

DESCRIPTION OF THREE NEW SPECIES OF *TENTHREDO* LINNAEUS FROM INDIA (HYMENOPTERA: SYMPHYTA: TENTHREDINIDAE)

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Abstract

Three new species of *Tenthredo* Linnaeus viz. *T. desectus* sp. nov., *T. macropunctata* sp. nov. and *T. micropunctata* sp. nov., are described from India. These species are illustrated and compared with their allied species to facilitate their status and recognition.

Keywords

New species, *Tenthredo*, Hymenoptera, Tenthredinidae, India

Abbreviations

EL - Eye length

ICD - Inter cenchri distance

ITD - Intertegular distance

M - Median

OATS - Outer apical tibial spur

OOL - Oculo-ocellar line

Rs - Radial sector

IATS - Inner apical tibial spur

IDMO - Inter ocular distance at level of median ocellus

LID - Lower interocular distance

MB - Metabasitarsus

OCL - Oculo-occipital line

POL - Postocellar line

Introduction

Tenthredo Linnaeus is one of the largest genera of the Tenthredinidae with more than 800 species described worldwide. The genus is represented by 153 species in the Indian subcontinent. After the revisionary work by Malaise (1945) on Southeast Asian Tenthredinoidea, numerous new species were added to this genus by Muche (1982; 1983), Singh (1985), Singh *et al.* (1985a,b), Singh and Saini (1987a,b,c; 1988a,b,c,d; 1994; 1995), Saini and Bharti (1996; 1997a,b; 1999), Saini and Vasu (1998a,b), Saini *et al.* (1998a,b), Vasu and Saini (1998) from India. Several new synonymies for the species of this genus were traced out by Vasu and Chambal (1997) and, Vasu and Saini (1999), while Vasu and Chambal (1998) associated females for the first time with their male counterparts of two species. In this paper three new species from this region are described and illustrated. Terminology used for description is after Ross (1937; 1945) and Malaise (1945). The type material will be housed at the Division of Entomology, Pusa National Collections, Indian

Agricultural Research Institute, New Delhi, India.

Among the members of the subfamily Tenthredininae, species belonging to *Tenthredo* Linnaeus are recognised by a combination of characters: Forewing with straight crossvein with anal cell, hindwing with closed Rs and M cells, clypeus emarginate, and propodeum with longitudinal furrow dividing it into two equal parts.

Tenthredo desectus sp. nov.

(Figs. 1-5)

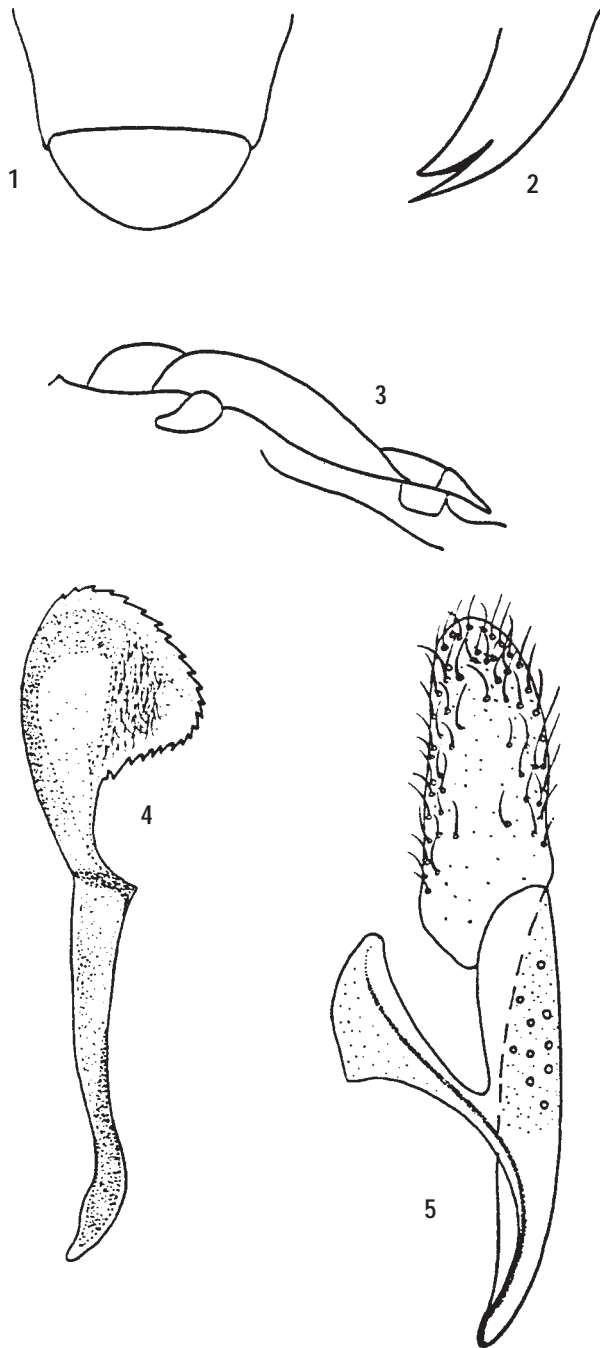
Material examined

Holotype: One male, 26.vii.1982, Kalatop, Himachal Pradesh, 2400m, Coll. V. Vasu.

Collection method

Sweep net.

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Figures 1-5. *Tenthredo desectus* sp. nov.
1. Clypeus and labrum; 2. Tarsal claw;
3. Thoracic part (lateral view); 4. Penis valve; 5. Gonoforceps.

Distribution

Kalatop in Himachal Pradesh, India.

Etymology

Species name pertains to the emarginate clypeus.

Diagnosis

Male: Colour - body black, whitish are: clypeus except basal half, labrum, narrow inner orbit, medial stripe on upper hind orbit; broad dorsal angle, tegula; posterior half of metepimeron. Coxae fuscous, trochanters pale whitish, femora reddish-yellow, front four tibiae reddish-yellow, metatibia and all tarsi ferrugineous. Wings hyaline, venation including costa, subcosta and stigma brownish to fuscous.

Structure: Length 7mm. Antenna tapering towards apex, 1.9x head width; flagellum with apical six segments compressed; scape and pedicel as 5.4, segments 3 and 4 as 4:3 Clypeus (Fig. 1) slightly emarginate with pointed lateral teeth, labrum (Fig. 1) broader than long as 3:2 with broadly rounded anterior margin, malar space 0.75x diameter of median ocellus. LID:IDMO:EL = 1:1.4:0.9; POL:OCL:OOL = 1:0.7:1.1. Frontal area almost at level of eyes; supraantennal tubercles and frontal ridges insignificant; median fovea broad, distinct in anterior part, posteriorly shallowly reaching median ocellus: postocellar furrow shallow, inter- and circum-ocellar furrow fine; lateral furrows sunken, converging posteriorly, postocellar area subconvex broader than long (3:1), head narrowing behind eyes. ICD:ITD = 1:5, mesoscutellum (Fig. 3) almost flat, its appendage ecarinate, mesepisternum obtusely round, mesosternum lacking thorns. Metabasitarsus shorter than following three joints combined (2:3), metafemur equal to metatibia, tarsal claw (Fig. 2) with subapical tooth shorter than apical one, IATS:MB:OAATS = 1:2.6:0.9. Genitalia: penis valve (Fig. 4), gonoforceps (Fig. 5).

Sculpture: Head with dense, minute, shallow punctation intermingled with network of grooves and ridges. Mesonotum with scattered shallow punctation, mesoscutellum with large, isolated pit-like punctation on posterior and lateral margins, its appendage impunctate; mesepisternum and mesosternum with scattered, fine, inconspicuous punctation. Abdomen impunctate, subshining.

Pubescence: Fuscous, 0.3x scape length.

Female: Unknown (yet to be discovered).

Discussion

This species is allied to *T. smitensis* Singh and Saini but both can be easily distinguished as discussed in Singh and Saini (1988d). It was recorded far back in 1982 but for want of more material as well as the female counterpart, it remained undescribed.

In spite of repeated surveys (about 20 times) until 1996, we were

unable to collect additional specimens of this species. As it does not agree with any of the described species, the description made here is based on the male alone. We are hopeful that it may eventually be collected from Kalatop and its surrounding areas, or from some other locality in Himachal Pradesh, Uttar Pradesh or even Jammu and Kashmir.

***Tenthredo macropunctata* sp. nov.**

(Figs. 6-12)

Material examined

Holotype: One female, 20.vi.1992, Rana, Uttar Pradesh, 1800m, Coll. V. Vasu.

Paratypes: One female, 19.v.1992, Jorhat, Assam, 1000m, Coll. M.S. Saini; One male, 19.ix.1992, Dirang, Arunachal Pradesh, 1500m, Coll. V. Vasu.

Collection method

Sweep net.

Distribution

India: Rana in Uttar Pradesh; Jorhat in Assam; and Dirang in Arunachal Pradesh.

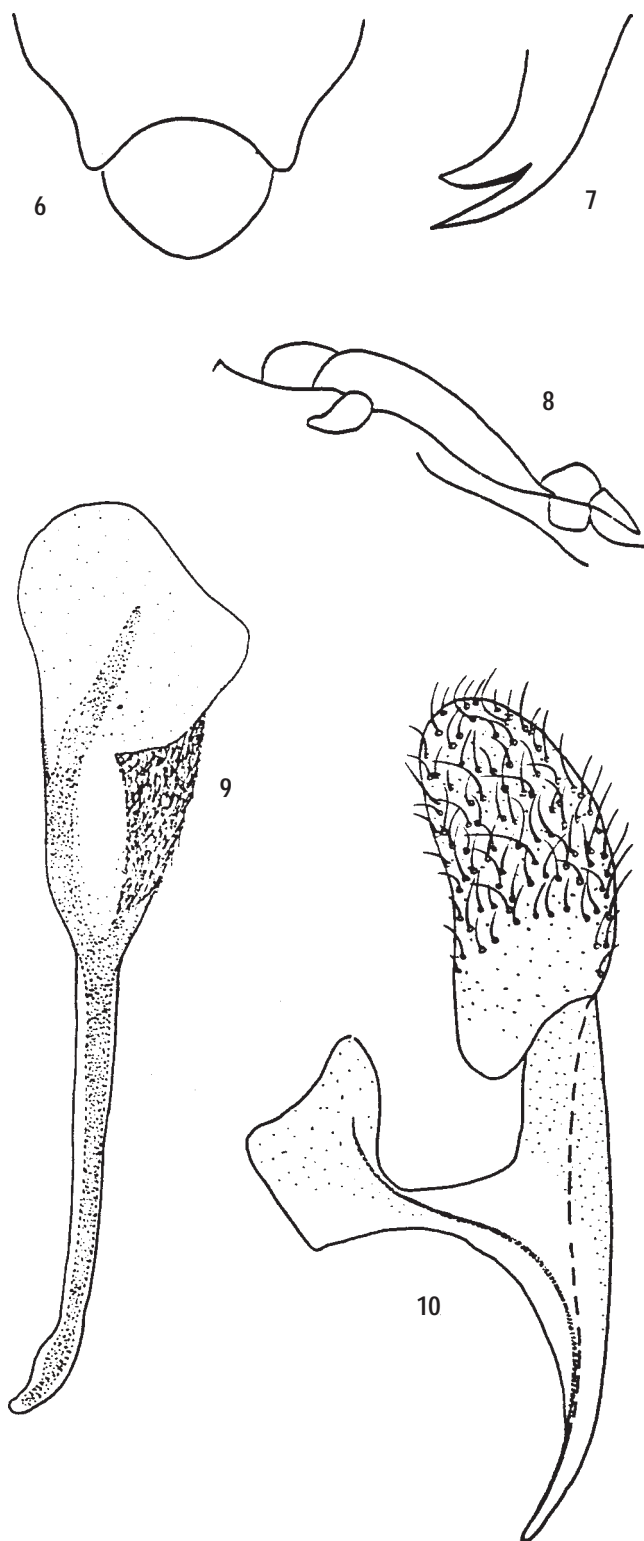
Etymology

Species name refers to the large-sized punctation of lower half of mesopleura.

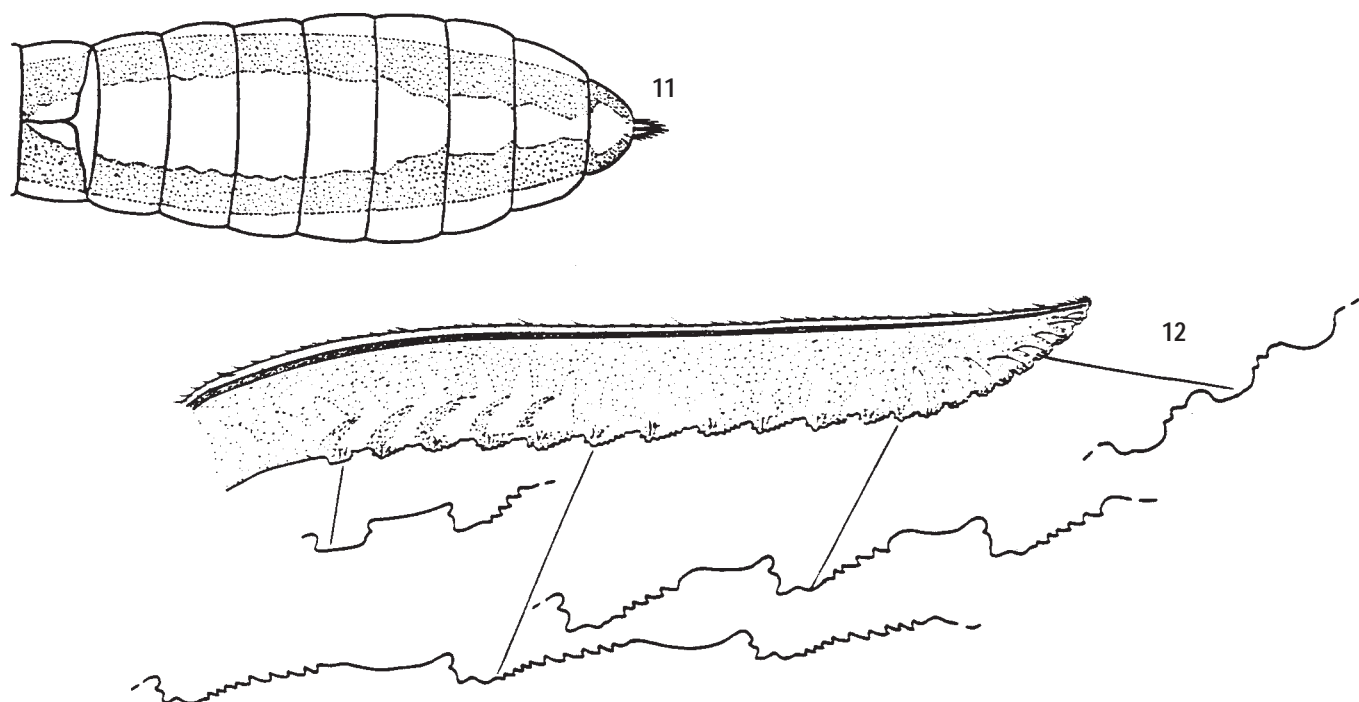
Diagnosis

Female: Colour: Head black, sordid yellow are: face below antennal sockets except mandible tip, supraantennal tubercles, hind orbit except upper 1/5, postocellar area. Thorax black, sordid yellow are: pronotum except median transverse stripe confluent with posterolateral medial spot; tegula, sagittated apex of mesonotal middle lobe, mesoscutellum, its appendage and spot lateral to former on lateral lobe, metascutellum and spot behind it; mesepisternum except anterodorsal angle; posterior half of mesepisternum, metapleuron except along pleural suture stripe. Abdomen sordid yellow, black are: two lateral longitudinal stripes (Fig. 11). Legs sordid yellow, black are outer lateral stripe on metacoxa, dorsal spot on metatrochanter, posterior stripe each on apical 1/5 of profemur, apical 2/3 of mesofemur and entire metafemur, outer aspects of tibiae and tarsi of front four legs, metatibia and tarsi entirely. Wings hyaline, venation including costa, subcosta and stigma fuscous to black.

Structure: Average length 11mm. Antenna insignificantly incrassate before apex, flagellum not compressed; lengths: scape and pedicel 5:4, segments 3 and 4 3:2. Clypeus (Fig. 6) roundly incised upto 1/3 of its length with rounded lateral teeth; labrum (Fig. 6) broader than long (3:2) with rounded anterior margin,



Figures 6-10. *Tenthredo macropunctata* sp. nov.
6. Clypeus and labrum; 7. Tarsal claw;
8. Thoracic part (lateral view); 9. Penis valve; 10. Gonoforceps.



Figures 11-12. *Tenthredo macropunctata* sp. nov.
11. Colour pattern of abdomen; 12. Lancelet

malar space 0.5x diameter of median ocellus. LID:IDMO:EL: = 1:1.9:1.9; POL:OCL:OOL = 1:1.5:2.1. Frontal area below level of eyes; median fovea narrowly canaliculate, shallowly reaching median ocellus; supra-antennal tubercles moderately raised and confluent with lowlying frontal ridges; post-, inter- and circum-ocellar furrows distinct; lateral furrows sunken, parallel; postocellar area subconvex, broader than long (3:2); head narrowing behind eyes. ICD:ITD = 1:3; mesoscutellum (Fig. 8) convexly raised, its appendage ecarinate; mesepisternum obtusely raised, mesosternum lacking thorns. Metabasitarsus shorter than following three joints combined (6:7), metafemur almost equal to metatibia. Tarsal claw (Fig. 7) with subapical tooth shorter than apical one, IATS:MB:OATS = 1:2:0.8. Lancelet (Fig. 12) having 20 serrulae.

Sculpture: Head shining with dense, fine, shallow punctation. Mesonotum with scattered, minute, distinct punctation; mesoscutellum with minute, isolated, shallow punctation on posterior slope, its appendage impunctate; mesepisternum with dense, minute, shallow, confluent punctation on its upper half whereas lower half is provided with comparatively large-sized punctation; mesosternum densely, finely punctate. Abdomen except polished propodeum subshining with dense, fine, shallow

punctation.

Pubescence: Silvery, 0.2x scape length.

Male: Length 10mm. Similar to female excepting mesosternum and mesepisternum pale yellow. Genitalia: penis valve (Fig. 9), gonoforceps (Fig. 10).

Discussion

T. macropunctata sp. nov. and *T. micropunctata* sp. nov. can be separated from *T. flatopleura* Singh and Saini (1987b) on the basis of the shape of mesopleura which is flat in the latter and obtusely roundly raised in the former two. *T. macropunctata* can be separated from *T. micropunctata* sp. nov. in having the abdomen with broad median longitudinal pale stripe; metafemur is striped with black; clypeus is roundly incised; postocellar area with broad pale spot: tegula is pale, mesoscutellum pale, impunctate; mesoscutellar appendage pale, polished and carinate; supra-antennal tubercles are moderately raised sloping backward and confluent with insignificant frontal ridges and the mesopleura with its lower half pale and with large punctation. In *T. micropunctata* sp. nov. abdomen is without any pale stripe, metafemur is black, coarsely punctate; mesoscutellar appendage

black, punctate, carinate; supra-antennal tubercles are moderately raised and confluent with similar frontal ridges and the mesopleura black with minute punctation.

As is evident from the collection data given earlier, this species is widely distributed but its population appears to be very scanty. The entire collection is from low altitude areas.

***Tenthredo micropunctata* sp. nov.**
(Figs. 13-18)

Material examined

Holotype: Female, 27.vii.1982, Kalatop, Himachal Pradesh, 2400m, Coll. M.S. Saini.

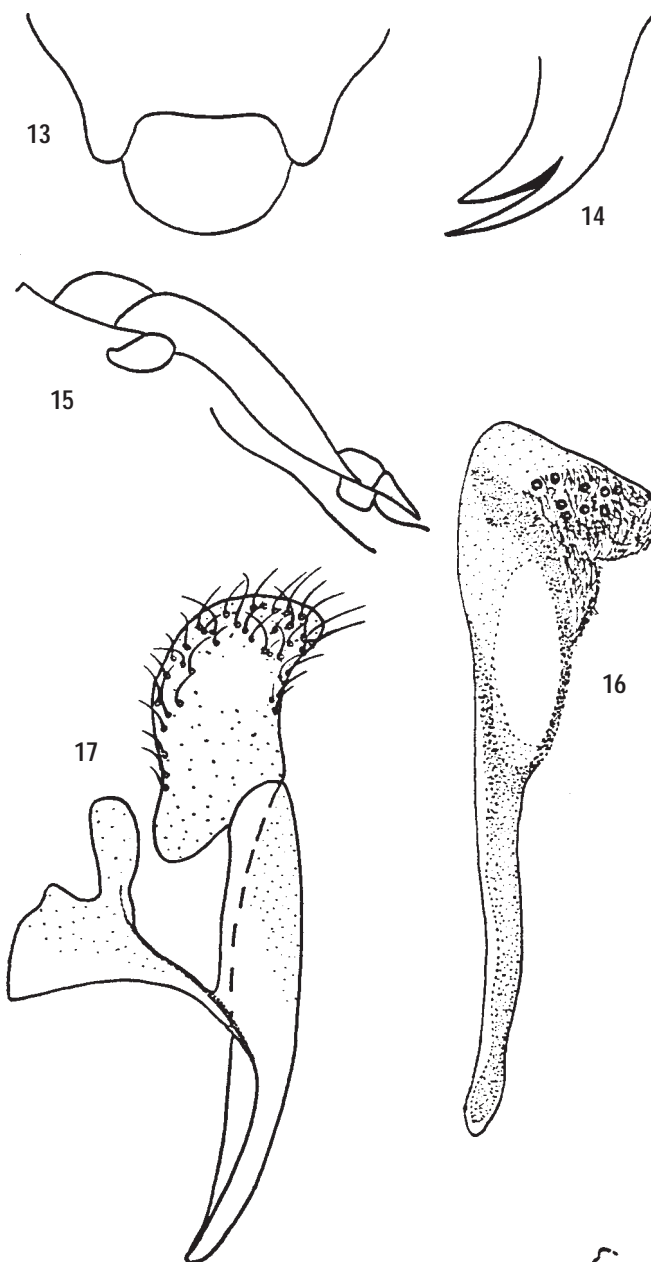
Paratypes: Two males, 27.vii.1982, Kalatop, Himachal Pradesh, 2400m, Coll. M.S. Saini; One male, 22.vi.1991, Binayak, Uttar Pradesh, 2400m, Coll. M.S. Saini; Two males, 14.v.1993, Gangtok, Sikkim, 1600m, Coll. V. Vasu; One male, 9.v.1995, Rangrang, Sikkim, 1400m, Coll. V. Vasu; One male, 15.v.1995, Phodong, Sikkim, 1700m, Coll. M.S. Saini; One male, 16.ix.1992, Bomdila, Arunachal Pradesh, 2500m, Coll. V. Vasu.

Collection method

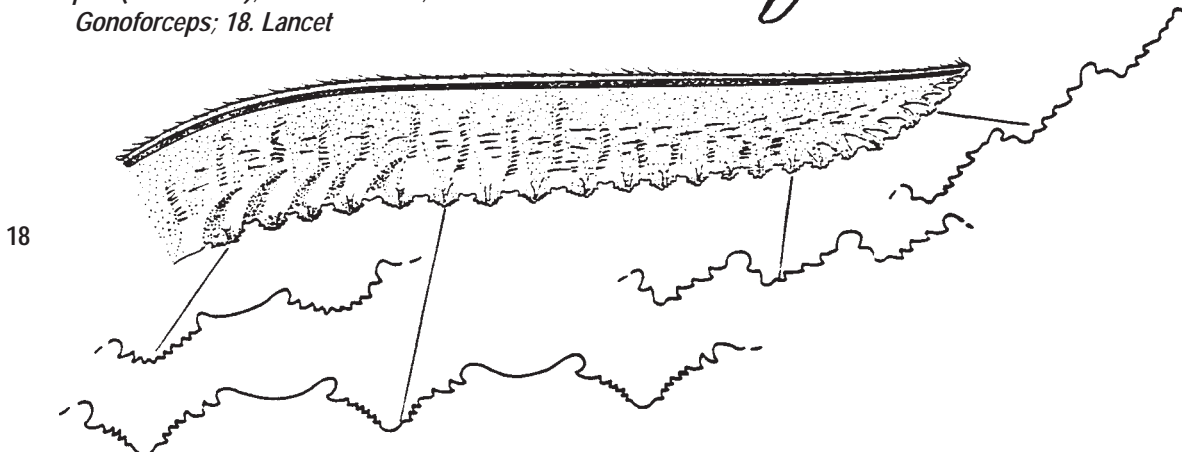
Sweep net.

Distribution

India: Kalatop in Himachal Pradesh; Binayak in Uttar Pradesh; Phodong, Rangrang, Gangtok in Sikkim; Bomdila in Arunachal Pradesh.



Figures 13-18. *Tenthredo micropunctata* sp. nov.
13. Clypeus and labrum; 14. Tarsal claw;
15. Thoracic part (lateral view); 16. Penis valve; 17.
Gonoforceps; 18. Lancet



Etymology

Species name refers to the small-sized punctation of lower half of mesopleura.

Diagnosis

Female: Colour: body black, whitish are: mandible except apex, clypeus except margins, triangular spot on hind orbit touching eye; extreme dorsal margin of pronotum, outer lateral margin and inner apical dot on tegula, deflexed lateral side of tergite 4 narrowly confluent above, anterior aspect of proleg except coxa and extreme base of femur, anterior aspect of apical 1/3 of femur, entire tibia and tarsi of mesoleg. Wings hyaline, venation including costa, subcosta and stigma fuscous to black.

Structure: Length 9mm. Antenna filiform, 2.4x head width, flagellum with apical five segments compressed; length: scape and pedicel (5:4), segment 3 and 4 almost equal. Clypeus (Fig. 13) rectangularly incised up to 1/3 of its length with rounded lateral teeth, labrum (Fig. 13) broader than long as 5:4 with rounded anterior margin; malar space 0.5x diameter of median ocellus. LID:IDMO:EL = 1:1.9:1.7; POL:OCL:OOL = 1:1.2:1.6. Frontal area below level of eyes, median fovea shallowly canaliculate; supra-antennal tubercles slightly indicated and confluent with similar frontal ridges; postocellar furrow absent, inter- and circum-ocellar furrows distinct, lateral furrows distinct, excurved; postocellar area subconvex, broader than long (5:3), head narrowing behind eyes. ICD:ITD = 1:3, mesoscutellum (Fig. 15) subconvex, its appendage ecarinate, mesepisternum obtusely raised, mesosternum lacking thorns. Metabasitarsus shorter than following three joints combined (6:7), metafemur equal to metatibia, tarsal claw (Fig. 14) with subapical tooth shorter than apical one, IATS:MB:OATS = 1:1.5:0.8. Lancet (Fig. 18) having 23 serrulae.

Sculpture: Head with dense, fine, shallow punctation, still shining. Mesonotum with dense, minute, distinct punctation, meso-scutellum with dense, minute, isolated punctate on posterior slope, its appendage faintly wrinkled, mesepisternum rugose with dense, fine, shallow confluent punctation; mesosternum punctulate. Abdomen shining, impunctate.

Pubescence: 0.2x scape length.

Male: Average length 7mm. Similar to female except whitish in the following: clypeus and labrum entirely, front four coxae, inner aspect of metacoxa, anterior aspect of mesofemur entirely, ventral aspect of metatrochanter and metafemur, deflexed sides of all tergites and sternites 2-5 pale brown. Genitalia: penis valve (Fig. 16), gonoforceps (Fig. 17).

Discussion

It is a widely distributed and well adapted species which is

available in the field from early May to end of October. How it tides over the rough weather of monsoon season when there are torrential rains and relative humidity touches its peak, remains a mystery. Since the postmonsoon months of north western Himalaya are very cold, during that season it is present in the north eastern Himalayan ranges only. Female population is comparatively lower than that of males.

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