

**REVIEW OF THE GENUS *LEPTOCIMBEX* SEMENOV
(HYMENOPTERA, SYMPHYTA: CIMBICIDAE)
FROM INDIA**

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ABSTRACT. - Genus *Leptocimbex* Semenov is revised from India. Three species are recognised. Described as new is *L. forsiusi*, whereas *L. potanini marginata* (Turner) is recorded for first time from India. Treatment of each taxon includes synonymy (if any), detailed description, collection data, population variation (if any) and distribution. A key is provided for all the species dealt herewith.

INTRODUCTION

The genus *Leptocimbex* was first described by Semenov (1896) but his paper went unnoticed by later workers. This resulted in redescription of *Leptocimbex* under different names by workers including Enslin (1911) and Rohwer (1915). In all these cases, only single specimens were available for study. Forsius (1926) however, noted that Semenov's (1896) name, *Leptocimbex*, has nomenclatural precedence. Nevertheless, as late as 1939, Takeuchi made another addition to this synonymy by bringing *Okamotoionus* Sato (1928) under this category.

So far this genus is represented by 11 valid species from the Oriental Region, which are contributed as follows: five species by Malaise (1939), two species by Semenov (1896), one species each by Enslin (1911), Kirby (1882), Konow (1902) and Rohwer (1915). From India only a single species i.e. *L. ariana* Kirby (1882) has previously been reported.

In the present text, three species are described which include, one that has already been reported, one as the first report and a third one as new to science. The holotype of the new species is presently in the collection of the authors and will be deposited in the Indian Agriculture Research Institute (IARI), Pusa National Collection, New Delhi, India, after this work is published.

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Genus *Leptocimbex* Semenov, 1896

Leptocimbex Semenov, 1896, Ann. Mus. Zool. St. Petersburg., p.95. (Type species: *Leptocimbex potanini* Semenov, by monotypy).

Enclavellaria Enslin, 1911. Soc. Ent. Frankfurt., XXV, p.94. (Type species: *Clavellaria formosana* Enslin, by original designation).

Cimbicisoma Rohwer, 1915. Proc. U.S. Nat. Mus., XIII, p.215. (Type species: *Cimbicisoma dendrobii* Rohwer, by original designation).

Okamotonius Sato, 1928. Ins. Mats., II, p.188 (Type species: *Okamotonius kurisuei* Sato, by original designation).

Description. - Adult.- Body slender; antennae 6-8 jointed, club distinct, 3-jointed, rarely last two joints are clearly fused, but first i.e. 6th antennal joint completely separated; mandibles and labrum very large, particularly in male; inner eye orbits parallel; the 1st cubital vein, distinctly oblique; anal cell near the middle divided by short transverse vein and conspicuously narrowed, rarely shortly constricted (Fig.1); no closed cell present; middle and hind femora unarmed below.

Distribution. - Eastern Asia (including India)

KEY TO THE SPECIES OF GENUS *LEPTOCIMBEX* FROM INDIA.

1. Metascutellum conspicuously raised with its tip in the form of spur; 1st cubital crossvein strongly oblique at an angle of 50° (Fig.3); abdomen entirely black
.....*L. forsiusi*, new species

Metascutellum subconvex with its tip not forming a spur; 1st cubital crossvein gently curved at an angle of 60° (Fig.1); broad posterior margin and deflexed sides of abdominal tergites variably reddish-brown or reddish-yellow 2

2. Labrum roundly protruding with a slight median notch in its anterior margin and with a distinct median longitudinal carina in its posterior half (Fig.8); posterior orbit surpasses the eyes about 3X diameter of median ocellus*L. ariana* (Kirby, 1882)

Labrum broadly rounded at the apex and with a distinct median longitudinal carina in its middle (Fig.9); postocellar area flat, not carinated in middle; posterior orbit surpasses the eyes about 2X diameter of median ocellus*L. potanini marginata* (Turner, 1919)

***Leptocimbex forsiusi*, new species**

(Figs. 4, 7, 10, 13)

Material. - Holotype - female, Uttar Pradesh, Gopeshwar, Chopta - 3000 m, 19.vi.1989.

Description. - Female: body length, 11 mm.

Colour of body black, luteous are: mouthparts except mandible tip, clypeus, supraclypeal area, outer orbits, scape pedicel, irregular spot on anterior aspect of apical 1/3 of femora, inner

side of protibiae, distal tips of all tibiae and tarsi entire; wings yellowish hyaline with costal margin of front ones distinctly infuscated from base to apex; costa, stigma and venation fuscous.

Antenna (fig. 4) 7 segmented, 1.4X head width; scape as long as its apical thickness, pedicel broader than long and its maximum thickness is equal to the apical thickness of fourth joint, third segment 2.3X fourth segment, fourth and fifth segments subequal, club of antenna formed by the sixth and completely fused seventh and eighth segments, club shorter than fourth and fifth segments combined, its maximum thickness is 2.3X apical thickness of fourth joint; clypeus (fig. 7) sub-rectangularly incised upto 1/4 of its median length with truncate lateral teeth; labrum large, broadly rounded at the apex, with an inconspicuous median notch, without median carina; malar space 4X diameter of median ocellus; supraclypeal furrow absent; supraclypeal area flat; lower margin of eyes well below the level of antennal sockets; LID : IDMO : EL = 4 : 4 : 3.6; eyes parallel; head without postgenal carina; frontal area sunken and considerably below the level of eyes; supraantennal tubercles slightly raised, slightly sloping posteriorly and confluent with distinct frontal ridges arising from lateral ocelli; at the level of median ocellus the continuity of frontal ridges is interrupted by oblique groove/depressions; anteriorly closed median fovea is quite distinct, deep, particularly at the level of antennae where it is abruptly sunken to form a deep pit of the size of pedicel, posteriorly it is somewhat shallow still reaching median ocellus; supraorbital line at the level of postocellar furrow; circum-, inter- and postocellar furrows distinct, lateral furrows almost parallel, deep and abruptly sunken before reaching hypothetical posterior margin of head; postocellar area convex, with a weak longitudinal middle carina, longer than broad in ratio 1.2 : 1; OOL : POL : OCL = 1.8 : 1 : 3.4; posterior orbit surpasses the eyes about 2.5X diameter of median ocellus; 2nd transverse cubital vein straight, 1st strongly oblique at an angle of 50° (fig. 3) second cubital cell is slightly longer on radius than on cubitus; mesoscutellum subpyramidally raised with quite steep anterior and posterior slopes, lateral carina conspicuous only in its anterior 1/3 region; metascutellum conspicuously raised, spear shaped with its tip in the form of spur; ICD : ITD = 2 : 5.5; mesopleuron with a blunt carina which is more distinct along its convexity; propodeum with a distinct median carina; length of metabasitarsus versus the 3 following segments combined is in ratio 3 : 5; claw simple; IATS : MB : OATS = 1 : 1.9 : 1.1; abdominal tip roundly pointed (fig. 10).

Lancet (fig. 13) with 61 serrulae, AST = 3 in 4th, 5th and 17th, 18th serrulae; PST = 3 and 4 in 4th, 5th and 17th, 18th serrulae respectively.

Head (except supraclypeal area and outer orbits) and mesonotum very minutely, densely and uniformly punctured with dull general lustre; mesoscutellum subshining with large scattered punctures; head below antennae and outer orbits almost not punctured but with a general oily lustre; propodeum not punctured, highly smooth and polished; all abdominal tergites with very minute uniform and dense punctures, dull.

Body covered with sparse pubescence almost of the size of pedicel and scape combined.

Male. - Unknown

Distribution in India. - Uttar Pradesh.

Diagnostic combination and remarks. - This species does not run in Malaise's (1939) or in Gussakovskij's (1947) keys to the world species of this genus. However, because of its unique black colouration of abdomen, it is somewhat related to *L. rufo-niger* Malaise from which it can

be separated as follows: In this species ground colour of head, thorax and propodeum black (all these regions reddish-brown in *L. rufo-niger*), clypeus and supraclypeal area luteous (lemon yellow in *L. rufo-niger*), antenna with 7 & 8 joints completely fused (distinct in *L. rufo-niger*) propodium not punctured, highly smooth and polished (propodeum with strong micropunctuation in *L. rufo-niger*).

Etymology. - This species has been named in honour of the late P. Forsius, a well known Swedish sawfly worker.

***Leptocimbex ariana* (Kirby, 1882)**

(Figs. 5, 8, 11, 14, 16, 17)

Cimbex ariana: Kirby, 1882, List. Hym. Brit. Mus., I p.6.

Leptocimbex ariana: Malaise, 1939, Ent. Tidsk., 60, p.3.

Material examined. - Holotype - female, (B.M. Type 1.52 *Cimbex ariana* 70 (45) BMNH, London); Himachal Pradesh, India - 3 females, 5 males, 2150 m, Dhundi, 17.vi.1988; 3 females, 2 males, 2200 m, Kothi, 11.vi.1988; 3 females, 2000 m, Manali, 20.vi.1982; 2 females, 1 male, 2700 m, Narkanda, 24.v.1984; 3 females, 5 males, 2300 m, Solang, 14.vi.1988. --- Uttar Pradesh, India - 2 females, 1 male, 3000 m, Gangaria; 2 females, 2 males, 2400 m, Mandal, Gopeshwar, 19.vi.1988.

Description. - Female: Average body length, 8 mm.

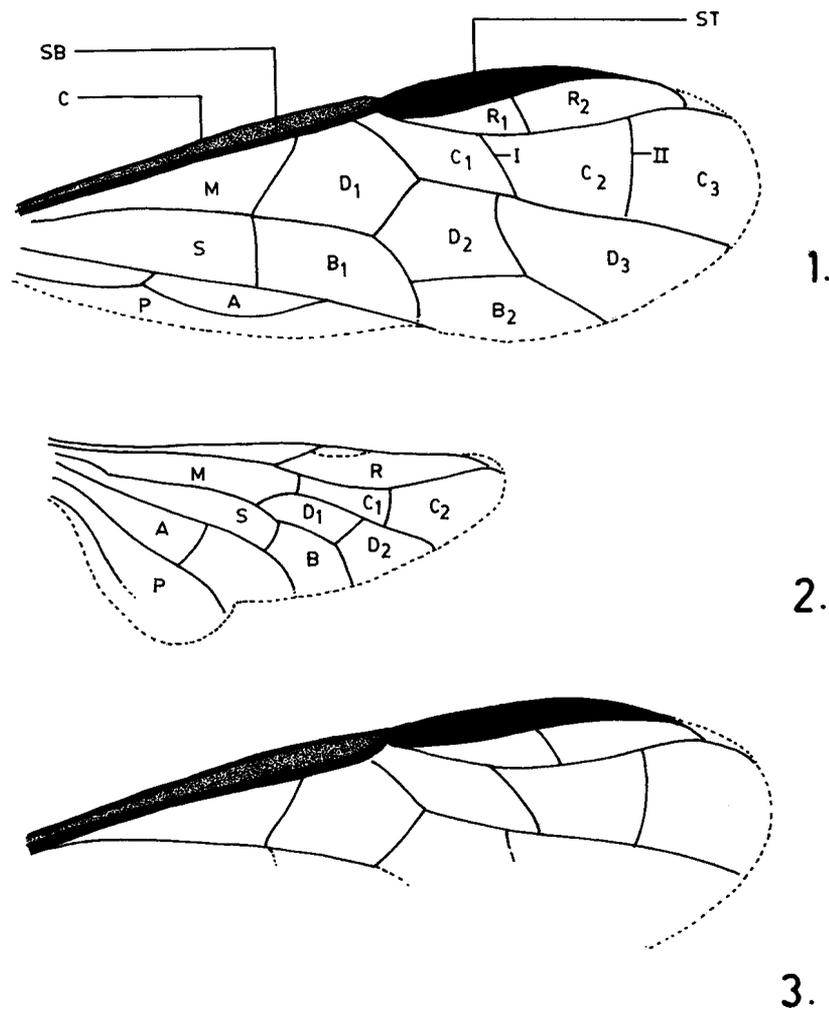
Colour of body black with faint bluish tinge, reddish-yellow are: antennae, mouthparts, head below antennae and eyes, distal half of tegula, a stripe along extreme posterior margin of pronotum, two distal spots on 2nd tergite confluent in middle, broad posterior margin of 3rd, terga 4-7 entire except a triangular spot along their anterior margins, 8th one entire, all tibiae and tarsi; propodeum lemon yellow except its extreme anterior margin; forewing yellowish hyaline, somewhat darker towards base and along costal margins, hind wing hyaline; costa, stigma and venation dark yellow to dark brown.

Antenna (fig. 5) 7 segmented, 1.2 X head width, scape 2X pedicel, third segment nearly 2.5X fourth segment, club of antenna formed by the sixth and completely fused seventh & eighth segments, club equal to fourth and fifth segments combined and its maximum thickness is twice the apical thickness of fourth joint, sixth joint longer than its apical width; clypeus (fig. 8) roundly and shallowly incised upto 1/4 of its median length, with blunt lateral teeth; labrum roundly protruding with a slight median notch in its anterior margin; malar space 3X diameter of median ocellus; supraclypeal furrow in the form of shallow depression; supraclypeal area almost flat; lower margin of eyes well below antennal sockets; LID : IDMO : EL = 4 : 4 : 3.5; eyes parallel; head without postgenal carina; frontal area slightly below the level of eyes; supraantennal tubercles slightly raised and confluent behind with similar frontal ridges; median fovea in the form of distinct seam widened just anterior to median ocellus; supraorbital line at the level of postocellar furrow; circum-, inter- and postocellar furrows distinct; lateral furrows distinct, slightly diverging posteriorly; postocellar area convex, bluntly carinated in middle, as broad as long (breadth as in the middle of postocellar area); OOL : POL : OCL = 2.5 : 1 : 3.8; posterior orbit surpasses the eyes about 3X diameter of median ocellus; in forewing 2nd transverse cubital vein straight, 1st oblique (fig. 1); mesoscutellum roundly raised with distinct anterior slope, extremely blunt lateral carina and with weakly carinated tip; ICD : ITD = 2 : 6;

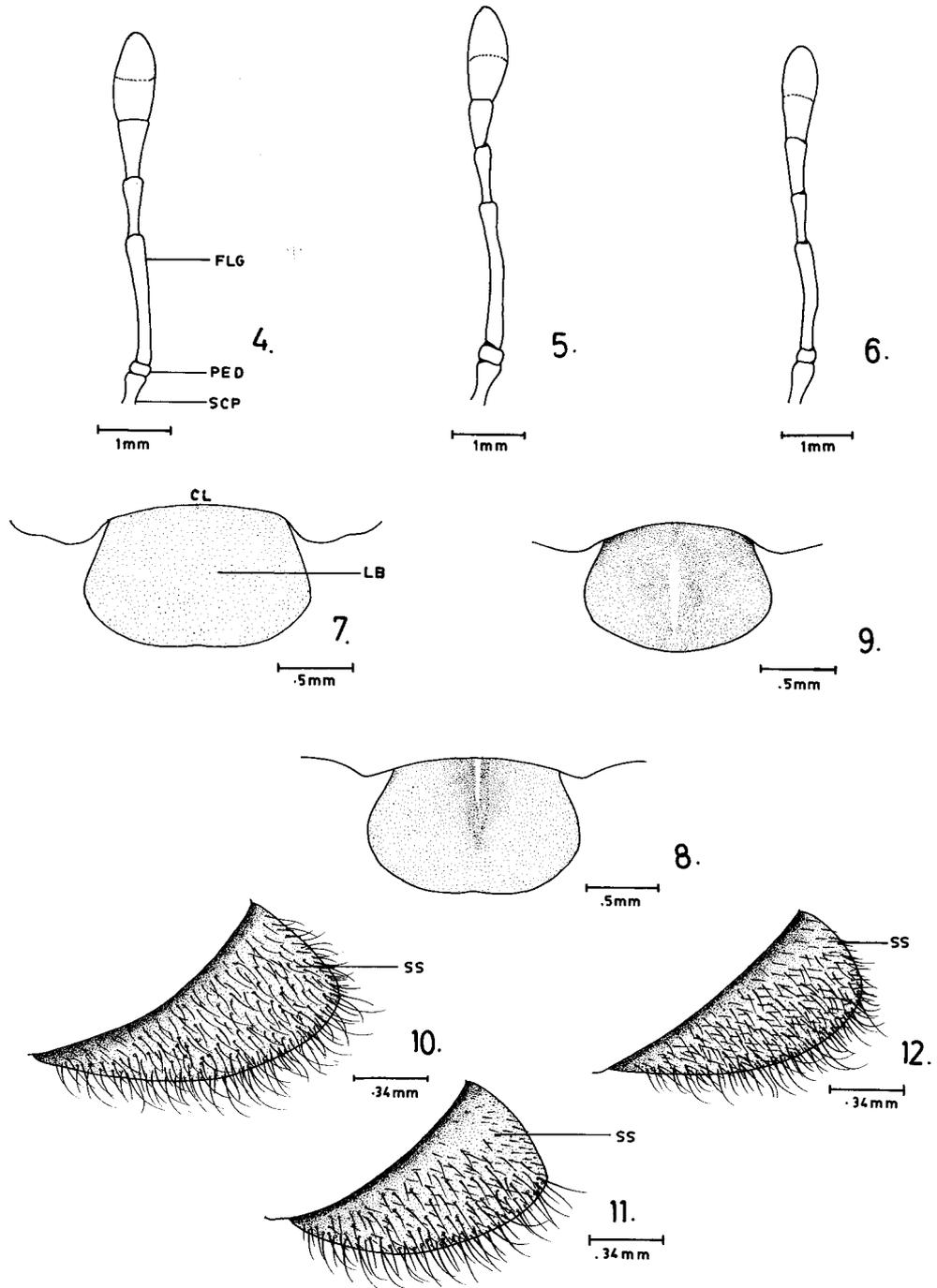
mesopleuron with blunt carina below which is more distinct along its convexity; propodeum without any carina in its centre; length of metabasitarsus versus three following segments combined is in ratio 3 : 4.5; claw simple; IATS : MB : OATS = 1 : 1.8 : 08; abdominal tip bluntly pointed (fig. 11).

Lancet (fig. 14) with 57 serrulae, AST = two and four in 4th, 5th and 17th, 18th serrulae respectively; PST = four in 4th, 5th and 17th, 18th serrulae.

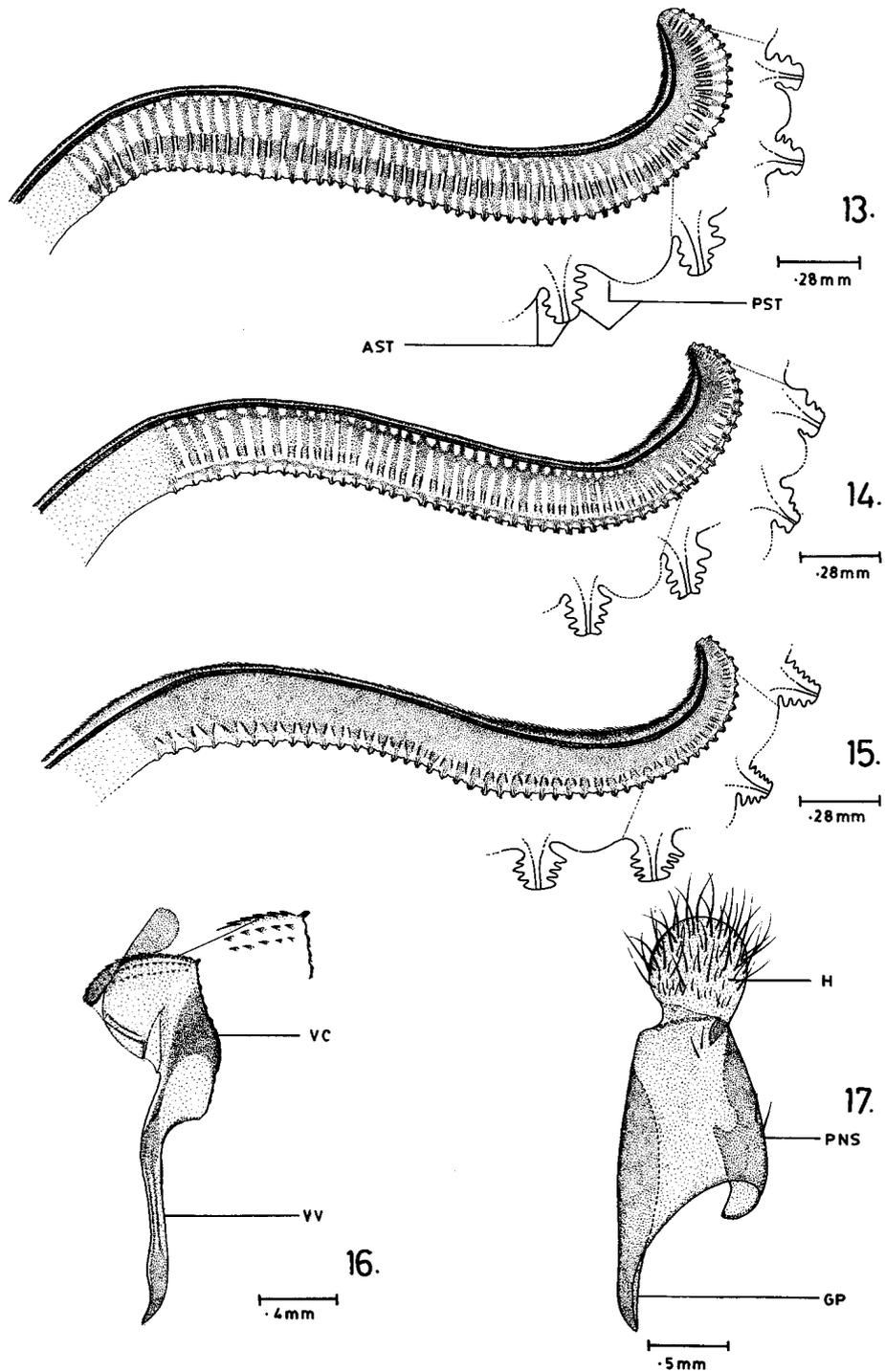
Head except supraclypeal area, pronotum, mesonotum, mesopleuron very finely, uniformly punctured, dull; mesoscutellum strongly polished with large punctures more so towards its lateral and posterior slopes; all tergites with very minute and uniform punctures, dull, sternites almost not punctured.



Figs. 1-3. 1, forewing in *Leptocimbex ariana*; 2, hindwing in *Leptocimbex ariana*; 3, forewing in *L. forsiusi*. (A = Anal cell; B = Brachial cell; C = Costa; C₁....4 = Cubital cells; D = Discoidal cell; M = Median cell; R = Radial cell; S = Submedian cell; SB = Subcosta; ST = Stigma).



Figs. 4-12. 4, antenna of *L. forsius*; 5, antenna of *L. ariana*; 6, antenna of *L. potanini marginata*; 7, clypeus and labrum of *L. forsius*; 8, clypeus and labrum of *L. ariana*; 9, clypeus and labrum of *L. potanini marginata*; 10, lateral view of the abdominal tip of *L. forsius*; 11, lateral view of the abdominal tip of *L. ariana*; 12, lateral view of the abdominal tip of *L. potanini marginata*. (CL = Clypeus; FLG = Flagellum; LB = Labrum; SCP = Scape; SS = Sawsheath; PED = Pedicel).



Figs. 13-17. 13, lancet of *T. forsiusi*; 14, lancet of *T. ariana*; 15, lancet of *T. potanini marginata*; 16, penis valve of *T. ariana*; 17, gonoforceps of *T. ariana*. (AST = Anterior subbasal tooth; GP = Gonostipes; PNS = Parapennis; PST = Posterior Subbasal tooth; VC = Valviceps; VV = Valura; I, II = 1st, 2nd Cubital cross-vein).

Body sparsely covered with black pubescence.

Male: Average body length, 12 mm. Similar to female except sexual segments.

Male genitalia: Penis valve (fig. 16), Gonoforceps (fig. 17).

Holotype Depository: BMNH, London.

Population variation: In some specimens black colour extends over second and third abdominal tergites also.

Distribution in India. - Himachal Pradesh, Uttar Pradesh.

Diagnostic combination and remarks. - This species is easily identified by available keys of Malaise (1939) and Gussakovskij (1947) on account of the presence of front wings yellowish hyaline not infuscated along the anterior costal margin. Labrum and clypeus almost black.

***Leptocimbex potanini marginata* (Turner, 1919)**

(Figs. 6, 9, 12, 15)

Clavellaria marginata: Turner, 1919. Ann. Mag. Nat. Hist., (9) 5, p.95.

Leptocimbex potanini marginata: Malaise, 1939. Ent. Tidsk., 60, p.7.

Material examined. - 3 females, 3000 m, Chopta, Gopeshwar, Uttar Pradesh, India, 19.vi.1989; 2 females, 3000 m, Mandal, 20.vi.1989; female, *Leptocimbex potanini* bearing No. 699 (1982) determined and sent by Dr Xiao Gangrou on loan basis.

Description. - Female: Average body length, 16 mm.

Colour of body black with coppery reddish tinge, reddish, brown are: 1-4 antennal segments, basal 1/3 of fifth segment, mouthparts, clypeus, supraclypeal area, tegula, posterior border of pronotum, mesoscutellum and ridges lateral to it, broad posterior margin and deflexed sides of terga 2-7, distal tip of all coxae, and entire trochanters, femora, tibia and tarsi; forewings yellowish hyaline, anterior margin on and along the costa distinctly infuscated from base to apex, hind wings light yellowish hyaline; costa, stigma and venation dark reddish brown.

Antenna (fig. 6) 8 segmented, 1.5X head width, scape distinctly swollen in its anterior half, 2.5X pedicel, pedicel bead like, 3rd segment nearly 2.5X fourth segment, fourth and fifth segments almost of equal length; club of antenna formed by the fusion of sixth, seventh and eighth segments, club almost equal to fourth and fifth segments combined and its maximum thickness is twice the apical thickness of fourth joint; sixth joint longer than its apical width; clypeus (fig. 9) roundly, but shallowly emarginated upto 1/3 of its median length, with truncate lateral teeth; labrum large broadly rounded at the apex, with a distinct median longitudinal carina; malar space 3.8X diameter of median ocellus; supraclypeal furrow absent; supraclypeal area flat; lower margin of eyes below the level of antennal sockets; LID : IDMO : EL = 4 : 4 : 3.5; eyes parallel; head without postgenal carina; frontal area slightly below the level of eyes; supraantennal tubercles distinctly elevated with a steep posterior slope and confluent with very

low frontal ridges; median fovea distinct, deep, ditch like, closed anteriorly and posteriorly reaching median ocellus; supraorbital line at the level of lateral ocelli; circum-, inter- and postocellar furrows distinct; lateral furrows distinct, diverging posteriorly; postocellar area flat as broad as long (breadth as in the middle of postocellar area) OOL : POL : OCL = 2.2 : 1 : 3.5; posterior orbit surpasses the eye about 2X diameter of median ocellus; in forewing second transverse cubital vein straight, 1st one gently oblique mesoscutellum distinctly raised with steep anterior and posterior slopes and with shallow longitudinal groove, extreme lateral carina of scutellum reaches only half way of its posterior tip; metascutellum subconvex; ICD : ITD = 1 : 3; mesopleuron with a blunt carina below, which is more distinct along its convexity; propodeum with a distinct median carina in its centre; length of metabasitarsus versus the three following segments combined is in ratio 3 : 5; claw simple; IATS : MB : OATS = 1 : 2.3 : 0.8; abdominal tip rounded (fig. 12).

Lancet (fig. 15) with 50 serrulae, AST = four in 4th, 5th and 17th, 18th serrulae, PST = six and four in 4th, 5th and 17th, 18th serrulae respectively.

Head except supraclypeal area and thorax except mesoscutellum are very densely minutely and almost uniformly punctured, still shining; mesoscutellum densely macropunctured, surface between punctures shining; propodeum scatteredly micropunctured, polished; abdomen with extremely minute, dense and regular punctures, surface dull.

Body sparsely covered with mixed black and silvery pubescence.

Male: Unknown

Holotype Depository: BMNH, London

Population variation: None noted

Distribution in India. - Uttar Pradesh

Diagnostic combination and remarks. - This subspecies runs smoothly in Malaise's (1939) key. Turner (1919) described this as a distinct species, but Malaise (1939) consider it as subspecies of *L. potanini* Semenov, 1896, because in most of the key characters it resembles *L. potanini*, but differs from the latter as longitudinal half of coxae, trochanters and femora yellow in *L. potanini* (all these are reddish-brown to black in this sub-species). Moreover species and subspecies belong to different geographical localities that are widely separated.

This is the first record of this species (and sub-species) from India.

Acknowledgements. - The authors are indebted to Dr D.R. Smith (U.S. Department of Agriculture, Washington) for his valuable suggestion and confirming the generic status of new species. We are also thankful to Dr N.D. Springate (BMNH, London) for lending the type of *Leptocimbex ariana*. Financial assistance rendered by the CSIR, New Delhi is also gratefully acknowledged.

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