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A new genus *Punctodensus* from North Western Ghat, Maharashtra, India (Coleoptera: Elateridae: Agrypninae: Hemirrhini)

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ABSTRACT. New genus *Punctodensus* is described. The genus is established on the basis of two species: *P. bifoveatus* and *P. indicus* collected from North West Ghats, Maharashtra state. In India *Chalcolepis* CANDEZE, 1857, *Eumoeus* CANDEZE, 1857 and *Tetrigus* CANDEZE, 1857 are reported from the subfamily Hemirrhini. The *Punctodensus* is separated from the above genera by having single and dense punctation; second antennomere distinctly shorter than third and presence of tibial spurs. The genus name is based on dense punctation on the body.

Kew words: entomology, taxonomy, new genus, new species, Elateridae, Hemirrhini, India, NW Ghats.

Three genera, namely *Chalcolepis* CANDEZE, 1857, *Eumoeus* CANDEZE, 1857 and *Tetrigus* CANDEZE, 1857 have been reported from India in the subfamily Hemirrhini. VATS (1992) described *Chalcolepis pannus*, *C. rotundoextremus*, *C. kashyapi* and *Tetrigus submontanus* from North India. A new genus *Punctodensus* is described in present paper with two species: *P. bifoveatus* and *P. indicus* collected from NW Ghats. North western Ghats is one of eight highly biodiverse hotspots in the world. *Chalcolepis* CANDEZE is characterized by scales on body, simple pronotosternal sutures, tibial spurs absent and elytra with truncated apex. *Tetrigus* CANDEZE is characterized by pubescence on the body, double pronotosternal sutures, tibial spurs present and pectinate antennae. *Eumoeus* CANDEZE is characterized by having pubescence and not the scales on the integument, very short and 12 segmented antennae, antennomeres third to twelve bi-lamellate, pronotosternal sutures closed, long legs, tarsi flattened.

This genus is represented by only one species, *E. murrayi* CANDEZE (1874). This species was collected from 'Madras' (now Chennai).

The genus *Punctodensus* shows an unique combination of characters that justifies its description as new.

***Punctodensus* gen. nov.**

ETYMOLOGY

The new genus is erected because of its distinct and unique punctuation. The name *Punctodensus* refers to dense punctuation. Masculine.

DESCRIPTION

Body elongate. Sides of the body almost parallel, tapering posteriorly to rounded apex. Scales absent. Pubescence yellow, long. Punctuation random, round-hexagonal. Head inclined with anterior margin concave. Head width including eyes slightly less than thoracic width. Frons slightly depressed with frontal carina incomplete, carinate over antennal insertions only. Eyes large, bulging, round, superficial facets visible. Labrum simple. Mandibles simple. Maxillary palpi long; terminal segment hatchet shaped. Antennae serrate, with eleven antennomeres. Antennal insertions slightly flushed, embedded in oval socket, obliquely carinate above. Vestiture begins on the fourth antennomere. Second antennomere smaller than third. Third antennomere smaller than the fourth. Fourth antennomere longer and broader than fifth. Fifth broader than sixth. 11th longer and slender than tenth and broadly constricted near apex. Each antennomere is narrower than preceding. Pronotum longer than broad with anterior angles moderately produced, angles covering less than quarter of an eye at most. Hind angles of the pronotum long divergent, apex truncate, unicarinate; carinae parallel to lateral carina; reaching middle of pronotum. Lateral carina complete reaching anterior margin of pronotum. Scutellum oblong. Prosternum broad anteriorly; produced to form well developed chin plate. Mesosternum distinct from metasternum. Mesocoxal cavity open to both mesosternum and mesepimeron. Metasternum truncate between mesocoxae. Tibial spur present. First tarsomere size Pro < Meso < Meta. Tarsomere length 1 > 5 > 2 > 3 > 4. Metatarsi longer than metatibia. Claws simple with setae emerging from outer lateral surface. Hind wing well developed, wedge cell absent.

Type species: *Punctodensus indicus* n. sp.

DIAGNOSIS

Punctodensus differs from other genera in the subfamily as follows: a) it differs from *Eumoeus* Candeze by having eleven antennomeres while the latter has twelve, b) *Punctodensus* has serrate antennae while *Tetrigus* CANDEZE has pectinate antennae, c) it has two tibial spurs while *Chalcolepis* CANDEZE lacks them.

It appears close to *Lanelater* ARNETTE 1952, but differs by pronotosternal sutures slightly open anteriorly but not deep to accommodate antennae as in *Lanelater*; tibial spurs present which are absent in *Lanelater*; metatarsi distinctly longer than the metatibia, which is subequal to the metatibia as in *Lanelater*; median lobe of male genitalia

distinctly longer than the parameres, which is distinctly shorter than the parameres in *Lanelater*.

KEY TO SPECIES

1. Pronotum darker than the elytra; without foveae *indicus* n. sp.
- . Pronotum and elytra of same color; with two foveae in posterior quarter
..... *bifoveatus* n. sp.

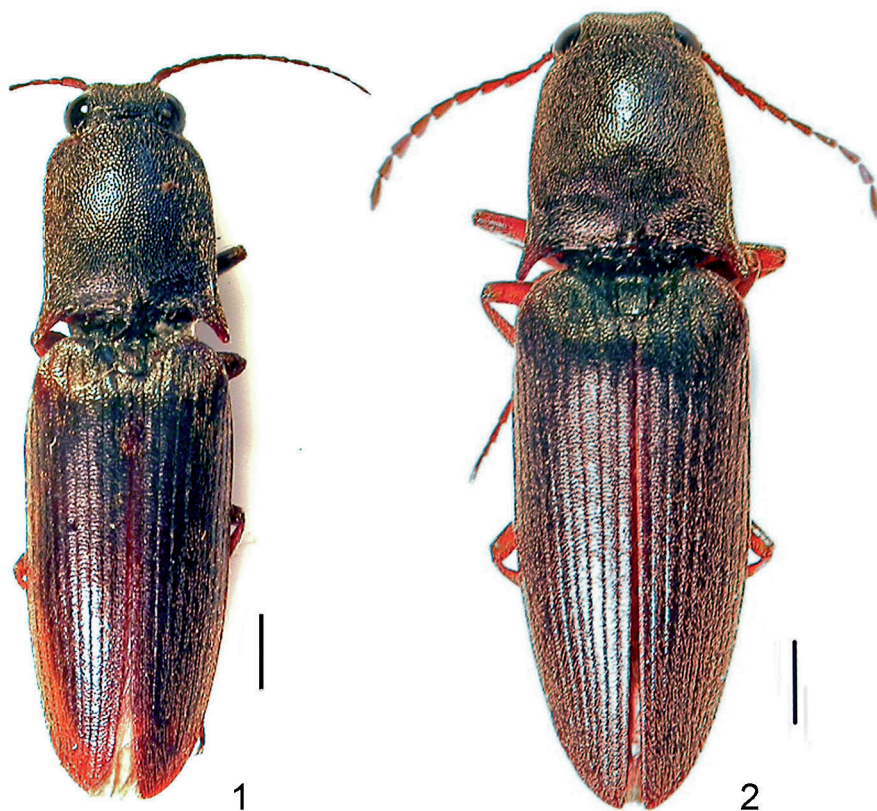
DESCRIPTION OF SPECIES

***Punctodensus indicus* n. sp.**

(fig. 1)

DESCRIPTION

Male is 14.5 mm long and 3.5 mm wide. Female unknown.



1, 2. Dorsal habitus: 1 – *Punctodensus indicus* n.sp., 2 – *Punctodensus bifoveatus* n.sp. Scale 1.0 mm for both

Body: Deep brown. Pronotum black brown. Elytra brown.

Head: Black. Eyes jet black, large, bulging, round, superficial facets visible. Labrum brown, short, densely pubescent, punctate. Mandibles deep brown, simple, blades blunt. Maxillary palpi deep brown, terminal segment obliquely truncate.

Antennae (Fig. 3): Brown, serrate, not reaching hind angles, 11th antennomere longer and more slender than tenth and broadly constricted near apex; antennomere broader than that of *P. bifoveatus* n.sp. Each segment is narrower than preceding.

Pronotum (fig. 5): Dark brown black, distinctly darker than elytra. Disc with median longitudinal depression. Hind angles long divergent, pointed, unicarinate, carinae almost reaching anterior margin of thorax, parallel to lateral carina.

Scutellum (fig. 6): Strongly deflexed anteriorly, oblong, sides parallel. Anterior margin black, arcuate. Posterior margin broadly rounded.

Prosternum (fig. 7): Broad anteriorly. Two carinae on prosternum between procoxae, carinae continue towards apex of the prosternal projection.

Mesosternum: Sides of cavity gradually tapering, ending posteriorly in blunt apex; cavity reaching more than mid of mesocoxae.

Metasternum: Metaventral discrimen distinct in posterior half, indistinct in anterior half. Metasternum projecting between metacoxal plates.

Metacoxal plates (fig.8): Rounded in middle. Anterior margin anteriorly oblique, slightly concave in proximal half. Posterior margin straight. Posterior angles broad, rounded. Plates gradually narrowing outward.

Legs: Brown. Femora with both sides almost parallel. Tibia brown, narrow at base, bent slightly at base, outer margin with row of yellow orange spines; apically with spiniform setae and two dark tibial spurs. Tibial inner margin with row of spines. First tarsomere size Pro < Meso < Meta. Tarsomere length $1 > 5 > 2 > 3 > 4$. Tarsomeres truncate distally and without spongiose pads below; row of spines on inner and outer side like tibia. First to fourth antennomeres with spiniform setae apically. Tarsi finely pubescent and punctate. Fifth tarsomere narrow at base, arising from lateral angle of fourth tarsomere. Claws (fig. 12) large, blades broad, brown, uniformly curved, with setae at base.

Male genitalia (figs 13, 14): Moderately sclerotized. 0.555 X of total abdominal length. Median lobe longer than parameres, slender, apex rounded without setae. Parameres broad at base, apex obliquely truncate, with subapical lateral projection. Apex blunt. Long slender setae at apex and outer margin. Notched broadly behind subapical process. Outer margin of parameres slightly concave in middle. Parameres articulate in short conical conjuncture. Basal struts short, projecting slightly beyond anterior margin of parameres. Basal piece 0.302 X of total genitalia length. Sides parallel for more than posterior half, tapering anteriorly, truncate anteriorly.

Female Unknown.

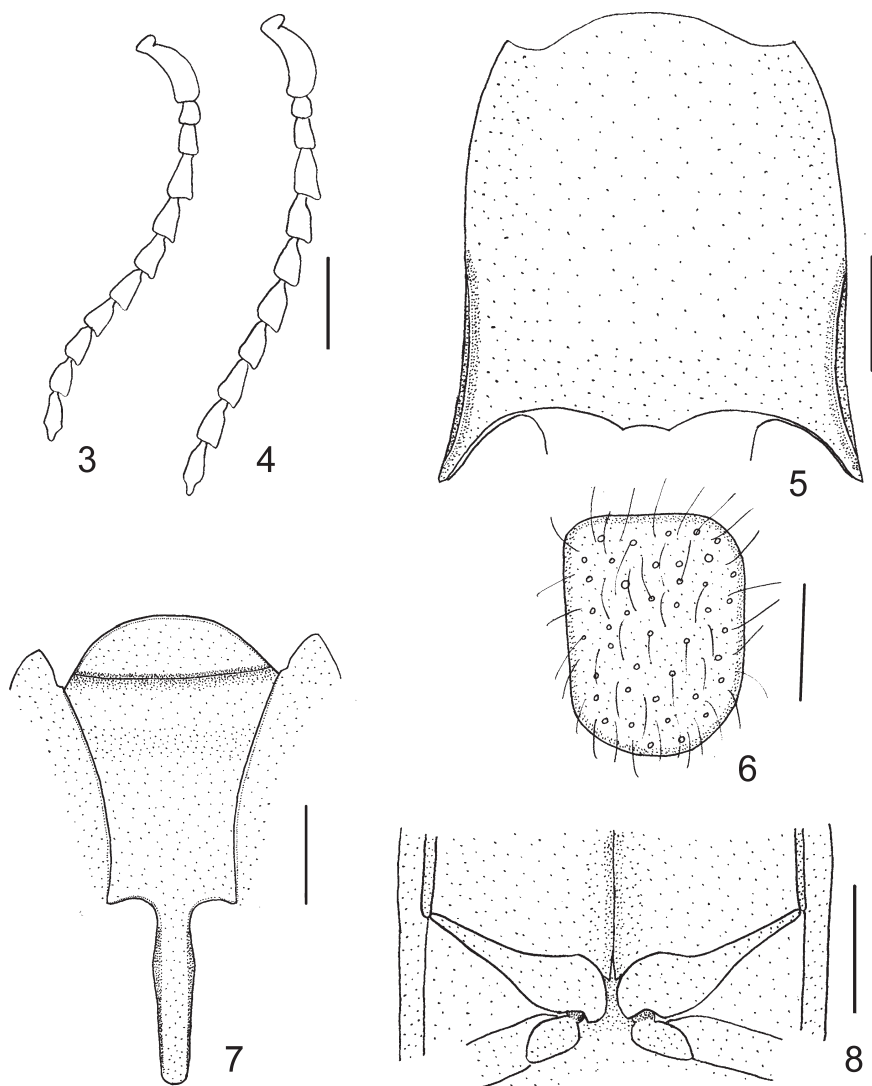
Wing (fig. 11): Width 0.411 X of total length. Apical lobe indistinct without apparent venation. Wedge cell absent. R cell length 5.25 X of breadth. r4 apparent crossvein 0.3 X of R cell length. Wing fold at apical fold, MP 1+2, AP1+2. Margins of wing finely serrate. Apical lobe with two long, curved sclerotizations in 'c' shape. Anal lobe indistinct.

ETYMOLOGY

The species is named *indicus* because it is the first species of the newly erected genus from India. Masculine.

MATERIAL EXAMINED

Holotype: Male on black light; 2 vi 2002; at Yeoor, Thane District, Maharashtra state, India. Paratype; Male 25 vi 2003; the same collection site as of holotype.



3, 4. Antennae: 3 – *Punctodensus indicus* n.sp., 4 – *Punctodensus bifoveatus* n.sp. 5-8. *Punctodensus indicus* n.sp.: 5 – pronotum; 6 – scutellum; 7 – prosternum; 8 – metacoxal plates (Scale 1.0 mm (scale 3, 4, 5, 7, 8 – 1 mm, 6 – 0.3 mm))

REMARKS

The specimen was hand collected from the leaves of *Terminalia tomentosa* (Family Combretaceae) in dry deciduous forest of Yeoor area, district Thane. The beetle was active flier. Both the specimens are deposited at the Research Laboratory, Department of Zoology, B.N. Bandodkar college of science, Thane, Maharashtra, India.

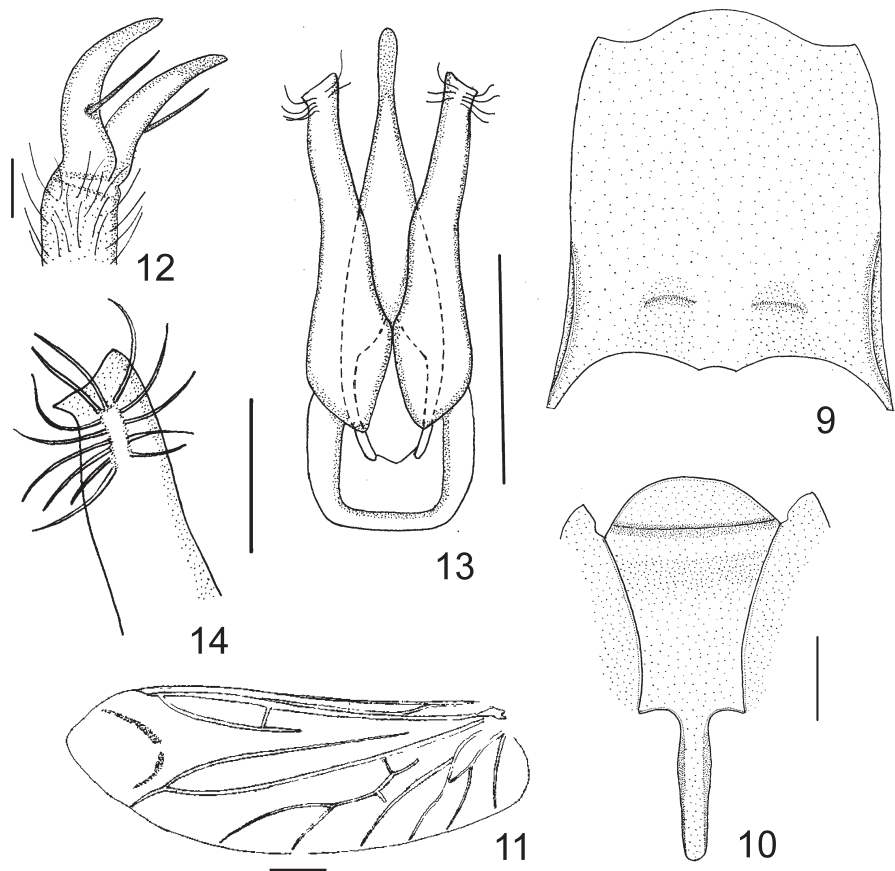
Punctodensus bifoventus n. sp.

(fig. 2)

DESCRIPTION

Female 15 mm long and 4.3mm broad. Male unknown.

Body: Brown, covered by long yellow pubescence.



9, 10. *Punctodensus bifoventus* n.sp.: 9 – pronotum, 10 – prosternum; 11-14. *Punctodensus indicus* n.sp.: 11 – hind wing, 12 – mesothoracic claws, 13 – male genitalia, dorsal view, 14 – top of paramere (scale 9, 10, 11, 13 – 1.0 mm, 12 – 0.1 mm, 14 – 0.2 mm)

Head: Partially covered by pronotum. Eyes large, round, bulging; with golden tinge in living specimen; facets not visible. Labrum brown, punctuation dense, yellow, long, very dense pubescence, anterior margin entire, arcuate.

Antennae (fig 4): Light brown, reaching apex of hind angles. 11th antennomere narrower, longer than tenth, broadly constricted at middle, apex long, broadly round.

Pronotum (fig.9): Slightly convex dorsally, deflexed anteriorly, strongly declivous posteriorly in posterior third. Two lateral, transverse foveae on either side of midline in posterior quarter.

Prosternum (fig. 10): Decidedly broader than *P. indicus* n.sp. anteriorly. Prosternal process very long brown, more than 1.5x of procoxal diameter posterior to procoxae, ventrally deep longitudinal groove, sides gradually tapering, apex blunt.

Mesosternum: Sides of mesosternal cavity gradually tapering, posteriorly ending in blunt apex. Cavity reaching mid of mesocoxae.

Metasternum: Metaventral discripen complete from posterior to the anterior margin of metasternum.

Metacoxal plates: Posterior angles very broad, rounded.

Legs: Orange brown. Profemoral anterior margin black carinate, arcuate. Meso and metafemur with both sides almost parallel. Tibia brown, outer margin with row of yellow orange spines, spiniform setae apically. Tibial spurs two, dark. Tibia inner margin with row of spines. Row of spines on inner and outer side like tibia. Tarsomeres truncate distally with spiniform setae apically; ventrally indistinct spongiöse pads. Claws large, color same as rest of leg, blades broad, brown, uniformly curved, black at tip; with setae arising from outer flat portion.

Male genitalia: Not available.

ETYMOLOGY

The specimen was named *bifoveatus* because of two distinct transverse foveae in hind quarter of pronotum.

MATERIAL EXAMINED

Holotype: Female on black light; 3 vi 2005; at National chemical laboratory campus, Pune city, District Pune, Maharashtra state, India. Paratype; Female 3 vi 2005; the same collection site as of holotype.

REMARKS

The specimen was collected in June 2005 at National Chemical Laboratory campus, Pune City, under white light, on the fence. The weather was rainy, cool. The specimen was found along with other species of elaterids like *Lanelater* sp., *Agrypnus* sp. and *Adelocera* sp.

Both specimens are deposited at the Research Laboratory, Department of Zoology, B.N. Bhandarkar college of science, Thane, Maharashtra, India.

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