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THREE NEW SPECIES OF ASILIDAE (DIPTERA) FROM HIMACHAL PRADESH, INDIA

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INTRODUCTION

Through the courtesy of Dr. V. C. Kapoor, Professor of Zoology, Punjab Agricultural University, Ludhiana, I received a collection of robber-flies collected from Himachal Pradesh, India. The result of the study is reported here containing three new species under three genera. The types are deposited in the collection of the Zoological Survey of India, Calcutta.

Genus *Scylaticus* Loew

1858. *Scylaticus* Loew, *Ofvers. K. svenska Vet.-Akad. Forh.*, **14** : 346.

Type-species *Scylaticus zonatus* Loew.

The genus is allied to *Coonomyia* Londt (1992) but can be differentiated by the face with slight gibbosity, mystax confined to lower half of face, wing with m_3 widely open at margin, cubital cell never closed before wing margin, deeply incised epandrium and gonocoxite with finger-like lobe subapically.

So far only three species have been reported from India and here a new species is described.

Key to the species

1 Abdomen black.....2

Abdomen yellowish, tergites 1-6 with black bands, tergite 7 with a very small black spot .....*indicus* Bromley

2. All femora black.....3

—All femora yellowish-brown except basally pale yellow hind femur; antennal scape and pedicel yellowish-brown, first flagellomere dark brown.....*nagatomii* Joseph and Parui

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3. Scutum with a faint mediolongitudinal stripe and two large black spots laterally; antenna wholly black; male genitalia black and pale yellow with dense black piles .....*godavariensis* Joseph and Parui

—Scutum with a mediolongitudinal stripe but without lateral spots, antenna black except yellowish-brown pedicel; male genitalia yellowish-brown with pale-yellow piles .....*suranganiensis* sp. n.

Scylaticus suranganiensis n. sp.

(Figs. 1-3)

A medium sized black species with white mystax, pale yellow wing and abdominal marks white tomentose. Male length 10 mm; wing 7 mm; Female length 10 mm; wing 7 mm.

Male : Head black; face white tomentose, mystax consists of a few white bristles above epistome; frons yellowish-grey tomentose, frontoorbital and ocellar bristles white; post vertex with white piles and bristles; postocellar pile white; postgena white pilose. Antenna black except yellowish-brown pedicel, proportional length of segments 1: 0. 5 : 4. Palpi and proboscis black with white piles.

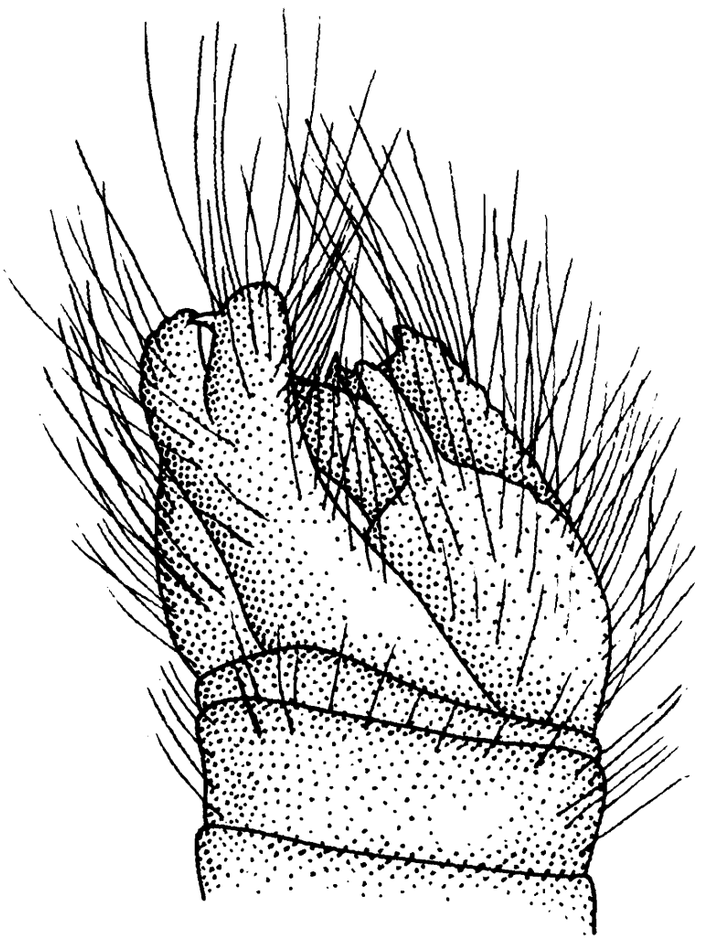
Thorax black, yellowish-grey tomentose, dense laterally; pronotum with dense white piles laterally and sparse dorsally; scutum with a mediolongitudinal dark grey stripe, vestiture white, lateral piles white; chaetotaxy: prst 4, sa 1, pa2, no distinct dorsal bristles; pleura yellowish-grey tomentose; scutellum with sparse white piles on the disc and border with a pair of pale yellow bristles and a few pale yellow piles.

Leg black except tibia at base pale yellow; fore femur bare of bristles, mid femur with 2 posterodorsal bristles, hind femur with 2 anterodorsal and 1 dorsoapical bristles; tibia yellow at base, the yellow colouration gradually increases from fore to hind tibia, bristles and piles of leg pale yellow.

Wing pale yellow.

Abdomen black; lateral border of tergites with greyish-white tomentum which spreads towards middle in the shape of triangles; tergites 1-2 with lateral pale yellow piles. Male genitalia (Figs. 1 & 2) yellowish-brown with pale-yellow piles. In paratype male the tomentum totally absent on head, thorax and abdomen.

Paratype female is similar to males with the following differences : Tomentum on lateral borders of both thorax and abdomen brownish-yellow, scutellar disc bare and the border with only a pair of bristles; femora brownish-yellow and the yellow colouration of tibia



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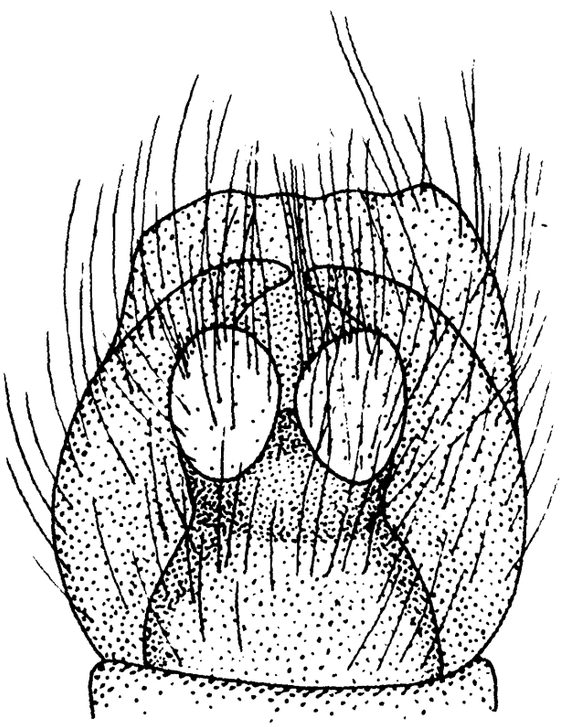

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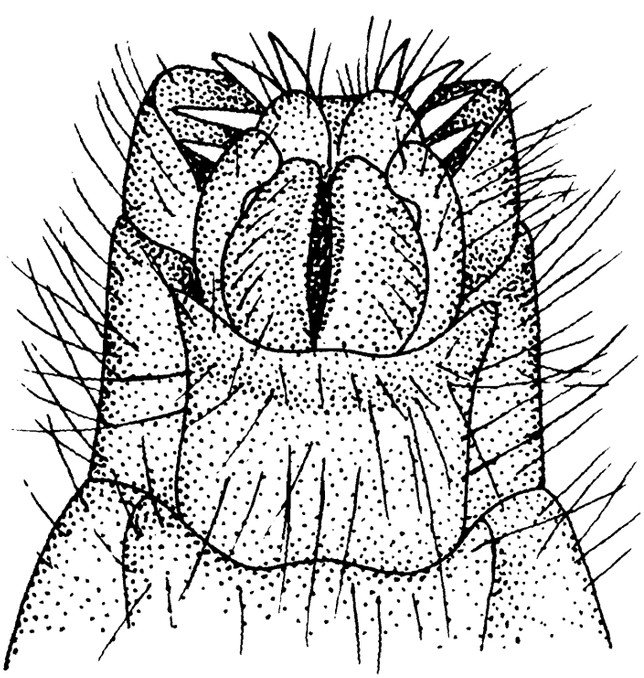

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extends much more; female acanthophorites with a circlet of 10 spines (Fig. 3).

The species resembles to *Scylaticus indicus* Bromley (1938) but differs from the latter in the white mystax, almost wholly black legs and details of the male genitalia.

Holotype (M), India Himachal Pradesh Chamba dist., Surangani, 18.vi.1984, Coll. Ashwani Kumar. Paratypes 1(M), details as in holotype; 1 (F), Chamba dist. Surangani, 5.vi.1984, Coll. V.K. Kohli.

Genus ***Neomochtherus*** Osten Sacken

1878. *Neomochtherus* Osten Sacken, *Smithson. misc. Collns* 16 : **82**, 235 (n. name for *Mochtherus* Loew 1849). Type-species : *Asilus pallipes* Meigen.

The genus is related to *Heligmoneura* Bigot and *Orophotus* Becker but can be distinguished mainly by the less developed and less complicated structures of male genitalia, long and laterally compressed female ovipositor, and absence of dorsocentral bristles before transverse suture.

So far only five species have been described from India and a new species is described here.

Key to the species

1 Leg wholly black.....2

—Leg otherwise coloured.....3

2. Epandrium invaginated at apex; antenna black except yellowish-brown pedicel .....*genitalis* n. sp.

—Epandrium entire at apex; antenna black.....*himalayensis* Joseph and Parui

3. Femur yellow with dark apex; mystax white.....*congedus* (Walker)

—Femur coloured otherwise; mystax mixed coloured.....4

4. Male genitalia black; fore tibia with reddish-yellow pile below.....*indianus* (Ricardo)

—Male genitalia otherwise coloured.....5.

5. Epandrium club-shaped; fore tibia with long black bristles ventrally....*trisignatus* (Ricardo)

—Epandrium bifid; fore tibia with long yellow bristles.....*gnavus* (van der wulp)

Neomochtherus genitalis n. sp.

(Fig. 4)

A small sized black species with greyish-white tomentum, black legs and yellowish-grey wings. Male length 9 mm, wing 6 mm.

Male Head black, white tomentose; face white tomentose; mystax consists of a few white bristles; frons white tomentose and with fine white piles; ocellarium bears fine black and white piles; post vertex with a row of white bristles which extends up to half of postocular region, the remaining region with long, dense, white piles, postgena white pilose. Antenna black except yellowish-brown pedicel, proportional length of segments; 1 0. 5 2, style longer than first flagellomere. Proboscis black and palpi yellowish-brown, both with white piles.

Thorax black, greyish-white tomentose; pronotum bears a dorsal row of white bristles; scutum with a pair of dark-brown longitudinal stripes; chaetotaxy npl 2, dc 3 (anterior one weak), sa 1, pa 2; scutellum greyish-white tomentose, disc bare, posterior border with a few weak bristles; pleura white tomentose, hypopleuron with a row of long, white bristles, metanotal slopes with pale yellow bristles. Haltere uniformly pale yellow.

Legs black, tibiae dark brown; fore femur with a row of bristles ventrally at base; mid femur with a row of bristle, anteroventrally; hind femur with a row of bristles anteroventrally and another row posteroventrally; fore tibia bears a row of bristles dorsally and a pair of exceptionally long bristles ventrally; mid tibia with four bristles dorsally; hind tibia with a row of bristles dorsally and two bristles in the middle anteroventrally.

Wing light yellowish-grey.

Abdomen black, white tomentose, segment 1 laterally with a few white piles among which with a stout bristles, segment 2 with a bunch of white piles laterally, segment 3 bare of lateral piles, segment 4 onwards dissected and mounted on slides. Male genitalia figured (Fig. 4).

Holotype (M), India Himachal Pradesh Lakarmandi, 8 km. W. of Dalhousie (Chamba), : Surangani, 12.vi.1984, coll. V. K. Kohli.

The speceis can be readily distinguished from all other Indian species-*Neomochtherus congedus* (Walker), *N. gnavus* (Wulp), *N. himalayensis* Joseph and Parui, *N. indianus* (Ricardo) and *N. trisignatus* (Ricardo) by the distinctive male genitalia especially by the presence of a series of curved spines mid dorsally on epandrium and a fan of bristles at the apex of gonocoxite.

Genus ***Trichomachimus*** Engel

1934. *Trichomachimus* Engel, *Ark. Zool.* (A) **25** (22) : 10. Type-species *Machimus pubescens* Ricardo, by original designation.

Similar to *Machimus* Loew but can be distinguished by the rather abundance of long, soft bristles and piles particularly on posterior half of scutum, on scutellum curving forward and the dense, coarse piles on most parts of abdomen. So far none has reported any structural distinction of male genitalia between these two genera.

Ten species has so far been reported from India and a new species is described here.

Key to the species

1 Tibiae and tarsi partly or wholly red.....2

— Tibiae entirely black, tarsi may be dull red.....6

2. Abdominal tergites with grey triangles laterally.....3

— Abdominal tergites without grey triangles laterally.....4

3. Abdomen with black pile except a few pale yellow on first and second tergites .....*hirsutus* (Bromley)

— Abdomen covered with pale pile including genitalia.....*excelsus* Ricardo

4. Whole of abdomen covered with pale yellow or golden pile.....5

— Tergites 2-7 covered with golden yellow pile .....*basalis* Oldroyd

5. Scutellar disc with black bristly pile and some pale yellow pile, border with a row of black bristles.....*omani* Joseph & Parui.

— Scutellar disc with long reddish pile, border with a fringe of black bristles .....*opulentus* (Walker)

6. Body and leg covered with whitish or pale yellow pile, particularly covering the whole of abdomen extending to the male genitalia.....7

— Pale yellow pile not covered all abdominal tergites; some portion of legs with black pile, rest with pale yellow.....8

7 Eighth sternite well developed and ending in a thumb-like projection dorsally which bears dense golden yellow pubescence.....*arnaudi* Joseph & Parui

— Eighth sternite slightly produced bearing a fringe of dense white pubescence.....*pubescence* (Ricardo)

8. Basal part of abdomen covered with dense white pile.....9

— Basal part of abdomen covered with pile other than white.....10

9. Pile of posterior thorax, scutellum and abdomen pale yellow or red .....*kashmirensis* Oldroyd

— Pile of posterior thorax and scutellum white; tergites 2-4 with white pile, rest with short black pile.....*rubisetosus* Oldroyd

10. Tergites 1-3 with black pile; scutellum covered with white pile.....*himachali* n. sp.

— Tergites 1-4 with golden pile; scutellum covered with black pile.....*orientalis* (Ricardo)

Trichomachimus himachali n. sp.

(Fig. 5)

A large black species with multicoloured piles and bristles and infuscated wing. Male length 19 mm; wing length 15 mm.

Male : Head black, greyish-yellow tomentose; mystax black reaching nearly to the base of antenna; frons black with concolourous bristly piles; frontoorbital and ocellar piles black; post vertex with black piles and bristles, postocular piles black; postgena dense white pilose. Antenna black with black piles and bristles, proportional length of segments 1 0.5 2.5. Palpi black with black piles; proboscis black with white piles ventrally.

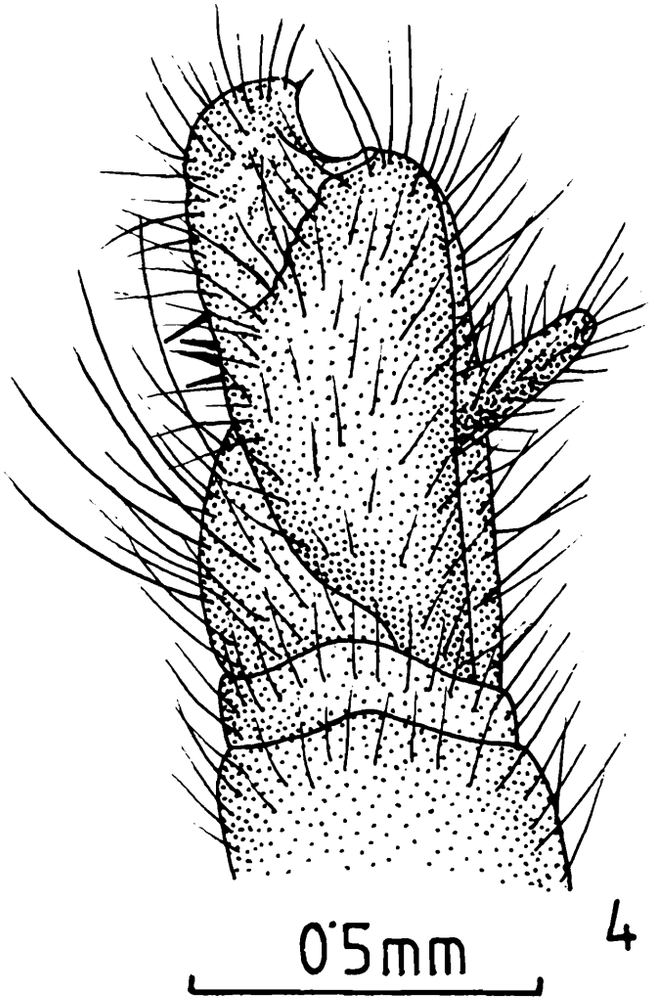
Thorax black; pronotum with black piles, a few of which yellow; humerous yellowish-brown tomentose, scutum unstriped, piles anteriorly black, moderately long, rather dense, posteriorly with dense, much longer white piles overlaping similar white piles of scutellum; chaetotaxy prst 3, sa 2, all yellow, notopleurals absent, dorsocentral not differentiable; pleura black pilose with a few white piles on propleuron and pteropleuron.

Legs black except dull red tarsi; fore coxa with dense, long white piles ventrally, remaining coxae with moderately long, black piles; fore femur with dense, long black piles which gradually reduces in number in the other femora, fore femur devoid of bristles, mid femur with 2 yellow bristles at apex, hind femur with a row of anterodorsal, anteroventral and posteroventral bristles; tibiae with yellow and black piles.

Wing light brown on basal third, rest with dark brown infuscation, the infuscation more on anterior half; squamal fringe black-brown and white.

Abdomen black, with dense long piles; terga 1-3 with black piles, the remaining terga with yellowish-red piles; piles of sternites dense, black. Genitalia (Fig. 5) black with sparse yellowish-red piles.

Holotype (M), India Himachal Pradesh Simla, 7.x.1992., coll. C. N. Meeta.



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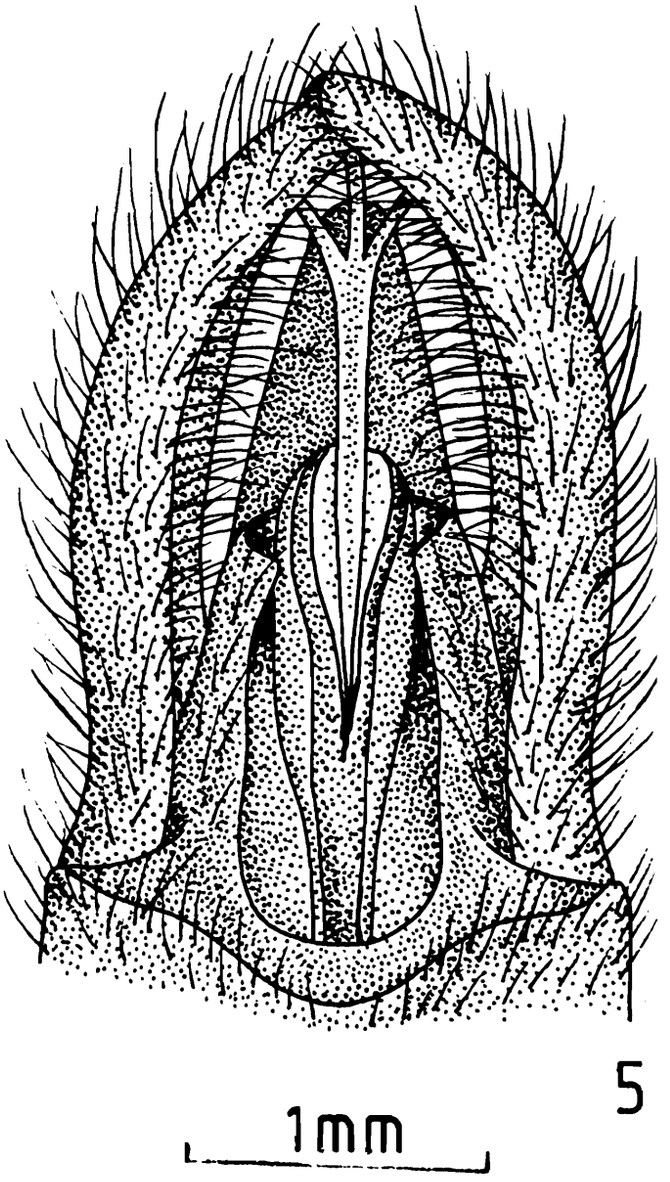

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Of the two regional species-*Trichomachimus kashmirensis* Oldroyd (1964) and *T. omani* Joseph & Parui (1994), the present species is closely similar to the former but can be distinguished by the wholly black mystax, squamal fringe black-brown and white, terga 1 3 with black piles and the detailed structures of male genitalia.

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