



## REDESCRIPTION OF SEVEN GENERA OF THE TRIBE MECYSOLOBINI (COLEOPTERA: CURCULIONIDAE: MOLYTINAE) FROM INDIA

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### ABSTRACT

Present study reviewed the seven genera of the weevil tribe *Mecysolobini* Reitter, 1913 of the subfamily *Molytinae* from India viz., *Brahmalcidodes* Pajni and Dhir, 1987; *Cylindralcides* Heller, 1918; *Merus* Gistel, 1857; *Neomecyslobus* Pajni and Dhir, 1987; *Ornatalcides* Heller, 1918; *Sternuchopsis* Heller, 1918 and *Tuberculomecyslobus* Pajni and Dhir, 1987. A modified key to the genera of tribe from India is also provided. All the taxonomic characters including the genitalia are illustrated, adding to the existing taxonomic knowledge of these taxa.

**Key words:** Molytinae, Mecysolobini, redescription, identification key, *Merus*, Oriental region.

Weevils of the tribe *Mecysolobini* (Coleoptera: Curculionidae: Molytinae) is mainly distributed in the Oriental region, it comprises of eight genera and more than 360 species in the oriental region (Andrew and Ramamurthy 2010). Tribe *Mecysolobini* with beautiful ornamentations and markings, but confused at the generic and subgeneric levels. Schoenherr (1826) described the genus *Alcides* and although Reitter described subsequent genus *Mecysolobus* in 1905, he did not consider the genus *Mecysolobus* close to *Alcides*. Heller (1918) has split the parent genus *Alcides* Schoenherr of the tribe *Mecysolobini* into six subgenera. Later, Heller (1933) himself expressed inadequacy of these subgenera in accommodating the known species due to less correlation variability. Marshall (1934) synonymized the parent genus *Alcides* with *Alcidodes*. Voss (1953) adopted *Alcidodes* of Marshall and divided into subgenera *Alcidodes* and *Mecysolobus*. Later, Voss (1958) substituted *Alcidodes* by *Sternuchopsis* and proposed a new genus *Mesalcidodes* between the genera *Sternuchopsis* and *Mecysolobus* and elevated subgeneric status given by Heller to the generic level.

Haaf (1961) ignored completely the classification proposed by Voss. Pajni and Dhir (1987) revised the higher taxa upon Indian species, but their work included many errors when viewed from the International Code of Zoological Nomenclature (Morimoto and Kojima 2007). Alonso- Zarazaga and Lyal (1999) listed eight

genera in the *Mecysolobini*. Lyal and Curran (2000) proposed two species groups within *Alcidodes* for a limited number of the included species. Morimoto and Kojima (2007) prepared a key to the genera of the tribe *Mecysolobini* and described a new subgenus and two new species. Andrew and Ramamurthy (2010) prepared a checklist of weevils of the tribe *Mecysolobini* under the subfamily *Molytinae*, also followed the eight genera established by Alonso- Zarazaga and Lyal (1999) by covering 542 species known from Oriental and Ethiopian regions. The available descriptions of the seven genera of tribe *Mecysolobini* are found to be inadequate without illustrations and sufficient morphometric studies and followed the available genus name in the hierarchical list of the tribe *Mecysolobini* (after Alonso- Zarazaga and Lyal, 1999 and Andrew and Ramamurthy 2010) were used. So, the present study aims at redescriptions of the seven genera with key to the genera of tribe *Mecysolobini*. The redescriptions are supported by illustrations and morphometrics and identification key for the available genera of the tribe *Mecysolobini* is furnished.

### MATERIALS AND METHODS

Specimens included in this study are from the NPC, Division of Entomology, ICAR- IARI, New Delhi, India. Dissections were done using a Leica EZ4 stereo zoom microscope after relaxing overnight, and

the dissected genitalia parts were placed in 10-30% KOH for 60 minutes for digestion of soft tissues. The dissected genitalia were cleaned and stored in glycerin in microvials after study pinned along with their corresponding specimens. Illustrations were made using Wild M8 Heerbrugg and Leica MZ16A stereo zoom microscopes equipped with drawing tubes and edited in Adobe Photoshop 7.0. A Leica M205 FA stereo zoom microscope with auto montage software was used to photograph the specimens. The terminology used largely follows Thompson (1992); Lyal and Curran (2000) and Kumar et al. (2016). Measurements were made using an ocular micrometer. The following abbreviations used: SL- Standard length, SW- Standard width, HL- Head length, HW- Head width, FW- Frons width, EYL- Eye length, EYW- Eye width, PL- Pronotum length, PW- Pronotum width, EL- Elytra length, EW- Elytra width, RL- Rostrum length, RW- Rostrum width, CL- Club length, CW- Club width; NPC- National Pusa Collection; IARI- Indian Agricultural Research Institute; ICAR- Indian Council of Agricultural Research; MoEF & CC- Ministry of Environment, Forests and Climate Change.

**RESULTS AND DISCUSSION**

**Key to the Indian genera of Mecysolobini Reitter (modified after Pajni and Dhir, 1987)**

1. Claw segment shallow coming out from third tarsal segment; antennal funicle robust, second to seventh segments transverse, successively becoming wider, second segment 1.28-1.32x as long as third, seventh narrower than the first of club; procoxae lying in the middle of prosternum between submarginal sulcus and posterior margin; metasternum between meso- and metacoxae longer than mesocoxa (Fig. 20) .....*Brahmalcidodes* Pajni and Dhir
- Claw segment moderately projecting out, third tarsal segment moderately bifurcated almost equal to the length.....2
2. VII funicular segment separate with the club, 0.94-0.96x narrower than I segment of club.....3
- VII funicular segment continuous from the club, 1.33-1.35x wider than I segment of club.....5
3. Funicular segment II 3.0-3.2x longer than funicular segments III to VI, 1.20-1.22x longer than segment I and VII (Figs. 4; 141), body elongated cylindrically, rostrum 1.30x moderately longer than pronotum (Fig. 1).....*Merus* Gistel
- Funicular segment II 0.9-0.92x longer than

- funicular segment I and VII, body elongated ovate, rostrum shallow, 1.04-1.10x as long as pronotum .....4
4. Body ovate, (Fig. 49), sternite VIII of spiculum gastrale almost parallel in width (Fig. 60).....*Neomecyslobus* Pajni and Dhir
- Body neither ovate nor cylindrically straight (Fig. 99), sternite VIII convex, uneven in width (Fig. 112).....*Tuberculomecyslobus* Pajni and Dhir
5. Fore- femoral tooth serrated (Fig. 37).....*Cylindralcides* Heller
- Fore- femoral tooth non- serrated .....6
6. Pronotum length- width ratio 0.69-0.72x as long as broad (Figs. 85; 132), elytral length- width ratio 1.33-1.42x as long as broad (Figs. 81, 139), femoral tooth 2.24x as long as broad (Fig. 153).....*Sternuchopsis* Heller
- Pronotum length- width ratio 0.78-0.85x as long as broad (Figs. 68, 131), elytral length- width ratio 1.72-1.83x as long as broad (Figs. 65, 138), femoral tooth 1.0x as long as broad (Fig. 152).....*Ornatalcides* Heller

**RESULTS AND DISCUSSION**

**1. *Merus* (Gistel, 1857)**

Type: *Lixus fasciatus* Redtenbacher 1848: 548. (NPC); *Merus fasciatus* Gistel, 1857: 606; *Merus fasciatus* Reitter, 1987:30.

**Redescription**

Body length 10.1- 12.7 mm, rostrum elongated cylindrically, with shallow punctations 1.06-1.10x widest at the apex. Antennae, slightly curved, scape elongated, straight. Eyes flat, ovate, in lateral view, covered with yellowish setae on the base. Pronotum ornamented with 3 complete yellowish longitudinal stripes, two near to the sides, one at the middle, two stripes on sides continuous to the elytra. Scutellum very small, oval shaped. Elytra elongated, straight, almost parallel in width from the shoulder to near to the apex, elytra ornamented with incomplete stripes, Abdomen U- shaped, with horizontally straight ventrites. Legs slender, foreleg longer than other legs, femur width widest at the tooth, tibia with mucro well developed, premucro absent, tarsi with claw segment well developed. Male genitalia, aedeagus almost parallel in width, narrowed, pointed at apex. Tegmen circular, manubrium, Sternite VIII divided into two hemisternites, transversely oriented. Female genitalia,

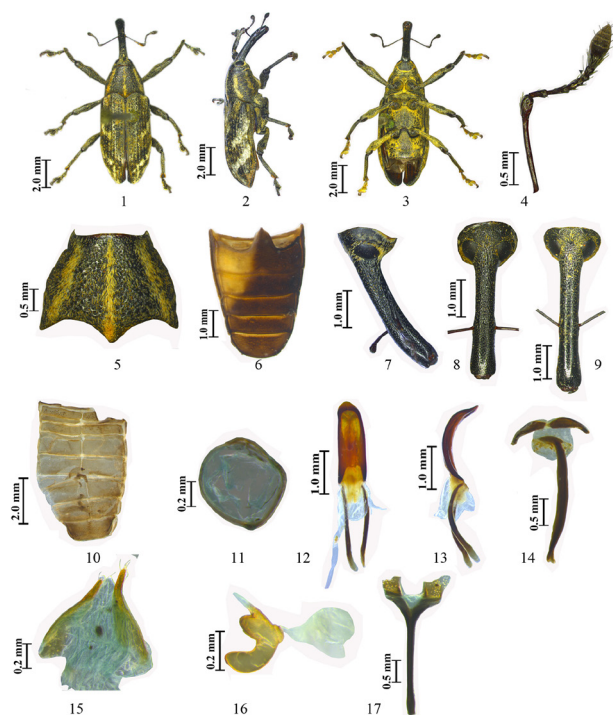
spermatheca with distal arm 1.07x as long as a proximal arm, nodulus projecting out, ramus swollen, cornu swollen, sternite VIII with spiculum ventrale, Y- shaped.

### *Merus fasciatus* (Gistel) (Figs. 1- 17)

Type: *Lixus fasciatus* Redtenbacher, 1848: 548; (NPC); *Alcides fasciatus* Lacordaire, 1866:16; *Alcides fasciatus* Klima, 1934: 43; *Alcidodes fasciatus* Marshall, 1939: 570; *Mecysolobus fasciatus* Pajni and Dhir, 1987: 30; *Merus fasciatus* Andrew and Ramamurthy, 2010: 275.

### Redescription

Head: Integument blackish with shallow punctations, densely setose; antennae reddish brown, funicles with pale yellowish white erect setae; head round at the base, 0.61-0.65x as long as broad, eyes flat ovate, 1.47-1.52x as long as broad, eyes narrow at the base of the rostrum, basal portion of the head covered with yellowish setae, frons punctated, 0.38-0.40x as wide as head (Figs. 8, 113). Antennae scape long, not reaching to the middle of the eyes, 1.17-1.20x as long as funicular segments, 8.33-8.45x as long as broad; segment I 0.80-0.85x as long as segment II, 2.00-2.14x as long as segment III



Figs. 1-17. *Merus fasciatus* Gistel, Habitus (1- 3) Male dorsal, lateral and ventral view; (4) Antennae; (5) Pronotum; (6) Venter; (7- 8) Rostrum; (9) Female rostrum; (10) Sternum; Male genitalia (11- 13) Tegmen, Aedeagus dorsal and lateral view; (14) Male sternites VIII and IX; Female genitalia (15- 17) Coxites and styli, spermatheca and female sternite VIII.

to V, segment VII 1.0-1.02x as long as segment I; club 1.54-1.58x as long as broad, segment I 1.16-1.22x as long and 1.18-1.20x as broad as segment II, 1.40-1.42x as long and 2.16-2.22x as broad as segment III (Figs. 4, 141). Rostrum elongated cylindrically, shallow, punctate, apex 1.06-1.12x as wide as other portion of the rostrum, smooth at surface, 4.65-4.802x as long as broad, widest at the apex, 1.13-1.18x as wide as frons, scrobes starts near to the middle of the rostrum, almost parallel in width and curved (Figs. 7- 8; 113, 120).

Thorax: 0.79-0.85x as long as broad, with complete yellowish stripe on both sides, at the middle ornamentation with punctation, without postocular lobes, surface covered with few yellowish setae, slightly trapezoidal (Figs. 5, 127). Elytra elongated, straight, parallel in width from the base to near to the apex, with two yellowish-white stripes at the middle on each elytron, with one incomplete stripe at the base, one shallow stripe at the apex, 1.93-2.0x as long as broad, 3.00-3.15x as broad as apex, 2.90-2.95x as long and 1.18-1.20x as broad as pronotum (Figs. 1, 134). Scutellum small circular, ovate (Figs. 1, 134). Legs, foreleg longest, hindleg 0.79-0.82x as long as foreleg, femur of all three paired legs have tooth, with smaller fewer serrated denticles, femur widest at the tooth, 5.13-5.30x as long as broad, tibia well developed, tibia widest at uncus, 4.78-1.52x as long as broad (Figs. 3, 148). Abdomen: 1.43-1.50x as long as broad, all ventrites horizontally straight, ventrite I depressed at the middle, ventrite I 2.05-2.10x as long as II, 2.33-2.40x as long as III and IV, 1.84-1.86x as long as ventrite V, convex, ventrite V without erect setae (Fig. 6).

Male genitalia: Aedeagus 5.82-6.0x as long as broad, almost parallel in width, narrowed, pointed at apex; in lateral view, curved, pointed at the apex (Figs. 12- 13); aedeagal apodeme 0.95-0.98x as long as median lobe, median lobe almost parallel in width, widest at the middle, apex of the aedeagus sclerotised, membranous after the apex, endophallus transparent, shorter (Figs. 155, 169). Tegmen circular, 1.0-1.02x as long as broad, manubrium small (Figs. 11, 176). Sternite VIII (Fig. 14) divided into two hemisternites, transversely oriented, lamellate, pointed at the tip in both hemisternite; each hemisternite horizontally acuminate, sternite VIII, IX connected with almost transparent membrane; spiculum gastrale 12.5-13.0x as long as broad, slender, sinuate (Fig. 162). Female genitalia: Spermatheca with distal arm 1.07-1.10x as long as a proximal arm, the angle between arms acute, nodulus projecting out, ramus swollen, cornu swollen, narrowed at the apex (Fig.

16). Sternite VIII with spiculum ventrale 2.50-2.68x as long as broad, Y-shaped, sternite VIII divided into two hemisternites, square-shaped, transversally acuminate; coxites dilated from the styli, membranous; styli relatively small, swollen, shallow narrowed, apically inserted with long setae (Figs. 15, 17).

**Measurements (mm)**

Male: SL: 10.8- 11.20; SW: 3.30- 3.45; PL: 2.10- 2.25; PW: 2.70- 2.80; EL: 6.1- 6.40; EW: 3.30- 3.45; RL: 3.2- 3.35; RW: 0.40- 0.45; HL: 0.40- 0.45; HW: 0.90- 0.92. Female: SL: 11.50- 12.10; SW: 3.65- 3.90; PL: 2.30- 2.42; PW: 2.90- 2.95; EL: 6.35- 6.58; EW: 3.65- 3.90; RL: 3.45- 3.85; RW: 0.45- 0.52; HL: 0.45- 0.54; HW: 1.10- 1.15.

**Remarks**

Pronotum with 3 evident complete yellowish stripes, two on sides, one at the middle with punctuation without postocular lobes. Antennae, funicular segment II longer than other funicular segments. Legs with a femoral tooth, serrated, tibia with well-developed mucro and ventral tibial tooth.

**Host plants**

*Urtica dioica*, *Poaceae* spp. and *Viburnum* spp.

**Distribution**

India: Himachal Pradesh: Uttarakhand. Altitude: 1434–2015m.

**Material examined**

3♂, 4♀, INDIA: Himachal Pradesh, Manali, N32.263094°; E77.188121°, 2009m, 28.VI.1977, Coll. unknown (NPC). 1♂, 2♀, Himachal Pradesh: Solan: Kasauli, N30.899947°; E76.961974°, 1812m, 04.IV.1979, Coll. unknown (NPC). 2♂, 2♀, Uttarakhand: Mussoorie, N 30.45690°; E78.07829°, 2015m, 28.VI.1980, Coll. unknown (NPC). 1♂, 1♀, Himachal Pradesh: Solan: Kandaghat, N30.967003°; E77.107455°, 1434m, 29.VI.1980, Coll. unknown (NPC).

**2. *Brahmalcidodes* (Pajni and Dhir)**

*Brahmalcidodes* Pajni and Dhir, 1987: 29 (NPC).

**Redescription**

Body length 7.50- 8.0 mm. Rostrum elongated, cylindrical shaped, frons 0.49x broader than rostrum width. Eyes flat, ovate. Head with punctuations, with shallow groove. Pronotum ornamented, covered with

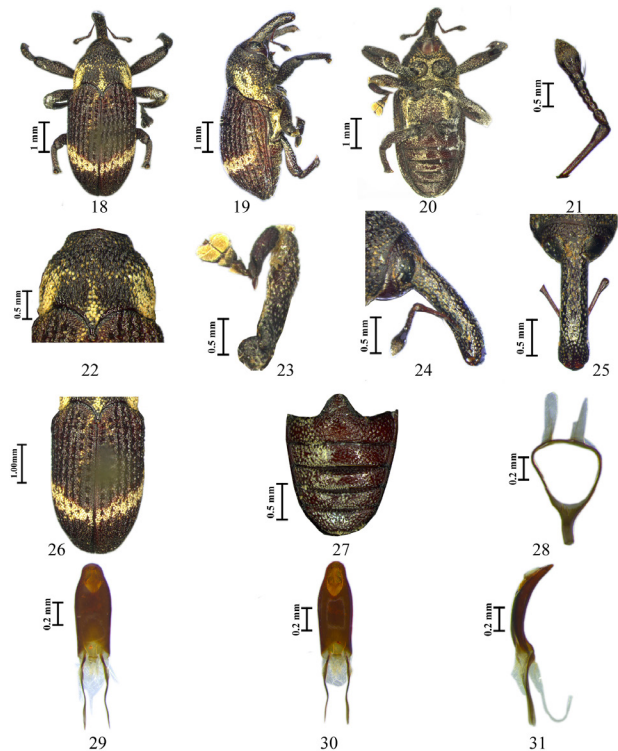
yellowish patches on both sides, at the centre from the base to the middle, surface with irregular elongated shaped postocular lobes. Scutellum: shallow U-shaped. Elytra in dorsal view: sub-cylindrically elongated, shallow ovate, convex at the apex, almost parallel in width, elytra ornamented with a slight horizontal yellowish wide striped marking which connects at the middle of both elytra, covered with yellowish recumbent setae. Abdomen shallow, U-shaped, with horizontally straight ventrites. Legs slender, foreleg longer than other legs, femur width widest at the tooth, tibia with mucro, premucro well developed. Male genitalia aedeagus widest near to the apex of the median lobe. Tegmen with small manubrium, with long basal piece, with elongated parameres.

***Brahmalcidodes micronychus* (Pascoe) (Figs. 18- 31)**

Type: *Alcides micronychus* Pascoe, 1873: 183; Faust, 1894a: 242, 258 (NPC); *Alcidodes micronychus* Marshall, 1939: 570; *Brahmalcidodes nigromicronychus* Pajni and Dhir, 1987:30.

**Redescription**

Head: Integument blackish, with punctuations,



Figs. 18-31. *Brahmalcidodes micronychus* Pajni and Dhir, Habitus (18- 20) Male dorsal, lateral and ventral view; (21) Antennae; (22) Pronotum; (23) Foreleg; (24- 25) Rostrum lateral and dorsal view; (25) Elytra; (26) Venter; Male genitalia (28- 31) Tegmen, aedeagus dorsal, ventral and lateral view.

antennae dark, reddish-brown, funicles with few erect setae; rostrum apex blackish, marginate, punctate; base of head flat, 0.49-0.52x as long as broad, eyes almost round, circular; at the middle of the head in dorsal view 1.18-1.25x as long as broad; frons with shallow, punctate depression, 0.23-0.28x as wide as head (Figs. 25, 114). Antennae scape short, not reaching to the middle of eyes, 3.79-3.85x as long as broad, smaller than funicular segments, 0.89-0.92x as long as funicles; funicle segment I 2.34-2.40x longer than funicle segment II-VI, segment I 1.80-1.85x as long as segment II, 2.31-2.40x as long as segment III-VI, segment 7 0.86-0.90x as long as segment I, funicular segment VII continuous with the club, club 1.03-1.08x as long as broad, segment I 1.56-1.60x as long and 1.38-1.42x as broad as segment II, segment II 1.30-1.36x as long and 2.20-2.28x as broad as segment III (Figs. 21, 142). Rostrum elongated cylindrically, 3.30-3.52x as long as broad, shallow, widest at the apex, shallow, punctate, marginate, with shallow longitudinal impression in the basal half, feebly curved at the middle to the apex of the rostrum; 2.06-2.12x as wide as frons (Figs. 25, 114, 121).

Thorax: integument black, filled with yellowish recumbent setae 0.86-0.90x as long as broad, dorsal view covered with punctations, shallow, dilated near to the apex, widest at the base, 1.68-1.72x as broad as apex, ornamented with yellowish patches on both sides, patches covered with setae, punctated with irregular impression (Figs. 22, 128). Scutellum small, almost oval, U-shaped (Fig. 26). Elytra shallow, ovate, 1.67-1.72x as long as broad, broadest at the shoulders, almost parallel in width from the base to near to the apex, 2.78-2.85x as broad as apex, convex shaped at the apex, with ornamentation, with shallow, horizontal, yellowish-white striped marking, connects at middle of both elytra, covered with yellowish recumbent setae; 2.07-2.20x as long as a rostrum, 2.33-2.42x as long as, 1.19-1.25x as broad as pronotum (Figs. 26, 135). Legs, fore femora slender, with a tooth, the width of the femur more at the tooth, 3.36-3.48x as long as broad, tibia well developed, with uncus 4.85-5.02x as long as broad, widest at the middle, tarsi with claw slightly coming out or somewhat rounded at the third tarsal segment into the middle (Figs. 23, 149). Abdomen: 1.28-1.40x as long as broad, all ventrites straight horizontally, ventrite continuously reduce in length from ventrite I to ventrite IV; ventrite I 2.13-2.20x as long as III; ventrite V 2.25-2.30x as long as ventrite IV, ventrite V shallow, convex; procoxae far from margin of prosternum (Fig. 27).

Male genitalia: Aedeagus 4.50-4.80x as long as broad, widest near to the apex of the median lobe (Figs. 29-31); aedeagal apodeme 0.88-0.92x as long as median lobe, median lobe uneven in width, shallow, dilated at the apex, apex of the aedeagus round, thereafter membranous; in lateral view, curved (Figs. 156, 170). Tegmen with small manubrium, with long basal piece, with elongated parameres, 2.21x as long as broad, and basal piece 1.96-2.00x as long as manubrium (Figs. 28, 177).

#### Measurements (mm)

Male: Paratype. Measurements (in mm): Male SL: 7.50; SW: 2.50; PL: 1.80; PW: 2.0; EL: 4.20; EW: 2.50; RL: 1.50; RW: 0.5; HL: 0.5; HW: 1.0.

#### Remarks

Body length: 7.5- 8.0 mm. Antennae funicular segment II- VII are robust. Pronotum with ornamentations, with shallow punctations. Elytra almost parallel in width, widest at the shoulder, with ornamentations. Legs claw segment shallow coming out from third tarsal segment.

#### Host plants

*Viburnum* spp.

#### Distribution

India: West Bengal.

#### Material examined

Paratype: 2♂, INDIA: West Bengal, Darjeeling, N26.834900°; E88.307149°, 423m, 16.VIII.1922, Coll. Mackenzie. (NPC)

### 3. *Cylindralcides* (Heller)

*Cylindralcides* Heller, 1918- 211.

#### Redescription

Body length 8.00- 8.50 mm, elongated, straight. Rostrum elongated cylindrically, shallow, marginate without punctations at the apex. Antennae: scape almost reaches to the middle of the eyes. Head with a central groove at frons, eyes flat, ovate. Pronotum ornamented, covered with pale yellowish markings which cover on both sides. Scutellum triangular-shaped, emarginated at the U-shaped elytral base. Elytra in dorsal view sub-cylindrically elongated, ovate at the apex, almost parallel in width from the shoulder to near to the apex, ornamented with creamy

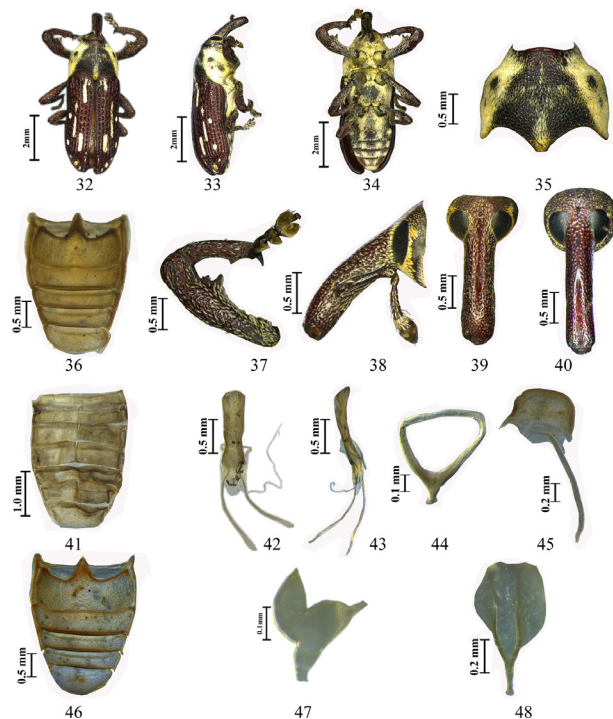
yellowish incomplete stripe distantly distributed at each interstitial interval. Abdomen almost V-shaped, covered with pale yellowish setae with reddish integument, with horizontally straight ventrites. Legs slender, foreleg longer than other legs, tibia with mucro well developed. Male genitalia aedeagus irregular in width, abruptly narrowed at the apex. Tegmen shallow, triangular shaped. Sternite VIII convex shaped. Female genitalia spermatheca the angle between distal and proximal arms acute, nodulus projecting out, and ramus flatten, cornu shallow, swollen. Sternite VIII with spiculum ventrale Y-shaped.

***Cylindralcides bubo* (Fabricius) (Figs. 32- 48)**

Type: *Cylindralcides bubo* Pajni and Dhir, 1987: 32; (NPC); *Rhynchaenus bubo* Fabricius, 1801: 474; *Rhynchaenus ferox* Olivier, 1807:189; Klima, 1934:52; *Alcides bubo* Boheman in Schoenherr, 1836: 612; *Alcidodes bubo* Marshall, 1939: 570; *Cylindralcides bubo* Andrew and Ramamurthy, 2010: 273.

**Redescription**

Head: Reddish-brown, with few recumbent pale



Figs. 32-48. *Cylindralcides bubo* Fabricius, Habitus (32- 34) Male dorsal, lateral and ventral view; (35) Pronotum; (36) Venter; (37) Foreleg; (38- 39) Male rostrum, lateral and dorsal view; (40) Female rostrum; (41) Sternum; Male genitalia (42- 43) Aedeagus, dorsal and lateral view; (44) Tegmen; (45) Male sternites VIII and IX; (46) Female venter; Female genitalia (47- 48) Spermatheca and female sternite VIII.

yellowish setae surrounded on sides of the eyes; rostrum reddish-brown; head round, with a small central groove, 0.73-0.80x as long as broad; eyes flat round shaped, reaches to the base of the rostrum, sides covered with yellowish markings, 1.43-1.52x as long as broad; frons 0.33-0.38x as wide as head (Figs. 39, 115). Antennae scape almost reaches to the middle of eyes, 4.60-4.70x as long as broad, 0.88-0.92x as long as funicles; segment I 1.13-1.20x as long as segment II, 2.18-2.32x as long as segment III to IV, segment VII 1.13-1.20x as long as segment I; club 1.22-1.30x as long as broad, segment I 0.37-0.40x as long and 1.14-1.20x as broad as segment II, 0.41-0.50x as long and 1.58-1.62x as broad as segment III (Figs. 38, 143). Rostrum elongated cylindrically, shallow, irregularly margined, 2.76-2.80x as long as broad, almost parallel in width at base and apex, 1.42-1.48x as wide as frons, scrobes almost parallel in width starts near to the middle of the rostrum (Figs. 38-39).

Thorax: Shallow dilated near to the apex, widest at the base, with ornamentations, sides covered with yellow patches, setose with yellowish setae, 0.82-0.85x as long as broad, almost parallel in width after the apex, 1.84-1.90x as broad as apex, narrowed abruptly at the apex (Figs. 35, 129). Scutellum triangular-shaped (Fig. 32). Elytra elongated, irregularly straight, shallow sinuate at the middle, almost straight, parallel in width from base to near to the apex, with ornamentations, longitudinal stripe near to the apex in between interstriae 2 and 3 on each elytron, with longitudinal stripes at the middle of the elytra in between interstriae 4 and 5 at each elytron; with pale yellowish setae, with small round patches at interstriae 6 and 7 from the apex on each elytron, 1.88-1.92x as long as broad, 1.80-1.85x as broad as apex, 3.35-3.50x as long as, 5.0-5.20x as broad as a rostrum, 2.47-2.52x as long and 1.08-1.12x as broad as pronotum (Figs. 32, 136). Foreleg longer than other legs, covered with shallow yellowish setae, femur having a tooth with serrated teeth, femur widest at the tooth, 3.45-3.52x as long as broad; tibia 2.33-2.42x as long as broad, widest at the uncus, well developed, tibia well developed with a mucro, corbels open type (Figs. 37, 150). Abdomen elongated, V-shaped, 1.40-1.52x as long as broad, all ventrites horizontally straight, ventrite I shallow depressed at the middle, 2.0-2.10x as long as ventrite II, 2.50-2.60x as long as ventrite III 3.55-3.64x as long as ventrite IV, 2.0-2.16x as long as ventrite V shallow convex, ventrites covered with pale yellowish setae (Fig. 36).

Male genitalia: Aedeagus 6.70-7.00x as long as broad, irregular in width, sides of median lobe sinuate,

abruptly narrowed at the apex, in lateral view flat-shaped (Figs. 42–43); aedeagal apodeme 1.15-1.20x as long as median lobe, median lobe almost irregular in width, membranous after the apex, endophallus transparent, shorter than aedeagus, flagellum almost equal to the length of aedeagus (Figs. 157, 171). Tegmen shallow, triangular, 1.05-1.10x as long as broad (Figs. 44, 178). Sternite VIII (Fig. 45) convex, pointed tips at both sides; spiculum gastrale 1.83-1.90x as long as broad (Figs. 45, 164). Female genitalia: Spermatheca with distal arm, 1.12-1.18x as long as a proximal arm, the angle between arms acute, nodulus projecting out, ramus flatten, cornu shallow, swollen, pointed at the apex (Fig. 47). Sternite VIII with spiculum ventrale 3.0-3.25x as long as broad, Y-shaped, sternite VIII divided into two elongated hemisternites, longitudinally straight, transversally acuminate, membranous, 2.80-2.90x as long as broad (Figs. 47- 48).

#### Measurements (mm)

Male: SL: 8.0- 8.42; SW: 2.50- 2.68; PL: 1.90- 1.98; PW: 2.30- 2.35; EL: 4.70- 4.95; EW: 2.50- 2.68; RL: 1.40- 1.60; RW: 0.50- 0.55; HL: 0.80- 0.88; HW: 1.10- 1.15. Female: SL: 8.75- 9.20; SW: 2.70- 2.80; PL: 2.05- 2.15; PW: 2.50- 2.55; EL: 4.90- 5.10; EW: 2.70- 2.80; RL: 1.50- 1.82; RW: 0.55- 0.60; HL: 0.85- 0.90; HW: 1.80- 1.82.

#### Remarks

Antennal scape almost reaches to the middle of the eyes, funicle segment VII continuous with the club. Pronotum round, ornamented with pale yellowish patches on both sides. Elytra almost longitudinally straight with ornamentations, with incomplete stripes. Legs: femur with a serrated enlarged tooth, premucro well developed, open type corbels.

#### Host plants

*Cyamopsis tetragonoloba* and *Viburnum* spp.

#### Distribution

India: West Bengal, Uttarakhand. Altitude: 723–1418m.

#### Material examined

1♂, 2♀, INDIA: Karnataka: Banglore, Seddappati, N15.5845°; E75.5231°, 886m, Coll. T.R. Subramaniam, 15.VI.1953, 20.XII.1959. 1♂, 1♀, Himachal Pradesh, Solan, Kandhaghat; N30.96700°; E77.10713°, 1418m, 28.VI.1977. 2♀ Assam, Jeyapore. N26.40738°; E93.24926°, 723m, Coll. C.I.E (NPC), 02.V.1979.

#### 4. *Neomecyslobus* (Pajni and Dhir) (Figs. 49- 64)

Type: *Neomecyslobus feae* Pajni and Dhir, 1987: 29. (NPC).

#### Redescription

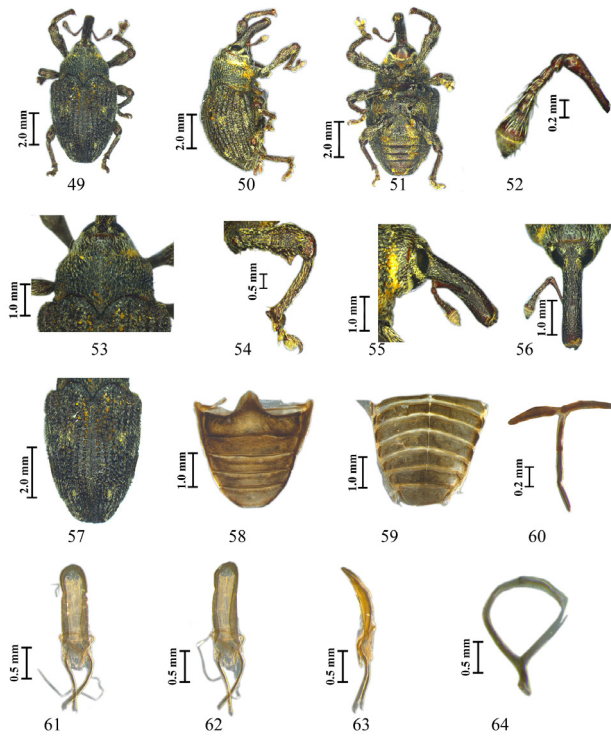
Body length 7.5- 8.0 mm, ovate. Rostrum elongated cylindrically, in dorsal view: irregular longitudinal margins visible, absent at the apex; in lateral view, scrobes almost parallel in width. Eyes flat, ovate, surrounded by yellowish setae. Pronotum without any ornamentation, shallow, covered with pale yellowish sub-recumbent setae. Scutellum very small, visible under high magnification. Elytra in dorsal view: ovate, abruptly depressed at the middle of the base, reach to the shoulder, widest at the shoulder, elytra ornamented with shallow yellowish patches. Abdomen almost U-shaped, covered with yellowish setae, with reddish integument, with horizontally straight ventrites. Legs elongated, irregular in width, foreleg longer than other legs, femur width widest at the tooth, having single pointed tooth without any serrated teeth, tibia with mucro well developed. Male genitalia aedeagus in shallow curved, weakly sclerotised. Tegmen 1.47x as long as broad. Sternite VIII divided into two hemisternites, transversely oriented.

#### *Neomecyslobus feae* (Faust) (Figs. 49- 64)

*Alcides feae* Faust, 1894a: 245, 258; Marshall, 1939: 570; *Neomecyslobus feae* Pajni and Dhir, 1987: 31;

#### Redescription

Head: Blackish, with shallow punctations, with circular shallow groove at the center; antennae reddish-brown, funicles with erect setae; rostrum blackish, smooth, widest at the apex, longitudinal margin starts from the frons, reaches to the middle, with several irregular margins; base of the head flat, 0.51-0.55x as long as broad, eyes flat, ovate, 1.56-1.60x as long as broad, surrounded with yellowish setae; eyes on the middle of the head surrounded with yellowish setae; frons 0.33-0.38x as wide as head (Figs. 56, 116). Antennae scape short, not reaching to the middle of eyes, 4.37-4.50x as long as broad, 0.80-0.85x as long as funicles; segment I 0.87-0.90x as long as segment II, 1.55-1.60x as long as segment III- V, segment VII 1.42-1.52x as long as segment I, segment VII longer than funicle segments I- VI, funicle segment VII separate from the club; club 1.28-1.35x as long as broad, segment I 1.25-1.30x as long and 1.27-1.32x as broad as segment II, segment 1.0-1.10x as long as 1.83-1.90x as broad as segment III (Figs. 52, 144). Rostrum elongated



Figs. 49-64. *Neomecyslobus feae* Faust, Habitus (49- 51) Male dorsal, lateral and ventral view; (52) Antennae; (53) Pronotum; (54) Foreleg; (55- 56) Rostrum lateral and dorsal view; (57) Elytra; (58) Venter; (59) Sternum; Male genitalia (60- 63) Sternites VIII and IX, aedeagus dorsal, ventral and lateral view; (64) Tegmen.

cylindrically, 3.42-3.50x as long as broad, deeply marginate with irregular margins, from the base to the middle with single longitudinal margin, emarginated from frons, reaches to the middle of the rostrum, 1.27-1.30x as wide as frons (Figs. 56, 116, 123).

Thorax: Blackish, dorsal view is covered with irregularly shaped large depressed postocular lobes, with suberect setae, without ornamentation, abruptly dilated at the apex, 0.70-0.75x as long as broad, widest at the base, 1.96-2.00x as broad as apex (Figs. 53, 130). Scutellum very small, ovate (Fig. 57). Elytra ovate, with two yellowish patches on each elytron, patch one located at the middle of the elytra starts at interstriae 3, reaches to the margin of each elytron, patch two starts at interstriae 2, reaches to the margin of each elytron, interstriae 1- 3 shallow, longitudinally sinuate, elytra shallow, truncated at the apex, 1.24-1.30x as long as broad, 3.85-3.90x as broad as apex, 1.81-1.85x as long as a rostrum, 1.85-1.92x as long, 1.05-1.10x as broad as pronotum, broadest at the base (Figs. 57, 137). Foreleg longer than the other legs, a femur having a non-serrated pointed tooth, femur widest at the tooth, 3.81-3.89x as long as broad, 5.85-5.90x as long as broad, widest at the

middle, tibia well developed with a mucro, premucro shallow, visible, tibia with open type corbels, claws developed (Figs. 54, 151). Abdomen: 1.15-1.20x as long as broad, continuously narrowed from the base to the apex, ventrite I shallow, depressed, ventrite II- V straight horizontally, ventrite I 2.47-2.55x as long as ventrite II, 2.89-2.95x as long as ventrite III- IV; 1.67-1.72x as long as ventrite V, shallow convex, sternite I less in length than another sternite II- VII; procoxae far from the margin of prosternum (Fig. 58).

Male genitalia: Aedeagus 5.73-5.90x as long as broad, in lateral view shallow curved- (Figs. 61-63); aedeagal apodeme 1.20-1.25x as long as median lobe, median lobe almost parallel in width, rounded at apex, apex of the aedeagus weakly sclerotised, membranous thereafter (Figs. 158, 172). Tegmen 1.47-1.52x as long as broad, basal piece 2.0-2.10x as long as manubrium (Figs. 64, 179). Sternite (Fig. 60) VIII divided into two hemisternites, transversely oriented, each hemisternite horizontally acuminate (Fig. 165).

#### Measurements (mm)

Male: Male SL: 7.80; SW: 3.30; PL: 1.70; PW: 2.50; EL: 4.40; EW: 3.50; RL: 1.80; RW: 0.5; HL: 0.6; HW: 1.2.

Remarks: Antennae funicle segment VII 1.25-1.28x longer than funicular segments I and 2.23-2.30x longer than funicular segment III- VI, separate with the club. Pronotum blackish, without ornamentations. Elytra ovate, blackish, with shallow ornamentations, with yellowish patches. Legs with a femoral tooth, tibia with a well-developed mucro. Metasternum bulged towards hind coxae.

#### Host plants

*Bidens pilosa* and *Viburnum* spp.

#### Distribution

India: Arunachal Pradesh.

#### Material examined

2♂, INDIA: Arunachal Pradesh, Trista forest, N27.68917°; E96.45972°, 1225m, 16.V.1981, 20.VI.1978. Coll. unknown (NPC).

#### 5. *Ornatalcides* (Heller) (Figs. 65- 80)

*Ornatalcides* Heller, 1918: 214.

#### Redescription

Body length 14.0- 14.5 mm, shallow, ovate. Rostrum



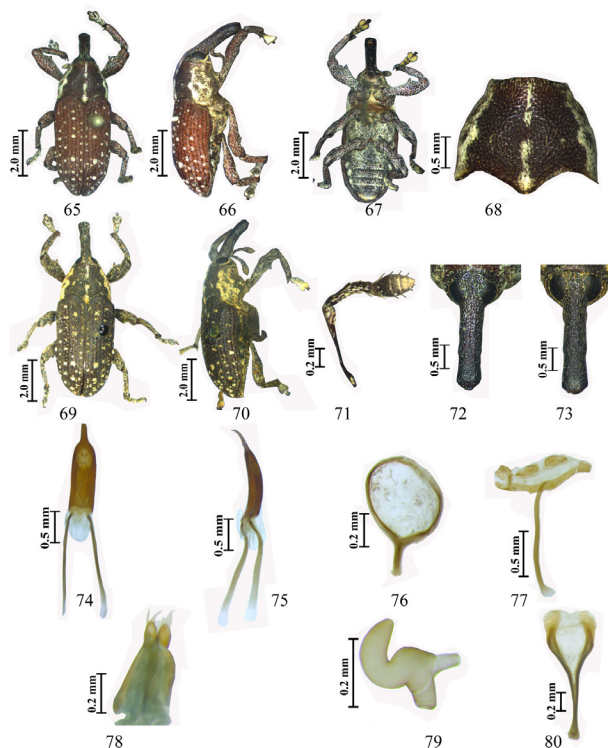
elongated cylindrically, irregular longitudinal margins visible, a small groove at the centre; in lateral view: scrobes almost parallel in width at the middle of the rostrum. Eyes flat, ovate. Pronotum ornamented, covered with creamy markings on both sides, striped at the middle with creamy setae, abruptly dilated near to the apex, oval-shaped punctations. Scutellum very small, oval reddish-brown. Elytra in dorsal view: sub-cylindrically elongated, almost parallel in width from the shoulder to near to the apex, abruptly narrowed at the apex, elytra ornamented with creamy yellowish small patches distantly distributed at each interstitial interval. Abdomen almost V-shaped, covered with pale yellowish setae, with reddish integument, with horizontally straight ventrites. Legs slender, foreleg longer than other legs, femur widest at the tooth, with a serrated tooth, claws well developed. Male genitalia aedeagus abruptly pointed apically. Tegmen circular shaped. Sternite VIII divided into two hemisternites, transversely oriented, lamellate shaped. Female genitalia spermatheca the angle between arms acute, both nodulus and ramus projecting out, V-shaped. Sternite VIII with spiculum ventrale Y-shaped, sternite VIII divided into two hemisternites, round, transversally acuminate.

### *Ornataleides leopardus* (Olivier) (Figs. 65- 80)

Type: *Ornataleides leopardus* Pajni and Dhir, 1987: 33. (NPC); *Rhynchaenus leopardus* Olivier, 1807: 190, 296; *Alcides leopardus* Boheman in Schoenherr, 1836: 612; *Alcides leopardus* Klima, 1934: 55; *Alcidodes leopardus* Marshall, 1939: 570.

### Redescription

Head: Integument blackish; rostrum apex blackish, with few recumbent pale yellowish setae near to the base; head shallow punctate, marginate, 0.58-0.65x as long as broad, eyes flat, oval-shaped, 1.80-1.90x as long as broad; frons shallow, marginate, with shallow central groove, 0.30x as broad as a head; head 0.33-0.35x as long as a rostrum, 2.20-2.30x as broad as a rostrum (Figs. 72, 117). Antennae scape short, not reaching to the middle of the eyes, 5.30-5.40x as long as broad, 0.93-1.00x as long as funicles; funicle segment I longer than other funicle segments 1.21-1.28x as long as segment II, 2.05-2.20x as long as segments III- V, segment VII 0.93-1.01x as long as segments I, funicle segment VII merged with the club; club 1.30-1.37x as long as broad, segment I 1.21-1.28x as long 0.83-0.85x as broad as segment II, segment 1.0-1.08x as long 1.38-1.42x as broad as segment III (Figs. 71, 145). Rostrum



Figs. 65-80. *Ornataleides leopardus* Olivier, Habitus (65- 67) Male dorsal and lateral view; (68) Pronotum; Habitus (69- 70) Female dorsal and lateral view; (71) Antennae; (72) Male rostrum; (73) Female rostrum; Male genitalia (74- 75) Aedeagus dorsal and lateral view; (76) Tegmen; (77) Male sternites VIII and IX, Female genitalia (78) Coxites and styli; (79) Spermatheca; (80) Female sternite VIII.

in dorsal view, 3.63-3.77x as long as broad, elongated cylindrically, almost parallel in width; scrobes almost parallel in width. (Figs. 117, 124).

Thorax: 0.79-0.85x as long as broad, shallow, ovate, constricted near to the apex, pronotum widest at base, 1.64-1.70x as broad as apex, surface of pronotum without any postocular lobes, covered with shallow small ovate punctations, ornamentations covered on both sides with creamy patches, with incomplete stripes at the middle (Figs. 68, 131). Scutellum small, slightly round shaped (Fig. 65). Elytra: shallow, ovate, widest at the shoulder, thereafter almost parallel in width from the base to near to the apex, covered with yellowish patches at equal interval of each interstriae, 1.73-1.80x as long as broad, 2.44-2.60x as long as rostrum, 2.39-2.45x as long as pronotum, convex at the apex (Figs. 65, 138). Legs: Foreleg longer than other legs, femur 3.58-3.70x as long as broad, femoral tooth 0.97-1.05x as long as broad, tibia 5.25-5.40x as long as broad with mucro, premucro well developed, claws well developed (Figs. 67, 152). Abdomen: with almost horizontally straight

ventrites, ventrite I shallow, dilated at the middle, 1.15-1.23x as long as broad, ventrite I 2.28-2.36x as long as II, 3.01-3.10x as long as III, 3.41-3.50x as long as IV, 1.98-2.08x as long as ventrite V, ventrite V shallow convex (Fig. 67).

Male genitalia: Aedeagus 7.31x as long as broad (Figs. 74, 75); aedeagal apodeme 1.16-1.20x as long as median lobe; in dorsal view: median lobe sub-cylindrical, parallel in width, abruptly narrowed at the apex; endophallus transparent, shorter than aedeagus (Figs. 159, 173). Tegmen 1.41-1.52x as long as broad, circular, manubrium small (Figs. 76, 180). Sternite VIII (Fig. 77) divided into two hemisternites, transversely oriented, lamellate shaped; each hemisternite horizontally acuminate, sternite VIII, IX connected with an almost transparent membrane; sternite IX with basal plate looks like a bow, shallow, curved at the middle; spiculum gastrale 4.20-4.32x as long as broad, slender, shallow sinuate (Fig. 166). Female genitalia: Spermatheca with distal arm 1.0-1.12x as long as a proximal arm, the angle between arms acute, both nodulus and ramus projecting out, V-shaped, ramus projecting out, swollen, almost parallel in width as a distal arm, cornu shallow, curved, with shallow narrowed at the apex (Figs. 78-79). Sternite VIII with spiculum ventrale 3.0-3.12x as long as broad, Y-shaped, sternite VIII divided into two hemisternites, round, transversally acuminate, membranous, 2.18-2.25x as long as broad; coxites shallow, dilated from the styli, membranous; styli relatively small, swollen, shallow, pointed, apically inserted with long setae. (Fig. 80).

#### Measurements (mm)

Male: SL: 14.0- 14.20; SW: 4.70- 4.80; PL: 2.50- 2.65; PW: 3.20- 3.30; EL: 8.10- 8.60; EW: 4.70- 4.80; RL: 2.50- 2.60; RW: 0.70- 0.75; HL: 1.0- 1.05; HW: 1.60- 1.70. Female: SL: 15.0- 15.35; SW: 4.90- 5.08; PL: 3.20- 3.28; PW: 3.42- 3.45; EL: 8.45- 8.65; EW: 4.90- 5.08; RL: 2.85- 3.05; RW: 0.79- 0.85; HL: 1.28- 1.36; HW: 1.85- 1.89.

#### Remarks

Antennae funicle segment I 2.5-2.62x longer than funicular segments III- VI. Eyes flat, almost ovate shaped. Pronotum with ornamentations. Elytra almost parallel in width, ornamented with small circular shaped yellowish patches. Legs with a femoral tooth, tibiae with uncus, claws bidentate with a long, pointed tooth.

#### Host plants

*Brassica napus* and *Mangifera indica*.

#### Distribution

India: Karnataka, Tamil Nadu.

#### Material examined

2♂, 1♀; INDIA: Karnataka, Bangalore, N12.947801°; E77.587539°, 914m, 08.V.1953, Coll. M.A.N. Rao. 1♀; INDIA: Tamil Nadu, Tiruchirappalli, N10.4818°; E78.4108°, 412m, 16.I.1922, Coll. B. C. Shantappa.

#### 6. *Sternuchopsis* (Heller)

*Sternuchopsis pectoralis* Boheman in Schoenherr, 1836: 618 (NPC)

#### Redescription

Body length 11.6- 12.4 mm, slightly ovate shaped. Rostrum elongated cylindrically, 1.06-1.12x longer than pronotum; in dorsal view: irregular, shallow longitudinal margins visible, Antennae: scape short in length 0.73-0.78x as long as funicles, funicular segment I and VII longer than other funicular segments. Head 0.53-0.58x longer than rostrum. Eyes flat, ovate. Pronotum without ornamentation, surface covered with oval postocular lobes. Scutellum small, shallow, triangular shaped. Elytra without ornamentation, striate with shallow longitudinal pits. Abdomen almost U-shaped, covered with pale yellowish setae, with horizontally straight ventrites, ventrite I longer than the other ventrites, ventrite III- IV almost equal in length, ventrite V 2.66-2.72x longer than the ventrite II- IV, 2.0-2.10x as long as ventrite V having yellowish erect setae at the margin. Legs; foreleg longer than other legs, femur widest at the tooth, with a non-serrated tooth, tibia with premucro well developed. Male genitalia aedeagus curved shaped. Tegmen elongated, manubrium very small. Sternite VIII horizontally oriented. Female genitalia spermatheca angle between arms acute. Sternite VIII with spiculum ventrale Y-shaped, sternite VIII divided into two hemisternites.

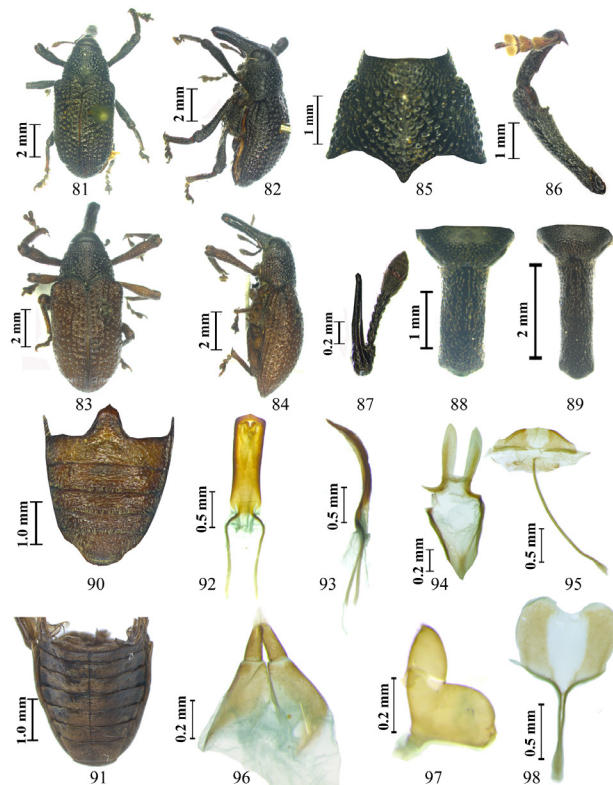
#### *Sternuchopsis pectoralis* (Boheman) (Figs. 81- 98)

*Alcides pectoralis* Boheman in Schoenherr, 1836: 618; *Alcidodes pectoralis* Marshall, 1939: 570;

*Sternuchopsis pectoralis* Andrew and Ramamurthy, 2010: 309.

#### Redescription

Head: blackish with few recumbent yellowish-brown setae, frons covered with dense recumbent yellowish-brown setae; rostrum black in colour, irregularly marginate, at the base with few recumbent



Figs. 81-98. *Sternuchopsis pectoralis* Boheman, Habitus (81-82) Male dorsal and lateral view; (83-84) Female dorsal and lateral view; (85) Pronotum; (86) Foreleg; (87) Antennae; (88) Male rostrum; (89) Female rostrum; (90) Venter; (91) Sternum; Male genitalia (92-93) Aedeagus dorsal and lateral view; (94) Tegmen; (95) Male sternites VIII and IX; Female genitalia (96) coxites and styli; (97) Spermatheca; (98) Female sternite VIII.

yellowish-brown setae. Head round with shallow punctation, without markings, frons covered with sub-recumbent setae; 0.92-1.00x as long as broad; eyes flat, oval-shaped, 1.54-1.60x as long as broad, frons 0.32-0.38x as wide as head (Figs. 88, 118). Antennae scape reaching near to the middle of the eyes, 0.73-0.78x as long as funicle; segment I 1.14-1.20x as long as segment II and 1.60-1.70x as long as segment III-V, segment VII 1.14-1.20x as long and 1.60-1.65x as broad as segments III-V; club 1.45-1.52x as long as broad, segment I 2.0-2.12x as long and 1.22-1.25x as broad as segment II, segment II 0.5-0.55x as long and 1.50-1.52x as broad as segment III, in total club 2.67-2.78x as long and 1.0-1.05x as broad as segment I, 5.33-5.42x as long and 1.83-1.90x as broad as segment II, 2.67-2.72x as long and 1.83-1.90x as broad as segment III (Figs. 87, 146). Rostrum 4.25-4.40x, punctures at the apex, 1.25-1.28x as wide as frons, frons flat between eyes; in lateral view: scrobe starts from between apex and middle portion of the rostrum (Figs. 118, 125).

Thorax: 0.72-0.80x as long as wide, 1.64-1.70x as

wide as apex, dorsal portion covered with ovate shaped postocular lobes, forming a shallow furrow vertically on the middle of pronotum (Figs. 85, 132). Elytra broadest at the shoulder, 1.33-1.40x as long as broad, 2.12-2.21x as long as a rostrum, 2.25-2.35x as long, 1.17-1.23x as broad as pronotum, apically convex; in lateral view moderately convex; in dorsal view U- shaped, elytra striate strongly converging towards the apex (Figs. 81, 139). Legs; Foreleg; femur 5.0-5.20x as long as broad, with a single tooth, tibia 6.33-6.38x as long as broad, with uncus, premucro well developed; in midleg, femur 4.35-4.52x as long as broad, with single mid femoral tooth; tibia 5.66-5.78x as long as broad, premucro well developed, corbels well developed compared to other two legs; in hindleg femur, 4.75-4.85x, tibia 5.86-6.02x as long as broad, corbels well developed, 3/4th of the leg bifurcate inside, claws connate (Figs. 86, 153). Abdomen: Surface of ventrite I shallow, depressed at the middle, ventrite II-IV almost horizontally straight, ventrite I 2.28-2.35x as long as II, 2.90-2.98x as long as III, 3.17-3.23x as long as IV, 2.14-2.20x as long as V, ventrite III and IV 1.09-1.15x subequal in length, ventrite V shallow, convex; hind coxae does not reach to the margin of elytra (Fig. 90).

Male genitalia: Aedeagus 5.27-5.40x as long as broad, in profile curved (Figs. 92-93); aedeagal apodeme 0.86-0.92x as long as median lobe, apex of the aedeagus strongly sclerotised, membranous thereafter (Figs. 160, 174). Tegmen 4.20-4.28x as long as broad, elongated, manubrium very small (Figs. 94, 181). Sternite VIII (Fig. 95) horizontally oriented, shallow, arrow-shaped, pointed at middle. Sternite VIII, IX connected with almost transparent membrane; sternite IX with basal plate looks like a bow, shallow, curved at the middle, spiculum gastrale 4.65-4.72x as long as shaft, shallow curved at apex, thicker at the middle (Fig. 167). Female genitalia: Spermatheca with distal arm 0.89-0.95x as long as a proximal arm, angle between arms acute, nodulus circular shaped, ramus projecting out, cornu horizontally straight, with shallow, pointed at the apex (Fig. 97). Sternite VIII with spiculum ventrale 1.77-1.82x as long as broad, Y- shaped, sternite VIII divided into two hemisternites, elongated shaped, transversally acuminate, membranous with shaft elongate, 1.49-1.52x as long as basal plate, without setae (Figs. 98); coxites shallow dilated from the styli, membranous; styli relatively small, swollen, apically inserted with long setae (Fig. 96).

#### Measurements (mm)

Male SL: 11.60- 12.40; SW: 4.40- 4.70; PL: 3.00-

3.20; PW: 3.60- 3.85; EL: 6.50- 6.70; EW: 4.40- 4.70; RL: 2.20- 2.30; RW: 0.62- 0.65; HL: 1.25- 1.30; HW: 1.36- 1.40. Female: SL: 12.6.- 13.40; SW: 4.65- 4.88; PL: 3.10- 3.30; PW: 3.70- 3.85; EL: 6.70- 6.85; EW: 4.65- 4.88; RL: 2.50- 2.75; RW: 0.60- 0.64; HL: 1.28- 1.35; HW: 1.42- 1.48.

### Remarks

Funicle segment VII continuous with the club. Pronotum without ornamentations, covered with oval shaped postocular lobes. Legs, femur with non- serrated tooth, premucro well developed, claw well developed.

### Host plants

*Ipomoea batatas*.

### Distribution

India: Tamil Nadu.

### Material examined

3♂, 1♀, INDIA: Tamil Nadu, Coimbatore, N11.286208°; E76.796644°, 749m, 18.III.1913, Coll. A.G.R.

### 7. *Tuberculomecyslobus* (Pajni and Dhir)

*Tuberculomecyslobus* Pajni and Dhir, 1987: 31.

### Redescription

Body length 12.0- 12.60 mm, shallow ovate, pointed at elytral apex. Rostrum elongated cylindrically, frons covered with pale yellowish ornamentations, scrobes almost parallel in width at the middle of the rostrum. Eyes flat, ovate. Head with yellowish marking, without any punctations. Pronotum ornamented with 3 pale yellowish longitudinal stripes. Scutellum very small, triangular-shaped. Elytra in dorsal view: shallow ovate shaped, ornamented, with yellowish, wide striped marking which connects at the middle of both elytra, striate with black shiny postocular lobes. Abdomen shallow, U- shaped, with horizontally straight ventrites, covered with recumbent setae. Legs slender, foreleg longer than other legs, femur widest at the tooth, tibia with well- developed mucro, tarsi with well- developed claw. Male genitalia aedeagus curved shaped. Sternite VIII shallow, depressed at the middle, convex, pointed on both sides at the bottom, spiculum gastrale 3.67- 3.75x as long as broad sternite VIII.

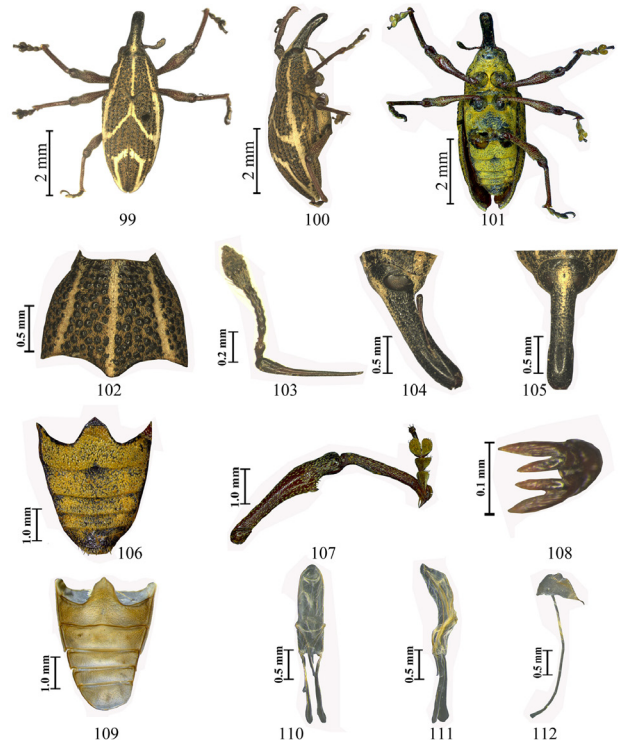
### *Tuberculomecyslobus crinalifer* (Marshall) (Figs. 99- 112)

*Alcidodes crinalifer* Marshall, 1922: 393; 1939:

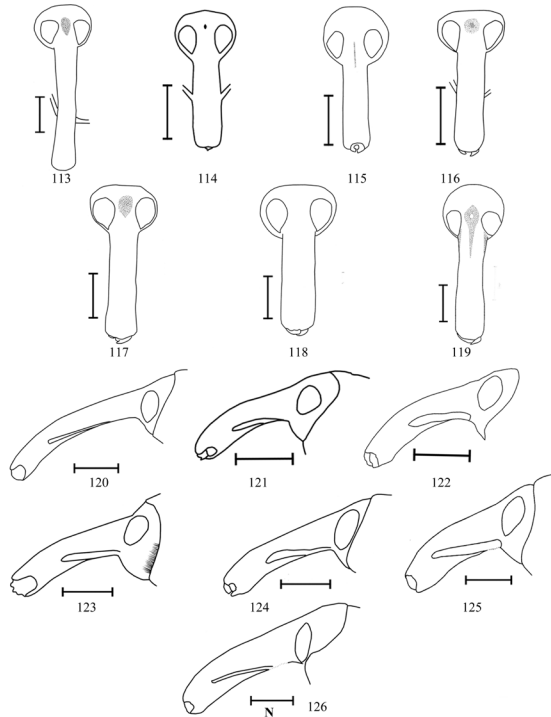
570; *Tuberculomecyslobus crinalifer* Pajni and Dhir, 1987: 31.

### Redescription

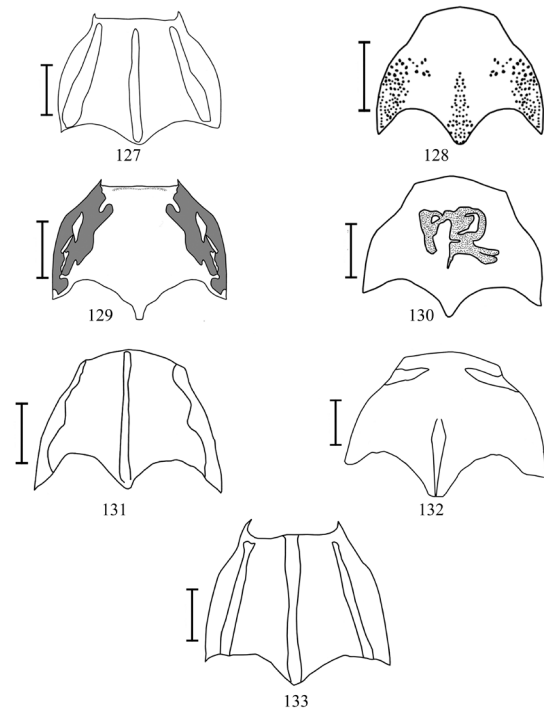
Head: Integument blackish, surface of frons covered with yellowish patch; antennae dark reddish brown, funicular segment VII covered with long brown erect setae; rostrum apex blackish; head moderately flat, 0.63- 1.68x as long as broad, frons covered with yellowish marking with a central longitudinal shallow groove; eyes flat, oval- shaped, frons 0.37-0.42x as wide as head (Figs. 105, 119). Antennae scape short, not reaching to the middle of eyes, scape 0.85-0.90x as long as funicles; segment I 1.17-1.25x as broad as segment II, segments III- V subequal in length, 0.58-0.62x as long as segment II, segment VII 2.17-2.30x as long and 2.00-2.14x as wide as segments III- V, segment VII 1.71-1.80x as wide as segments II- VI and 1.50-1.52x as wide as segment I, funicular segment VII longer than other funicular segments, covered with greyish erect setae; club 1.47- 1.52x as long as broad, segment I and II equal in length, segment II 0.78-0.84x as long as III (Figs. 103, 147). Rostrum 3.57-3.65x as long as wide, apical half portion



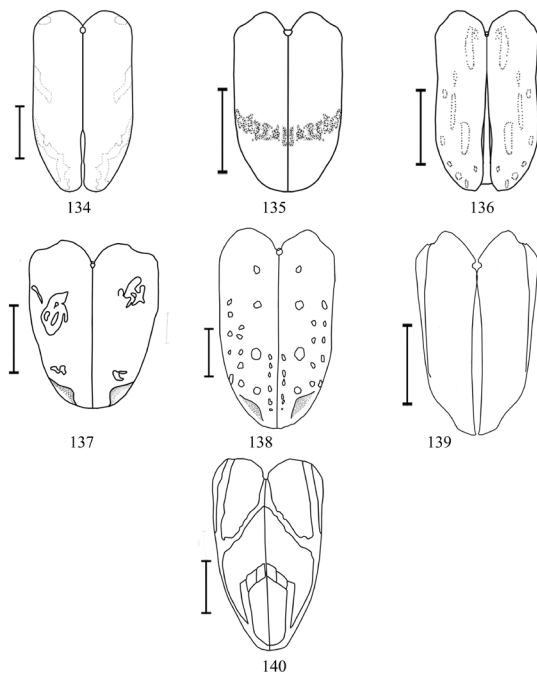
Figs. 99-112. *Tuberculomecyslobus crinalifer* Marshall, Habitus (99- 101) Male dorsal, lateral and ventral view; (102) Pronotum; (103) Antennae; (104- 105) Rostrum lateral and dorsal view; (106) Venter; (107) Foreleg; (108) Claw; (109) Venter; Male genitalia (110- 111) Aedeagus, dorsal view and lateral view; (112) Male sternites VIII and IX.



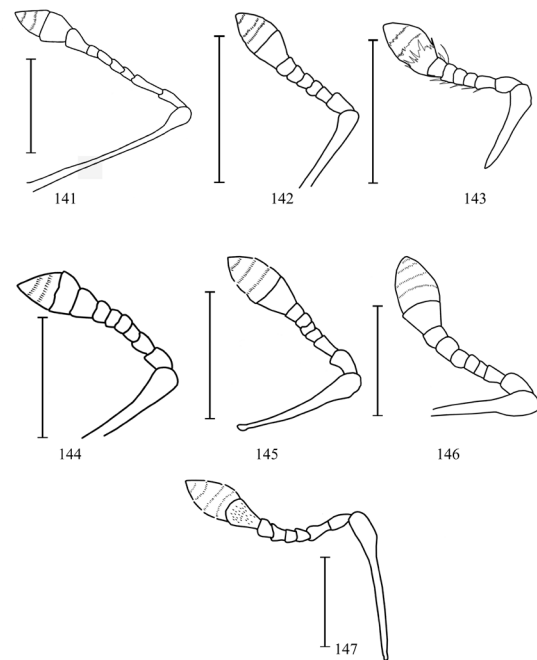
Figs. 113-126. Head, Rostrum dorsal and lateral view (113, 120) *Merus fasciatus* Gistel; (114, 121) *Brahamalcidodes micronychus* Pascoe; (115, 122) *Cylindralcides bubo* Fabricius; (116- 123) *Neomecyslobus feae* Faust; (117, 124) *Ornatalcides leopardus* Olivier; (118, 125) *Sternuchopsis pectoralis* Boheman; (119, 126) *Tuberculomecyslobus crinalifer* Marshall. Scales: 1.0 mm.



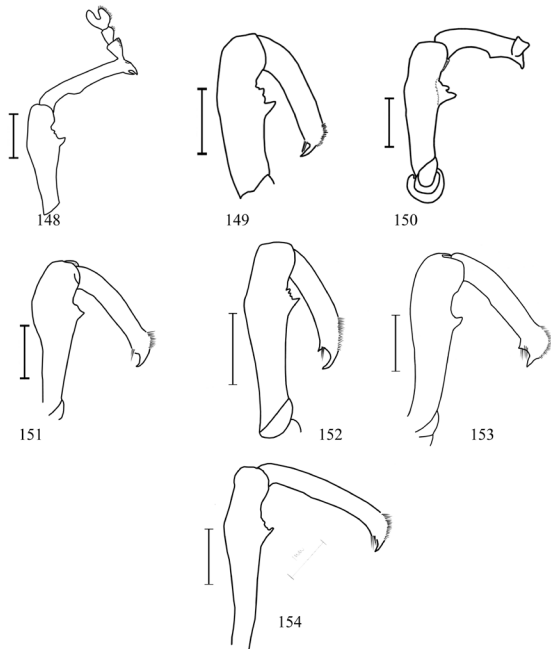
Figs. 127-133. Pronotum (127) *Merus fasciatus* Gistel; (128) *Brahamalcidodes micronychus* Pascoe; (129) *Cylindralcides bubo* Fabricius; (130) *Neomecyslobus feae* Faust; (131) *Ornatalcides leopardus* Olivier; (132) *Sternuchopsis pectoralis* Boheman; (133) *Tuberculomecyslobus crinalifer* Marshall. Scales: 1.0 mm.



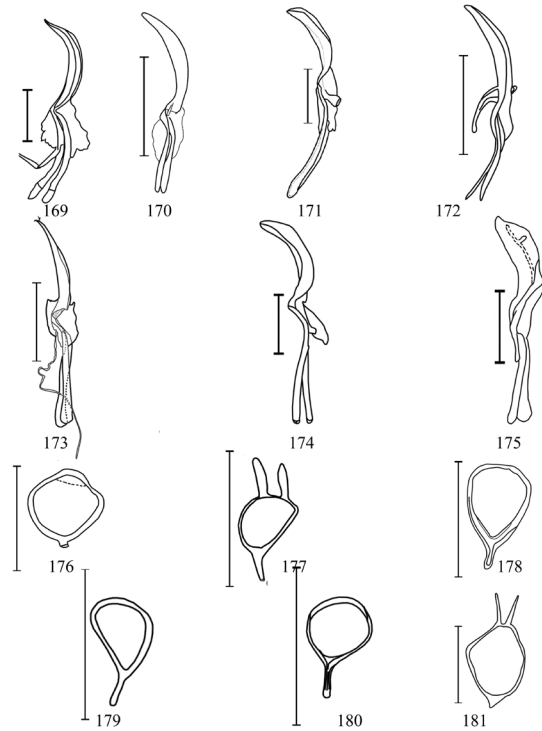
Figs. 134-140. Elytra (134) *Merus fasciatus* Gistel; (135) *Brahamalcidodes micronychus* Pascoe; (136) *Cylindralcides bubo* Fabricius; (137) *Neomecyslobus feae* Faust; (138) *Ornatalcides leopardus* Olivier; (139) *Sternuchopsis pectoralis* Boheman; (140) *Tuberculomecyslobus crinalifer* Marshall. Scales: 2.0 mm.



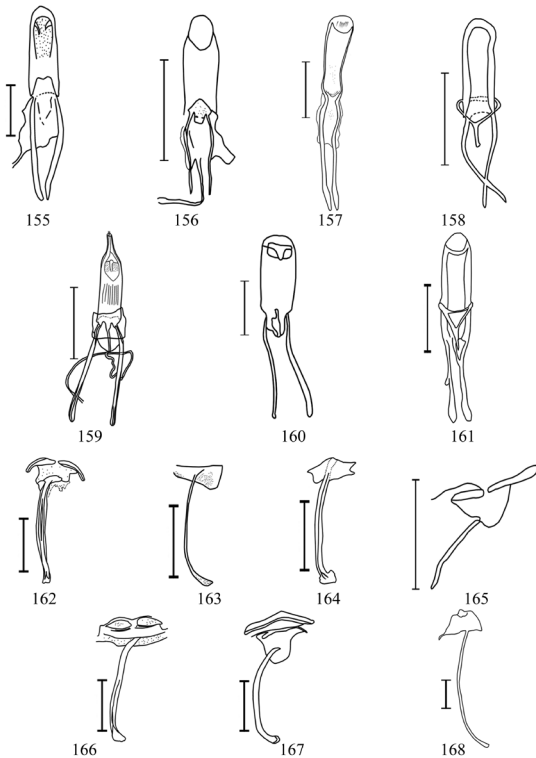
Figs. 141-147. Antennae (141) *Merus fasciatus* Gistel; (142) *Brahamalcidodes micronychus* Pascoe; (143) *Cylindralcides bubo* Fabricius; (144) *Neomecyslobus feae* Faust; (145) *Ornatalcides leopardus* Olivier; (146) *Sternuchopsis pectoralis* Boheman; (147) *Tuberculomecyslobus crinalifer* Marshall. Scales: 1.0 mm.



Figs. 148-154 Foreleg (148) *Merus fasciatus* Gistel; (149) *Brahamalcidodes micronychus* Pascoe; (150) *Cylindralcides bubo* Fabricius; (151) *Neomecyslobus feae* Faust; (152) *Ornatalcides leopardus* Olivier; (153) *Sternuchopsis pectoralis* Boheman; (154) *Tuberculomecyslobus crinalifer* Marshall. Scales: 1.0 mm.



Figs. 169-181. Male genitalia, aedeagus and tegmen (169, 176) *Merus fasciatus* Gistel; (170, 177) *Brahamalcidodes micronychus* Pascoe; (171, 178) *Cylindralcides bubo* Fabricius; (172, 179) *Neomecyslobus feae* Faust; (173, 180) *Ornatalcides leopardus* Olivier; (174, 181) *Sternuchopsis pectoralis* Boheman; (175) *Tuberculomecyslobus crinalifer* Marshall. Scales: 1.0 mm.



Figs. 155-168. Male genitalia, aedeagus and sternite (155, 162) *Merus fasciatus* Gistel; (156, 163) *Brahamalcidodes micronychus* Pascoe; (157, 164) *Cylindralcides bubo* Fabricius; (158, 165) *Neomecyslobus feae* Faust; (159, 166) *Ornatalcides leopardus* Olivier; (160, 167) *Sternuchopsis pectoralis* Boheman; (161, 168) *Tuberculomecyslobus crinalifer* Marshall. Scales: 1.0 mm.

of the rostrum with a smooth surface, widest at the apex, 1.35x as wide as frons (Figs. 104- 105).

Thorax: Transverse, 0.79-0.83x as long as wide, broadest at the base, with the sides gently rounded, shallowly constricted at the apex, 1.65-1.72x as broad as apex, covered with recumbent greyish setae, with ornamentation having longitudinal stripes on both sides, at the middle with yellowish- grey setae, covered with postocular lobes, black in colour, postocular lobes well developed (Figs. 102, 133). Scutellum heart- shaped, black (Fig. 99). Elytra elongated, less ovate, 3.34-3.40x as long as broad, 2.77-2.85x as long as rostrum, 2.83-2.92x as long, 1.43-1.52x as broad as pronotum, elytra having ornamentation with a yellowish stripe starting just before the shoulder from the base of the prothorax, continued concavely towards the apex of elytra; another yellowish stripe starting from scutellum, runs diagonally, meet the first one in midway, the third stripe is a patch of hairs starting from interval 1, 2 and 3 at a distance of 2/3<sup>rd</sup> from the elytral base, the 3<sup>rd</sup> stripe from interval 3 runs vertically towards the base of elytra, join the 1<sup>st</sup> interval just before the base (Figs. 99, 140). Foreleg femora slender, with a serrated tooth with 2- 3

teeth, femur width more at the tooth, 3.23-3.30x as long as broad with the apices of the femora, tarsi blackish; tibia with mucro well-developed, premucro absent with open type corbels, all the femora with a sharp tooth, with a row of serrated teeth (Figs. 107, 154). Abdomen: Integument blackish in colour, covered with yellowish dense recumbent setae 1.32-1.42x as long as broad, ventrite I shallow, depressed at the middle; ventrite I, 1.55-1.62x as long as II; ventrite II, 1.50-1.58x as long as ventrite III; 2.0-2.15x as long as ventrite IV; 1.38-1.42x as long as ventrite V; ventrite V broadly parabolic, convex with pointed spike-like erect setae, procoxae far from margin of prosternum, 0.41-0.45x as wide as a metacoxae; the metacoxae apart by 0.44-0.48x as wide as hind coxae, hind coxae almost reaching margin of elytra (Figs. 106, 109).

Male genitalia: Aedeagus 6.0-6.25x as long as broad, curved (Figs. 110-111); aedeagal apodeme 0.80-0.85x as long as median lobe, median lobe cylindrical, almost parallel in width from apex to the base, apex of the aedeagus membranous, and shallow, pointed (Figs. 161, 175). Sternite VIII (Fig. 112) shallow, depressed at the middle, convex, pointed on both sides at the bottom, spiculum gastrale 3.67-3.75x as long as broad 7.33-7.40x as long as sternite VIII (Fig. 168).

### Measurements (mm)

Male: SL: 12.0; SW: 3.64; PL: 2.76; PW: 3.48; EL: 6.96; EW: 4.16; RL: 3.40; RW: 0.95; HL: 1.20; HW: 1.90.

### Remarks

Antennae, funicle segment VII 1.08-1.12x longer than funicle segments I- II and separate from the club. Pronotum with ornamentations, with longitudinal stripes, covered with black postocular lobes. Elytra ornamented with stripes, covered with black postocular lobes.

### Distribution

India: Tamil Nadu.

### Material examined

1♂, INDIA: Tamil Nadu, Niligiri hills, Kallar, N11.3744°; E76.7620°, 2014m, 14.IX.1952, Coll. P. Susai Nathan.

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