (PASTEELS, 1977): *Coelioxys (Coelioxita) minutus* SMITH, *Liothyrapis (Torridapis) ducalis* (SM.), *L. (T.) fuscipennis* (SM.) and *L. (Liothyrapis) apicata* (SM.). Among them *decipiens* SPINOLA (= *apicata* SM.) become type-species of subgenus *Coelioxys* 's. str.' (synonymising *Liothyrapis* with *Coelioxys* 's. str.'), (KROMBEIN et al., 1979). Two more Indian species grouped so far under *Coelioxys* 's. str.' are namely, *farinosa* SM. and *indicus* GUPTA (GUPTA, 1990).

If combine all the existing subgeneric proposals of genus *Coelioxys*, one may conclude out that all are either based up on the complete gradular groove on terga 2 and 3 or medially interrupted gradular groove on terga 2 and 3, moreover, at least one of these terga definitely with such groove. This leaves behind all those ungrouped species which do not possess any trace of the gradular groove on their either of the tergites, even at the extreme lateral margins.

Orientocoelioxys subgen. nov.

Type-species: *Coelioxys (Orientocoelioxys) quadrifasciatus* sp. n.

Diagnostic characters Eyes hairy; clypeal basal width equals with the distance to antennal sockets, apical margin transverse, mid-facial line on broadly convex, smooth and almost bare surface; subocellar area near mid-ocellus finely punctured and bare; genal margin carinate and with an obscure, narrow, slightly depressed concavity, from the middle to beneath of eye, along the occipital margin;

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axillae produced, surface with deep punctures like reticulated scutellum, axillar spine directed inwardly, lacks in any pubescence; scutellar medioposterior carina broadly rounded and quite limited, not produced beyond the metanotum.

All terga strongly convex; gradular grooves on 2nd and 3rd terga completely absent, even at the extreme lateral sides; gradular line on 2nd and 3rd terga slightly markable by the infasciate punctured line demolishing much before the lateral margins; slightly evident, quite shallow, bare, baso-lateral concavities are present on terga 4th and 5th, each followed by feebly protuberent smooth, impunctate areas; basal tergal concavity margin incarinate, however, followed by some rows of large punctures supported with pubescence (erect); tergal apical margins fasciate with ferruginous pubescence, joining laterally with broad patches of same pubescence which go on narrowing onto posterio-lateral tergal margins of hinder tergites upto 6th. In females, tergum 6th with distinctly elevated carina confined to the apical $\frac{1}{4}$ th area of disc, either sides of whom deeply concave, apex subacute and slightly exceeded by the apical margin of sternum 6th; apical margin of sternite 6th broadly rounded and with distinct subapical carina and fasceae confined to the apico-lateral margin dorsally.

Subgenus *Orientocoelioxys* can occupy a place in the key of MITCHELL (1973, p. 28) at the very initial point as follows:

0 (1) Gradular groove of terga 2 and 3 either prominently complete or interrupted medially, being clearly evident at extreme lateral margins only. (2) 1
— Gradular grooves of metasomal terga 2 and 3 absent, not at all evident even at extreme lateral sides.

***Orientocoelioxys* subgen. nov.**

Etymology This subgenus has been named after its proposal for certain Oriental species.

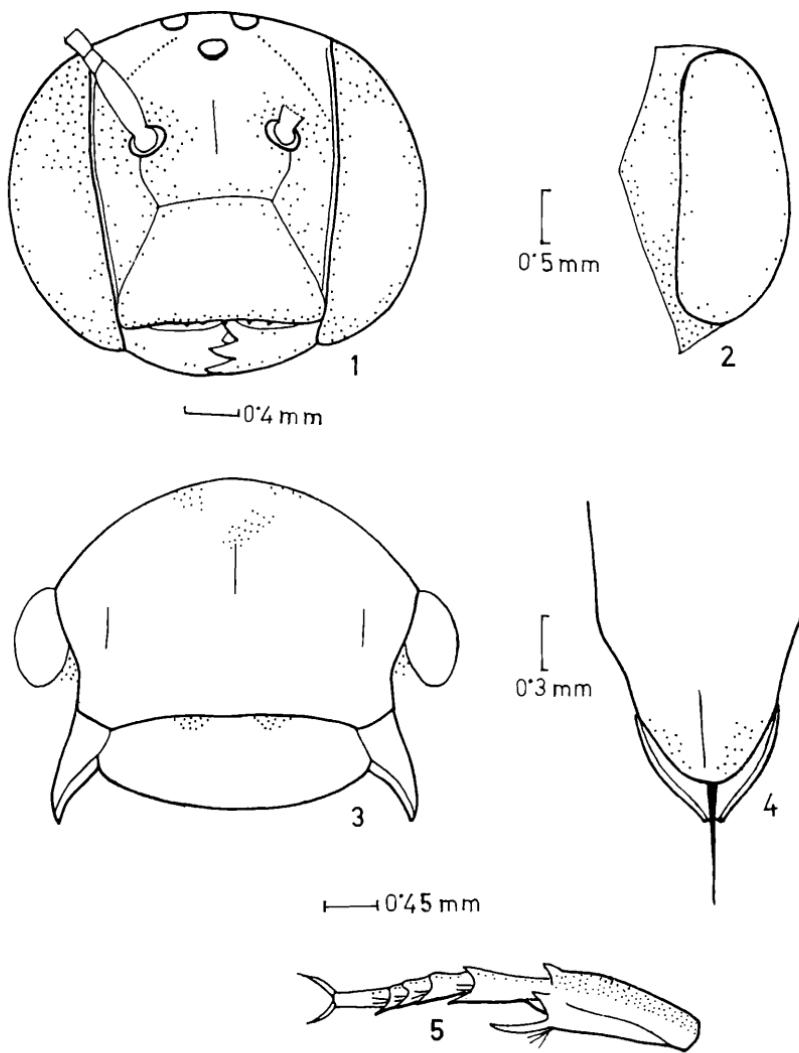
***Coelioxys* (*Orientocoelioxys*) *quadrifasciatus* sp. n. (Figs. 1-5)**

Female

Integument black shining; punctures on face fine and close, on vertex and mesosoma coarse and close and on metasoma - basally finer but dorsally on first tergum coarse, becoming sparsely on 2 and 3 and again finer and closer upto 6th tergum; pubescence snowy white all over the body except, tarsal fringe are golden; hairs erect on face, occipital region, anterior and posterior of mesosoma, basal tergal concavity and posterior to the concavity margin; rest on complete legs dorsally, lateral mesosoma, patches on dorsal mesosoma, laterally at tergites and apical marginal fasceae on terga 2 to 5 ferruginous, fasceae at margin of first tergum absent.

Head more than twice of that of median length; eyes hairy and convergent below, inner margin carinate; clypeus centrally and barely convex, apical margin transverse, fasciate with 2+1+2 fine tubercles, basal width exceeded by median length; supraclypeus broadly convex, antennal sockets dorso-laterally depressed, distance to eye is slightly lesser than to clypeus and distance to each other is exceeded by to that of mid-oecellus, apical segment of flagellum slightly shorter than scape; parocular concavity extends lateral to antennal sockets upto lateral sides of mid-oecellus, thus two tubercled bare areas below to either sides of mid-oecellus are formed and mid-facial line get elevated in profile; a few erect bristles are arranged in a row from parocular concavity to mid-oecellus; vertex margin deeply incurved, incarinate; lateral ocelli equidistant to each other and to eye margin, close to vertex margin comparatively; genal width less than half of eye width in lateral view, densely pubescent, much narrowed below than slightly above; tridentate mandibles with prominently elevated smooth ridges; labrum longer than median width, finely punctured and densely pubescent; rostrum slightly exceeding the hypostomal ridges in length while in repose.

Scutum equal in maximum width and median length, anteriorly humped, anterio-medially with a 'V'-shaped ferruginous patch, punctures arranged in striations, median line and parapsidial lines fine but distinct; pronotal lobes lateral to tegulae broadly dilated and at base fulvously pubescent, meeting laterally with the mesepisternal carina; scutellum with 2 patches of ferruginous hairs on either sides of midline at basal margin, largely bare and punctures reticulated, a ferruginous patch near the base of axillae; propodeal triangle largely bare at dorsal side, finely striated and with distinct median line up to the recurved apex; mesepisternal carina distinct anterior surface smooth and lateral densely



Figs. 1-5: *Coelioxys (Orientocoelioxys) quadrifasciatus* sp. n. 1: head, front view; 2: head, lateral view; 3: thorax, dorsal view; 4: VIth tergum and sternum, dorsal view; 5: fore leg, tibia and tarsi. (Dots on figs. indicate pubescence)

pubescent; metepisternite with erect hairs; all legs dorsally pubescent, however, inner surfaces totally smooth, unsculptured; fore coxae with short carinate emargination and tarsal segments in fore leg slightly produced anteriorly; forewing brownish hyaline fuscous at apex, both recurrent veins are almost equidistant from the base and apex of second cuboital cell.

Gradular line on terga 2 and 3 finely dotted, however, demolishes much before lateral extremities, these dotted lines absent on rest of tergites; basal tergum without fasceae at apical margin, rest with clear fine fasceae becoming much broader towards lateral sides; apical margins of terga 4th onwards appear to be slightly depressed due to the fine smooth convexities on either sides near baso-median areas; either concavities to dorsal carina with erect bristles mixed with black, above of the ferruginous hairs; sternum first with baso-median area acutely protuberant, densely hairy all along longitudinally up to apical

margin; apical margins: evaginated in first, becoming transverse in 2-3 and again evaginated in 4-5th sternum; all sterna finely striated above with coarse punctures becoming finer upto 6th; rim areas of 2 to 5th with remarkably dense pubescence becoming broader towards lateral sides; sternum 6 spatulate, apically finely notched and surface with an inverted 'V'-shaped concave area at middle.

Total length 12, median length and maximum width of face 2.0 & 4.2, and length of fore wing 8.0 (all in mm).

Male: Not known.

Material examined **Holotype:** ♀, Narainpur, Alwar, 03. IX. 1990, Coll. Rajiv K. Gupta; **paratypes** 3 ♀ ♀ from the locality of holotype on same date and 3 ♀ ♀ from Rajgarh, Alwar on 06. IX. 1990. (All presently with author himself, holotypes shall be submitted to NPC, Entomology Division, IARI, New Delhi, shortly).

Flower record *Crotalaria juncea* L.

Host record *Cressoniella (Chaetochile) anthracina* (SMITH).

Etymology: Named after the presence of 4 permanent fasceae at the apical margins of tergum 2nd to 5th.

Remarks

One more Indian species of *Coelioxys* can be distinctly grouped under subgenus *Orientocoelioxys* subgen. nov., namely, *C. angulatus* SMITH. However, *angulatus* clearly differs from *quadrifasciatus* in: clypeal convexity anterior, surface pubescent, anterior margin transverse but without any fine tubercles; axillar spines bented downwards; apical abdominal segment impunctate, broadly rounded apically, sternum 6th almost equal to the tergum 6th; notch at the apex of 6th tergum absent, margins of terga 1-5 completely fasciate, however, sternal fasceae of 2nd to 5th apical margins interrupted medially.

The two males preserved at NPC, Entomology Division, as that of *angulatus* SM., collected from Chhapra by Mackenzie are in fact males of *C. fuscipennis*, both males clearly possess gradular grooves at their 2nd and 3rd tergites and resemble the description with that of SMITH (1854) and BINGHAM (1897) by the females.

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