

**ON A COLLECTION OF PASSALIDAE AND LUCANIDAE (INSECTA :
COLEOPTERA) FROM ARUNACHAL PRADESH, INDIA**

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INTRODUCTION

The Passalidae and Lucanidae are sharply defined small families of the superfamily Lamellicornia (Scarabaeoidea). The representatives are generally heavily built with shining ribbed bodies of Passalidae and anteriorly projected large mandibles of Lucanidae, and lamelliform antenna of both differentiate them from other beetle groups. Although phylogenetically not closely related, they were earlier treated under a separate group, Pectinicornia. The representatives inhabit greater part of their lives in rotting wood. The adult lucanids are however not at all xylophagous, but are saprophagous and some probably attack foliage. The passalids on the contrary are capable of masticating wood material with their powerful jaws. They are moreover, often found in small or large groups with their immatures. These two groups are prevalent in tropical rain forests of both the hemispheres. Variety of vegetation in different altitudinal and ecological zones plus abundance of rotting tree stumps and decaying logs in humid forests of Arunachal Pradesh induced in developing a good assemblage of these two families in this region.

Following the publication of Arrow's "Fauna" in 1949 no important work has come out from the Indian region. Only recently, Biswas and Chatterjee (1985) have recorded 11 species of Passalidae and 3 species of Lucanidae from Namdapha Biosphere Reserve area (Changlang District) of Arunachal Pradesh. The present work is based mainly on some recent collection made by the author in different Districts of Arunachal Pradesh plus some collection already deposited in the A.P.F.S., Itanagar. This collection comprises 139 examples belonging to 16 species under 7 genera. Of these, 7 species under 5 genera are from Passalidae and 9 species under 2 genera are from Lucanidae, and 7 species of Lucanidae are first time recorded from Arunachal Pradesh. Uptil now 32 species of Passalidae and 138 species of Lucanidae are recorded from India and neighbouring countries.

SYSTEMATIC ACCOUNT

Family
Subfamily

PASSALIDAE
AULACOCYCLINAE

Genus I. **Aulacocylus** Kaup

1868. *Aulacocylus* Kaup, *Col. Hefte* 3 : 4 (Type-species : *Passalus edentatus* Macleay)

1. **Aulacocylus bicuspis** Kaup

1868. *Aulacocylus bicuspis* Kaup *Col. Hefte* 3 : 5.

1914. *Taeniocerus bicuspis* : Gravely, *Me.n, Indian Mus.* 3 : 210.

1949. *Aulacocylus bicuspis* : Arrow, *Fauna Brit. India. Coleoptera : Lamellicornia* 4 : 243.

Diagnostic characters : Body cylindrical, dorsum convex ; front margin of head bordered by a marginal groove, vertex bearing a short median erect process which is longitudinally grooved and bifid at tip, antennal club 3-segmented with moderately long lamellae, maxillary lacinia bidentate ; prothorax slightly broader than long and slightly converging anteriorly, pronotum completely margined with a median longitudinal groove, front coxae prominent and contiguous ; elytral striae deep and conspicuously punctate, punctures simple, intervals convex. Size : 20-25 mm. long and 7.5-10 mm. broad.

Material examined : 9 ex. INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Pitapol, 3 km. 0- Yazali, 4 ex., 15.ix.1988, T.K. Pal, decaying log ; East Siang District, 20 km. 0- Pasighat, 2 ex., 19.ii.1989, T.K. Pal, decaying log ; West Siang District, Darak, 10 km. 0- Basar, 1 ex., 9.iii.1989, T.K. Pal, Under bark of dead standing tree ; Sododoke, 24 km. 0- Basar, 2 ex., 10.iii.1989, T.K. Pal, dead tree stump (Reg. No. 733-741).

Distribution : INDIA : Arunachal Pradesh, Assam, West Bengal (Darjeeling Dist.) ; BURMA ; MALACCA.

Sub family PASSALINAE

Genus II. **Leptaulax** Kaup

1868. *Leptaulax* Kaup, *Col. Hefte* 3 : 11 (Type-species : *Passalus dentatus* Fabricius).

2. **Leptaulax dentatus** (Fabricius)

1792. *Passalus dentatus* Fabricius, *Ent. Syst.* 1(2) : 241.

1868. *Leptaulax dentatus* : Kaup, *Col. Hefte* 3 : 11.

1914. *Leptaulax dentatus* : Gravely, *Mem. Indian. Mus.* 3 : 252.

1949. *Leptaulax dentatus* : Arrow, *Fauna Brit. India Coleoptera : Lamellicornia* 4 : 247.

Diagnostic characters : Body depressed, dorsum rather flat and shining ; front margin of head bears four equal teeth with a smaller one at middle, antennal club 3-segmented with long lamellae, maxillary lacinia with single lobe ; prothorax distinctly transverse with front angles moderately sharp and hind angles rounded, sides of pronotum coarsely and densely punctate, front coxae not prominent and distinctly separate ; dorsal striae of elytra minutely punctate with intervals flat, punctures on lateral sides scalariform ; median area of metasternum impunctate. Size : 23-33 mm. long and 7-12 mm. broad.

Material examined : 34 ex. INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Itanagar, 1 ex., 25.viii.1984, R.N. Bhargava ; Pitapol, 3 km. 0- Yazali, 9 ex.,

15.ix.1988, T.K. Pal, decaying log ; Yazali, 2 ex., 15 & 17.ix.1988, T.K. Pal, under bark ; Tago, 10 km. 0- Yazali, 2 ex., 17.ix.1988, T.K. Pal, under loose bark ; Kimin, 8 ex., 20.ix.1988, T.K. Pal, fallen log ; East Siang District, Sherki, 20 km. 0- Pasighat, 2 ex., 19.ii.1989, T.K. Pal, decaying log ; Lohit District, Mankao, Chowkom, 10 ex., 19.ix.1986, R.N. Bhargava (Reg. No. 697-730).

Distribution : INDIA : Arunachal Pradesh, Assam, West Bengal (Darjeeling Dist.), Andaman Is ; BURMA ; THAILAND ; MALAYSIA ; INDONESIA ; PHILIPPINES ; SULAWESI ; NEW GUINEA.

3. *Leptaulax bicolor* (Fabricius)

1801. *Passalus bicolor* Fabricius, *Syst. Eleuth.* 2 : 256.

1914. *Leptaulax bicolor* : Gravely, *Mem. Indian Mus.* 3 : 257, 307.

1918. *Leptaulax bicolor* : Gravely, *Mem. Indian Mus.* 7 : 114.

1949. *Leptaulax bicolor* : Arrow, *Fauna Brit. India, Coleoptera : Lamellicornia* 4 : 249.

Diagnostic characters : Body flat and shining ; front margin of head with five equidistant teeth of which second and fourth larger than others, supraorbital ridge toothed in front and broad behind, parietal ridge joins with supraorbital ridge, prothorax transverse with sides converge anteriorly, front angles rather pointed and hind angles rounded, sides of pronotum coarsely and densely punctate, lateral marginal grooves coarsely punctate ; dorsal striae of elytra finely punctate with intervals almost flat, lateral striae strongly punctate but not scalariform ; median area of metasternum almost smooth with sides coarsely and densely punctate. Size : 19 mm. long and 7 mm. broad.

Material examined : 1 ex. INDIA : ARUNACHAL PRADESH, West Siang District, Malinithan Forest, 2 km. 0- Likabali, 16.iii.1989, T.K. Pal, under bank of dead tree (Reg. No. 731).

Distribution : INDIA : Arunachal Pradesh, Assam, West Bengal (Darjeeling Dist.), Kerala, Nicobar Is. ; CHINA ; BURMA ; THAILAND ; VIETNAM ; MALAYSIA ; INDONESIA ; PHILIPPINES ; SULAWESI ; GILOLO ; NEW GUINEA.

4. *Leptaulax roepstorffi* Kuw.

1898. *Leptaulax roepstorffi* Kuw. : *Nov. Zool.* 5 : 288.

1949. *Leptaulax roepstorffi* : Arrow, *Fauna Brit. India, Coleoptera : Lamellicornia* 4 : 249.

Diagnostic characters : Body flat and shining ; front margin of head bearing four almost equal but not equidistant teeth, median tooth insignificant, supraorbital ridge toothed in front and broad behind ; prothorax transverse and sides indistinctly converge anteriorly, front angles broadly pointed, sides of pronotum sparsely punctate with depressions at posterior third, marginal groove finely punctate ; dorsal striae of elytra minutely punctate with intervals flat, lateral striae strongly punctate and not scalariform. Size : 23 mm. long and 7.5 mm. broad.

Material examined : 1 ex. INDIA : ARUNACHAL PRADESH, East Siang District, Nambung, 7 km. 0- Boleng, 23.ii.1989, T.K. Pal, dead tree stump (Reg. No. 732).

Distribution : INDIA : Arunachal Pradesh, Andaman Is. ; BURMA.

Genus III. *Aceraius* Kaup

1868. *Aceraius* Kaup, *Col. Hefte* 3 : 26 (Type-species : *Passalus grandis* Burmeister).

5. *Aceraius grandis* (Burmeister)

1847. *Passalus grandis* Burmeister, *Handb. Ent.* 5 : 463.

1868. *Aceraius grandis* : Kaup, *Col. Hefte* 3 : 26.

1914. *Aceraius grandis* : Gravely, *Me.n. Indian Mus.* 3 : 231.

1918. *Aceraius grandis* : Gravely, *Me.n. Indian Mus.* 7 : 92.

1949. *Aceraius grandis* : Arrow, *Fauna Brit. India, Coleoptera* : Lamellicornia 4 : 260.

Diagnostic characters : Body rather flat and shining ; head asymmetrical, supraorbital ridges sharply elevated, united posteriorly by a continuous curved ridge and produced into outer marginal process in front, inner marginal process unequal with left one long and inclines outward, antennal club 6-segmented. maxillary lacinia with single lobe, head closely punctate with erect punctigerous setae ; prothorax transverse with feeble or incomplete median longitudinal groove, laterally and sides of front margin coarsely punctate, bristles at sides, front coxae not prominent and separated ; elytral striae deep and impunctate with intervals flat. outer three intervals densely punctate and thickly hairy in the anterior part ; metasternum densely punctate and hairy at sides, middle tibiae with dense hair on upper surface. Size : 38-50 mm. long and 14-19 mm. broad.

Material examined 58 ex. INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Itanagar, 2 ex., 6.v.1989, T.K. Pal ; 2 ex., 8.vii.1986, R.N. Bhargava ; 2 ex., 2.v.1987, S. Ghosh ; Yazali, 1 ex., 17.ix.1988, T.K. Pal, under bark ; Kimin, 2 ex., 20.ix.1988, T.K. Pal, under bark ; 2 ex., 17.v.1989, P.T. Bhutia ; Jhumi Bustce, 5 km. 0- Kimin, 1 ex., 20.ix.1988, T.K. Pal, rotten wood ; East Siang District, Sherki, 20 km. 0- Pasighat, 6 ex., 19.ii.1989, T.K. Pal, dead tree stump ; West Siang District, Logum Jining, 11 km. 0- Along, 14 ex., 5.iii.1989, T.K. Pal, decaying log ; Doje, 21 km. 0- Along, 13 ex., 6.iii.1989, T.K. Pal, fallen log ; Malinithan Forest, 2 km. 0- Likabali, 1 ex., 16.iii.1989, T.K. Pal, under bark of dead tree (Reg. No. 742-799).

Distribution : INDIA : Arunachal Pradesh, Assam, West Bengal (Darjeeling Dist.) ; BURMA ; MALAYSIA ; INDONESIA ; VIETNAM ; FORMOSA.

Genus IV. *Macrolinus* Kaup

1868. *Macrolinus* Kaup, *Col. Hefte* 3 : 18 (Type-species : *Passalus latipennis* Perch).

6. *Macrolinus sikkimensis* (Stoliczka)

1873. *Basilianus sikki.nensis* Stoliczka, *J. Asiat. Soc. Bengal* 42(2) : 161.

1914. *Macrolinus sikki.nensis* : Gravely, *Me.n. Indian Mus.* 3 : 243.

1949. *Macrolinus sikki.nensis* : Arrow, *Fauna Brit. India, Coleoptera* : Lamellicornia 4 : 266.

Diagnostic characters : Body more or less flattened ; head symmetrical, supraorbital ridges short and not united behind by a posterior ridge, front margin with two sharp triangular processes, antennal club 6-segmented, maxillary lacinia with single lobe,

head closely punctate and with fine setae ; prothorax transverse, convex, without median longitudinal groove on pronotum, coarsely and densely punctate on sides and near front angles, lateral scar beyond posterior angle, devoid of bristles but with minute setae on sides, front coxae not prominent and separated ; dorsal striae of elytra minutely punctate with intervals almost flat, punctures on lateral sides strong and scalariform ; middle tibiae bear scanty hairs ; mesosternum with a finely rugose patch in middle. Size : 27-32 mm. long and 10-11 mm. broad.

Material examined : 19 ex., INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Yazali, 1 ex., 15.ix.1988, T.K. Pal, under bark ; 2 ex., 17.ix.1988, T.K. Pal, under bark ; Tago, 10 km. O- Yazali, 2 ex., 17.ix.1988, T.K. Pal, under loose bark ; East Siang District, Sherki, 20 km. O- Pasighat, 1 ex., 19.ii.1989, T.K. Pal, decaying log ; Nambung, 7 km. O- Bolong, 1 ex., 23.ii.1989, T.K. Pal, dead tree stump ; 6 km. O- Yingkiong, 3 ex., 28.ii.1989, T.K. Pal, dead tree stump ; West Siang District, logum Jining, 11 km. O- Along, 7 ex., 5.iii.1989, T.K. Pal, decaying log ; Sododoke, 24 km. O- Basar, 1 ex., 10.iii.1989, dead tree stump ; Malinithen Forest, 2 km. O- Likabali, 1 ex., 16.iii.1989, T.K. Pal, under bark of dead tree (Reg. No. 678-696).

Distribution : INDIA : Arunachal Pradesh, Assam, West Bengal (Darjeeling Dist.) ; BURMA ; CAMBODIA.

Genus V. *Tiberioides* Gravely

1913. *Tiberioides* Gravely, *J. Asiat. Soc. Bengal* (2) 8 : 405 (Type-species : *Tiberius kuwerti* Arrow).

7. *Tiberioides austeni* Gravely

1914. *Tiberioides austeni* Gravely, *Me.n, Indian Mus.* 3 : 216.

1949. *Tiberioides austeni* ; Arrow, *Fauna Brit. India, Coleoptera : Lamellicornia* 4 : 254.

Diagnostic characters : Body rather flat, shining and devoid of hair above ; head symmetrical, supraorbital ridges united behind by a supraoccipital ridge, front margin with a pair of short, broad and pointed processes, antennal club 6-segmented with anterior three lamellae very long, maxillary lacinia with two lobes, no lateral grooves on mentum ; prothorax transverse, without complete median groove on pronotum and a few punctures near lateral scars only, front coxae not prominent and separated ; elytra not very dilated behind, deeply striate with dorsal intervals slightly convex, lateral striae with distinct small punctures, punctures not scalariform ; middle tibiae thickly clothed with hair above, lateral depressed area of metasternum coarsely punctate but not densely hairy. Size 48 mm. long and 16 mm. broad.

Material examined : 1 ex. INDIA : ARUNACHAL PRADESH, East Siang District, Sherki, 20 km. O- Pasighat, 19.ii.1989, T.K. Pal, deep of a decaying log (Reg. No. 800).

Distribution : INDIA : Arunachal Pradesh ; BURMA.

Family	LUCANIDAE
Subfamily	LUCANINAE

Genus I. *Calcodes* Westwood

1834. *Calcodes* Westwood, *Ann. Sci. Nat.* (2) 1 : 116, 118 (Type-species : *Lucanus aeratus* Hope).

8. *Calcodes cuvera* (Hope)

1845. *Odontolabis cuvera* Hope, *Trans. Linn. Soc.* 19 : 105.
 1845. *Lucanus prinsepilii* Hope & Westwood, *Cat. Luc. Col.* : 16.
 1845. *Odontolabis saundersi* Hope, *Trans. Linn. Soc.* 19 : 105.
 1847. *Anoplocnæ.nus bicolor* Burmeister, *Handb. Ent.* 5 : 360.
 1848. *Lucanus prinsepilii* : Westwood, *Cab. Orient. Ent.* : 54.
 1885. *Odontolabis cuvera* : Leuthner, *Trans. Zool. Soc.* 1885 : 452.
 1902. *Anoplocnæ.nus bicolor* var. *alticola* Moll., *Insektenbörse* 19 : 353.
 1902. *Odontolabis gestroi* Boileau, *Le Naturaliste* 24 : 204.
 1949. *Calcodes cuvera* : Arrow, *Fauna Brit. India*, Coleoptera : Lamellicornia 4 : 190.

Diagnostic characters : Black with bicoloured elytra ; front of head with a strongly elevated straight carina, canthus completely dividing eye into upper and lower halves, a sharp process behind each eye, antennal club 3-segmented, long mandible of male with a small sharp oblique tooth little beyond base and a strong truncate process beyond middle and tip broadly forked, ligula with long fringe of hairs ; prothorax with lateral and hind angles spiniform, prosternal process produced obliquely downward, front tibiae armed with three or four sharp lateral teeth ; elytra yellowish with a triangular black sutural band, band not reaching shoulders at base and gradually tapering to a point at end of suture ; middle and hind tibiae devoid of lateral spines. Size- ♂ : 50-51 mm. long (excluding mandibles) and 21.5-22 mm. broad.

Material examined : 2 ♂♂ INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Itanagar, 10.viii & 20.viii.1988, T.K. Pal, at light (Reg. No. 803-804).

Distribution : INDIA : Arunachal Pradesh (New record), Meghalaya, Manipur, West Bengal (Darjeeling Dist.) ; BURMA.

9. *Calcodes siva* (Hope & Westwood)

1845. *Lucanus siva* Hope & Westwood, *Cat. Luc. Col.* : 16.
 1885. *Odontolabis siva* : Leuthner, *Trans. Zool. Soc. Lond.* 1885 : 436.
 1937. *Calcodes siva* : Arrow, *Trans. R. ent. Soc. Lond.* 86 : 241.
 1949. *Calcodes siva* : Arrow, *Fauna Brit. India*, coleoptera : Lamellicornia 4 : 200.

Diagnostic characters : Black with head and sides of pronotum little dull and elytra glossy ; front margin of head little hollowed, side rounded in front of eye, canthus completely dividing eye, strong spiniform process beneath eye, antennal club 3-segmented ; lateral angles of prothorax sharply pointed, hind angles sharp but not spiniform, prosternum feebly pointed behind, front tibiae with three or four small teeth ; elytra shining except outer margin. Size- ♀ : 45-47 mm. long (excluding mandibles) and 20-22 mm. broad.

Material examined : ♀♀ . INDIA : ARUNACHAL PRADESH, West Siang District, Doje, 21 km. 0-Along, 1 ex., 6.iii.1989, T.K. Pal, decaying log ; Lower Subansiri District, Itanagar, 1 ex., 8.vii.1986, R.N. Bhargava (Reg. No. 801-802).

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, West Bengal (Darjeeling Dist.) ; BANGLADESH ; BURMA.

10. *Calcodes baladeva* (Hope)

1845. *Odontolabis baladeva* Hope, *Trans. Linn. Soc.* 19 : 105.
 1845. *Lucanus angulatus* Hope & Westwood, *Cat. Luc. Col.* : 17.
 1864. *Neolucanus saundersi* Parry, *Trans. ent. Soc. Lond.* 1864 : 20.
 1885. *Neolucanus saundersi* : Leuthner, *Trans. Zool. Soc.* 1885 : 431.
 1885. *Neolucanus laina* Leuthner, *Trans. Zool. Soc.* 1885 : 430.
 1899. *Neoluconus waterhousei* Boileau, *Bull. Soc. ent. France* 1899 : 178.
 1912. *Neolucanus naxinus* Haulb., *Insecta* 2 : 193.
 1913. *Neolucanus waterhousei* : Boileau, *Trans. ent. Soc. Lond.* 1913 : 247.
 1929. *Neolucanus baladeva* : Didler, *Col. Luc. du Globe* : 83.
 1937. *Calcodes baladeva* : Arrow, *Trans. R. ent. Soc. Lond.* 86 : 243.
 1949. *Calcodes baladeva* : Arrow, *Fauna Brit. India, coleoptera : lemellicornia* 4 : 204.

Diagnostic characters : Dark brown or black ; head emarginate in front, canthus completely dividing eye, prominent laterally and broadly angular, head closely punctured in front and sparsely behind, antennal club 3-segmented ; lateral angles of prothorax sharply pointed and hind angles sharp but not pointed, prosternum rounded behind but with a small conical process at tip ; elytra smooth and shining with margins opaque. This species closely resembles *C. siva* but can be readily distinguished by its laterally prominent canthus and absence of its spiniform process beneath eye. Size – ♀ : 38-45 mm. long (excluding mandibles) and 8-12 mm. broad.

Material examined : 6 ♀♀ . INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Itanagar, 1 ex., 10.ix.1988, T.K. Pal, at light ; 1 ex., 12.v.1989, O.B. Chhotani ; Yazali, 2 ex., 15 & 16.ix.1988, T.K. Pal, at light ; Kimin, 1 ex., 20.ix.1988, T.K. Pal, at light ; Lohit District, Kamlong, 1 ex., 23.ix.1986 , R.N. Bhargava (Reg. No. 805-810).

Genus II. *Dorcus* Macleay11. *Dorcus antaeus* Hope

1842. *Dorcus antaeus* Hope, *Proc. ent. Soc. Lond.* 1842 : 83.
 1845. *Dorcus antaeus* Hope & Westwood, *Cat. Luc. Col.* : 20.
 1845. *Lucanus scaritides* Hope & Westwood, *Cat. Luc. Col.* : 24.
 1902. *Rhaetus parryi* Boileau, *Mem. Soc. Ent. Belg.* 9 : 49.
 1915. *Dorcus yaksha* Gravely, *Rec. Indian Mus.* 9 : 422.
 1928. *Dorcus antaeus* : Didier, *Luc. du Globe* : 24.
 1938. *Dorcus antaeus* : Arrow, *Ann. Mag. Nat. Hist.* (2) 2 : 53.
 1949. *Dorcus antaeus* : Arrow, *Fauna Brit. India, Colcoptera : Laeuollicornia* 4 : 86.

Diagnostic characters : Entirely black ; head shorter than prothorax, very short behind eyes and eyes are close to front angles of prothorax, eyes divided by canthus in front half, clypeus prominent and feebly bilobed, head coarsely and densely punctate in front and sparsely behind, 10 - segmented antenna with 3 - segmented club and seventh segment with a short supplementary process ; prothorax wider

posteriorly, sides gently rounded and indistinctly angulate behind middle, pronotum rather dull with sides densely punctate, front tibia forked at tip with lateral margin irregularly dentate ; elytra smooth and little shining, humeral angles angular but not acute ; middle and hind tibiae with single short spine near middle at outer margin. Size — ♀ : 22 mm. long (excluding mandibles) and 10 mm. broad.

Material examined : 1 ♀ . INDIA : ARUNACHAL PRADESH, West Siang District, Logum Jining, 21 km. ♀ — Along, 5.iii.1989, T.K. Pal, deep of a decaying log (Reg. No. 812).

Distribution : INDIA : Arunachal Pradesh (New record), Meghalaya, West Bengal (Darjeeling Dist.), Uttar Pradesh ; BURMA ; THAILAND.

12. *Dorcus foveatus* (Hope)

1841. *Lucanus foveatus* Hope. *Trans. Linn. Soc. Lond.* 18 : 590.
 1841. *Lucanus astacoides* Hope. *Trans. Linn. Soc. Lond.* 18 : 590.
 1841. *Lucanus omissus* Hope. *Trans. Linn. Soc. Lond.* 18 : 591.
 1845. *Lucanus fraternus* : Hope & Westwood. *Cat. Luc. Col.* : 12.
 1869. *Cladognathus impressus* Wat. *Trans. ent. Soc. Lond.* 1869 : 17.
 1870. *Metopodontus impressus* Parry. *Trans. ent. Soc. Lond.* 1870 : 78.
 1911. *Metopodontus poultoni* Boileau. *Bull. Soc. ent. France* 1911 : 63.
 1913. *Metopodontus foveatus* : Boileau. *Trans. ent. Soc. Lond.* 1913 : 224.
 1915. *Metopodontus foveatus* : Gravely. *Rec. Indian Mus.* 11 : 417.
 1915. *Metopodontus foveatus birmanicus* Gravely. *Rec. Indian Mus.* 11 : 418.
 1929. *Metopodontus croceus* Didier. *Col. Luc. du Globe* : 121.
 1949. *Dorcus foveatus* : Arrow. *Fauna Brit. India, Coleoptera : Lamellicornia* 4 : 165.

Diagnostic characters : Brick-red or meroon with antennae, tarsi, front of head, edges of pronotum and elytra almost black ; head about as long as prothorax and depressed in front, lateral margin with a sharp angle before eye, anterior half of eye divided by canthus, sides produced behind eyes and feebly prominent laterally, strongly rugose in front, two pairs of minute tubercle in middle of vertex, 10-segmented antenna with 3-segmented club and seventh segment with a short process ; front angles of prothorax blunt, sides almost straight up to lateral angles, pronotum minutely punctate in middle and rugose towards sides, front tibia minutely serrate with small teeth at intervals ; elytra dull with fine dense punctures, humeral angles acute ; middle and hind tibiae with single minute spine near middle at outer margin. Size — ♂ : 20 mm. long (excluding mandibles) and 7.5 mm. broad.

Material examined : 1 ♂ . INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Itanagar, 12.v.1989, O.B. Chhotani (Reg. No. 813).

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Manipur, West Bengal (Darjeeling Dist.) ; BHUTAN ; BURMA.

13. *Dorcus boileaui* (Didier)

1911. *Rhaetulus speciosus* Boileau, *Trans. ent. Soc. Lond.* 1911 : 437 (name preoccup.)

1925. *Rhaetulus speciosus* var. *boileaui* Didier, *Bull. Soc. ent. France* 1925 : 154.

1930. *Rhaetulus speciosus* var. *gardneri* Didier, *Col. Luc. du Globe* : 128.

1949. *Dorcus boileaui* : Arrow, *Fauna Brit. India. Coleoptera* : Lamellicornia 4 : 103.

Diagnostic characters : Glossy, orange coloured with mandibles, part of head, middle of pronotum, scutellum, narrow sutural stripe dilating towards base of elytra blackish ; head shorter than prothorax, ocular canthus prominent laterally and dividing anterior half of eye, frons and vertex rugosely punctate, head not hollowed in front, 10-segmented antenna with 3-segmented club ; front angles of prothorax blunt, sides gently rounded and finely serrate, pronotum strongly and closely punctate at sides and sparsely and minutely in middle, front tibia broadly forked at tip with numerous short teeth on outer margin ; elytra shining, finely and closely punctate with sides and apex more strongly punctate, humeral angles sharply angular ; middle and hind tibiae each with a strong spine near middle of outer edge. Size — ♀ : 17.5 mm. long (excluding mandibles) and 6 mm. broad.

Material examined : 1 ♀ . INDIA : ARUNACHAL PRADESH, West Siang District, Logum Jiaing, 21 km. 0- Along, 5.iii.1989, T.K. Pal, decaying log (Reg. No. 815).

Distribution : INDIA : Arunachal Pradesh (New record), Meghalaya ; BURMA ; THAILAND ; LAOS ; VIETNAM ; MALAYSIA.

14. *Dorcus suturalis* (Olivier)

1789. *Lucanus suturalis* Olivier. *Ent.* (1) 1 : 16.

1864. *Cladognathus suturalis* : Parry, *Trans. ent. Soc. Lond.* 1864 : 25.

1899. *Metopodontus suturalis* : Planet, *Bull. Soc. ent. France* 1899 : 225.

1937. *Dorcus suturalis* : Arrow, *Trans. R. ent. Soc. Lond.* 86 : 240.

1949. *Dorcus suturalis* : Arrow, *Fauna Brit. India. Coleoptera* : Lamellicornia 4 : 136.

Diagnostic characters : Yellowish and not glossy with mandibles, legs and lower surface darker, and antenna, a V-shaped mark up on head, middle of pronotum, scutellum, sutural stripe not dilating towards apex blackish, also small lateral spots beyond hind angles of pronotum ; head depressed in front, lateral margin bluntly angular before eye, ocular canthus moderately prominent laterally and dividing anterior half of eye, frons and vertex finely and densely granular, 10-segmented antenna with 3-segmented club and seventh segment with a long process ; prothorax broader at base than elytra, front angles bluntly projected, sides feebly curved and not serrate, pronotum finely and densely granular, front tibia finely serrate at outer margin and rather narrowly forked at tip ; elytra not shining, finely and densely punctate except near suture where punctures sparse, humeral angles sharply angular ; middle and hind tibia without lateral spines. This species resembles *D. boileaui* and the comparable differentiating characters are noted under the previous species. Size ♂ : 23 mm. long (excluding mandibles) and 9 mm. broad.

Material examined : 1 ♂ . INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Itanagar, 12.v.1989, O.B. Chhotani (Reg. No. 814).

Distribution : INDIA : Arunachal Pradesh (New record), Assam, Sikkim ; VIETNAM.

15. *Dorcus titanus* (Boisd.)

1835. *Lucanus titanus* Boisd., *Voy. de l'Astrolabe. Ent.* 2 : 237.
 1843. *Dorcus wester.nanni* Hope, *Trans. Linn. Soc.* 19 : 106.
 1847. *Dorcus titan* Burmeister, *Handb. Ent.* 5 : 384.
 1854. *Platyprosopus platynelus* Saunders, *Trans. ent. Soc.* 1854 : 50.
 1854. *Dorcus marginalis* Saunders, *Trans. ent. Soc.* 1854 : 52.
 1854. *Dorcus obscurus* Saunders, *Trans. ent. Soc.* 1854 : 52.
 1937. *Dorcus titanus* : Arrow, *Trans. R. ent. Soc. Lond.* 86 : 244.
 1949. *Dorcus titanus* : Arrow, *Fauna Brit. India. coleoptera* : Lamellicornia 4 : 104.

Diagnostic characters : Black, rather depressed ; head densely granular, clypeal process short-broad notched in middle and sides angularly produced, eyes situated far from front margin of prothorax, ocular canthus narrow and dividing eye almost completely, mandibles much longer than head, seventh joint of antenna with a long setose process ; pronotum margined at base, lateral margin bisinuate to lateral angle which is sharp and placed before middle, hind angles sharp, front tibia sharply dentate at outer margin ; elytra smooth and densely punctate near basal margin, humeral angles sharp ; middle and hind tibiae with a prominent spine at outer margin. Size — ♂ : 56 mm. long (excluding mandibles) and 23 mm. broad.

Material examined : 1 ♂. INDIA : ARUNACHAL PRADESH, Lower Subansiri District, Kimin, 16.v.1989, P.T. Bhutia (Reg. No. 811).

Distribution : INDIA : Arunachal Pradesh (New record), Assam, Meghalaya, West Bengal (Darjeeling Dist.) ; BURMA ; CHINA ; JAPAN ; VIETNAM ; MALAYSIA ; INDONESIA ; PHILIPPINES ; SULAWESI.

16. *Dorcus tityus* Hope

1842. *Dorcus tityus* Hope, *Proc. ent. Soc. Lond.* 1842 : 83.
 1848. *Dorcus punctatostriatus* Hope, *Gray's Zool. Misc.* : 22.
 1862. *Eurytrachelus senirugosus* Thomson, *Annls Soc. ent. Fr.* (4) 1 : 422.
 1870. *Eurytrachelus tityus* : Parry, *Trans. ent. Soc. Lond.* 1870 : 61.
 1913. *Eurytrachelus tityus* : Bolleau, *Trans. ent. Soc. Lond.* 1913 : 249.
 1929. *Eurytrachellelus tethys* Didier, *Col. Luc. du Globe* : 115.
 1930. *Eurytrachelus tethys* : Didier, *Col. Luc. du Globe* : 185.
 1930. *Eurytrachelus fuliginosus* Didier, *Col. Luc. du Globe* : Fig. 33 (no description).
 1949. *Dorcus tityus* : Arrow, *Fauna Brit. India. Coleoptera* : Lamellicornia 4 : 106.

Diagnostic characters : Rather depressed, black, dull ; clypeal process of head short-broad and angularly produced on sides, sides of head rather obtusely angular in front and little contracted behind eyes, ocular canthus very narrow, not prominent laterally and extending up to anterior two-thirds of eye, vertex and frons densely granular, mandibles moderately long with a strong basai tooth, seventh antennal segment not long ; pronotum margined at base, side excised behind front angle forming a sharp angle behind excision, hind angles more or less sharp, front tibia

with broad blunt teeth ; elytra with minute punctures, humeral angles sharp ; middle and hind tibiae with a short spinuous projection at outer margin. Size— : 35 mm. long (excluding mandibles) and 14 mm. broad.

Material examined : 1 ♂. INDIA : ARUNACHAL PRADESH, West Kameng District, Dirong, 17.ix.1984, R.N. Bharghava (Reg. No. 816).

Distribution : INDIA : Arunachal Pradesh (New record), Assam, Sikkim, West Bengal (Darjeeling Dist.) ; BURMA ; NEPAL.

SUMMARY

139 examples of lamellicorn beetles of the families Passalidae and Lucanidae collected from Arunachal Pradesh are worked out. These represent 7 species under 5 genera of Passalidae and 9 species under 2 genera of lucanidae with several new distributional records from Arunachal Pradesh. Salient diagnostic features of all the species are noted and habitat data as far as possible, are cited.

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- Biswas, S. and Chatterjee, S. K. 1985. Insecta : Coleoptera : Passalidae and Lucanidae. In : *Fauna of Namdapha : Arunachal Pradesh, A proposed Biosphere Reserve. Rec. zool. Surv. India* 82 : 179 — 184.