

INOPEPLIDAE AND ELACATIDAE (COLEOPTERA : HETEROMERA) FROM
ARUNACHAL PRADESH, INDIA

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INTRODUCTION

Inopeplidae is a sufficiently distinct small family of the section Heteromera under the superfamily Cucujoidae of the suborder Polyphaga. Hetschko (1930) listed 3 of 52 species under the genus *Inopeplus* Smith from India, while treating it under the family Cucujidae (Cucujinae : Inopeplini). Blackwelder (1942) referred *Inopeplus* to the family Staphylinidae, because of apparent similarity of exposed abdominal segments. Crowson (1955) recognised the distinct family status of Inopeplidae and included the genera *Inopeplus*, *Diagrypnodes* Waterhouse and *Aciphus* Oliff in it. Sengupta, Pal and Mukhopadhyay (1977) ascertained its systematic position and described three more species from India. Pal and Dutta (1982) added one more species from Andaman Islands, totalling the Indian species to 7. Elacatidae is also a small family of Heteromera and closely related to the Inopeplidae. Sengupta (1977) recorded this family in India with single species from West Bengal (Darjeeling District). Both the families inhabit mostly the subcorticolous part of fallen tree stumps.

In the present study both the families are recorded for the first time from Arunachal Pradesh including two new species of Inopeplidae.

SYSTEMATIC ACCOUNT

Family : INOPEPLIDAE

Genus : *Inopeplus* Smith

1. *Inopeplus biocellatus* (Motschulsky)

1859. *Euryplatus biocellatus* Motschulsky, *Etud. Ent* 8 : 98.

1908. *Inopeplus biocellatus* : Grouvelle, *Annl. Soc. ent. Fr.* 77 : 46.

1977. *Inopeplus biocellatus* : Sengupta, Pal & Mukhopadhyay, *Oriental Ins.* 11 : 399.

Material examined : 8 ex. India : Arunachal Pradesh, Lower Subansiri District, Seven Camp, 27 Km. 0-Kimin, 4 ex., 21-ix-1988, T. K. Pal, ex. under bark ; Lower

Subansiri District, nr. Pitapol, 10 Km. 0-Yazali, 2 ex., 19-ix-1988, T. K. Pal, *ex.* under bark ; Lower Subansiri District, Hawa Camp, 15 Km. 0-Kimin, 1 ex., 22-ix-1988, T. K. Pal, *ex.* under bark ; Lower Subansiri District, nr. Lichi, 23 Km. 0-Yazali, 1 ex., 16-ix-1988, T. K. Pal, *ex.* under bark (ZSI, APFS Reg. No. 948—955).

Distribution : India : Arunachal Pradesh (New Record), Meghalaya, West Bengal.

2. *Inopeplus nitidus* Sengupta, Pal & Mukhopadhyay

1977. *Inopeplus nitidus* Sengupta, Pal & Mukhopadhyay, *Oriental Ins.* : 11 399.

Material examined : 8 ex. India : Arunachal Pradesh, Lower Subansiri District, Seven camp. 27 Km. 0-Kimin, 2 ex., 21-ix-1988. T. K. Pal, *ex.* under bark ; Lower Subansiri District, nr. Pitapol, 10 Km. 0-Yazali, 2 ex., 19-ix-1988, T. K. Pal, *ex.* under bark ; Lower Subansiri District, nr. Lichi, 23 Km. 0-Yazali, 3 ex., 16-ix-1988, T. K. Pal, *ex.* under bark ; Lower Subansiri District, Hawa Camp, 15 Km. 0-Kimin, 1 ex., 22-ix-1988, T. K. Pal, *ex.* under bark (ZSI, APFS Reg. No. 956—963).

Distribution : India, Arunachal Pradesh (New record), Sikkim.

3. *Inopeplus jairajpurii* sp. nov.

(Figs. 1, 2)

General appearance (Text-fig. 1) elongated, flattened, shiny, blackish, elytra with pale spots, last three and half abdominal segments exposed.

Head broader than long, apical margin truncate, fronto-clypeal suture distinct and nearly straight, apical margin of frons with transverse depression, feeble medio-longitudinal impression on vertex ; puncturation on vertex little elliptical, coarse and dense, interspaces hardly as wide as punctures on sides and closer towards middle ; eyes moderately large and finely faceted, a semicircular depression surrounding inner margin of eye less distinct, a short oblique depression arises near antennal base. Antenna moderately long and slender, scape moderately large and curved, pedicel shorter and narrower than scape, segment 3 slightly wider and longer than pedicel, segments 4-10 subequal and little elongate, segment 11 elongate and acuminate at apex, scape to basal half of segment 3 reddish-brown and apical part of segment 3 to segment 11 blackish.

Prothorax transverse, flattened, widest beyond middle and gradually narrowed towards base ; lateral margin indistinctly sinuate near middle, finely bordered from base to posterior two-thirds ; puncturation on pronotum roundish, finer and sparser than on vertex, interspaces slightly wider than punctures.

Scutellum transverse, rounded at apex and impunctate.

Elytra broader than long, widest near apex, puncturation fine and sparser than on pronotum ; two pale spots on each elytron—one in both anterior and posterior halves, anterior one elongate-elliptical and posterior one oblique, margin of spots moderately distinct ; last three and half abdominal segments exposed.

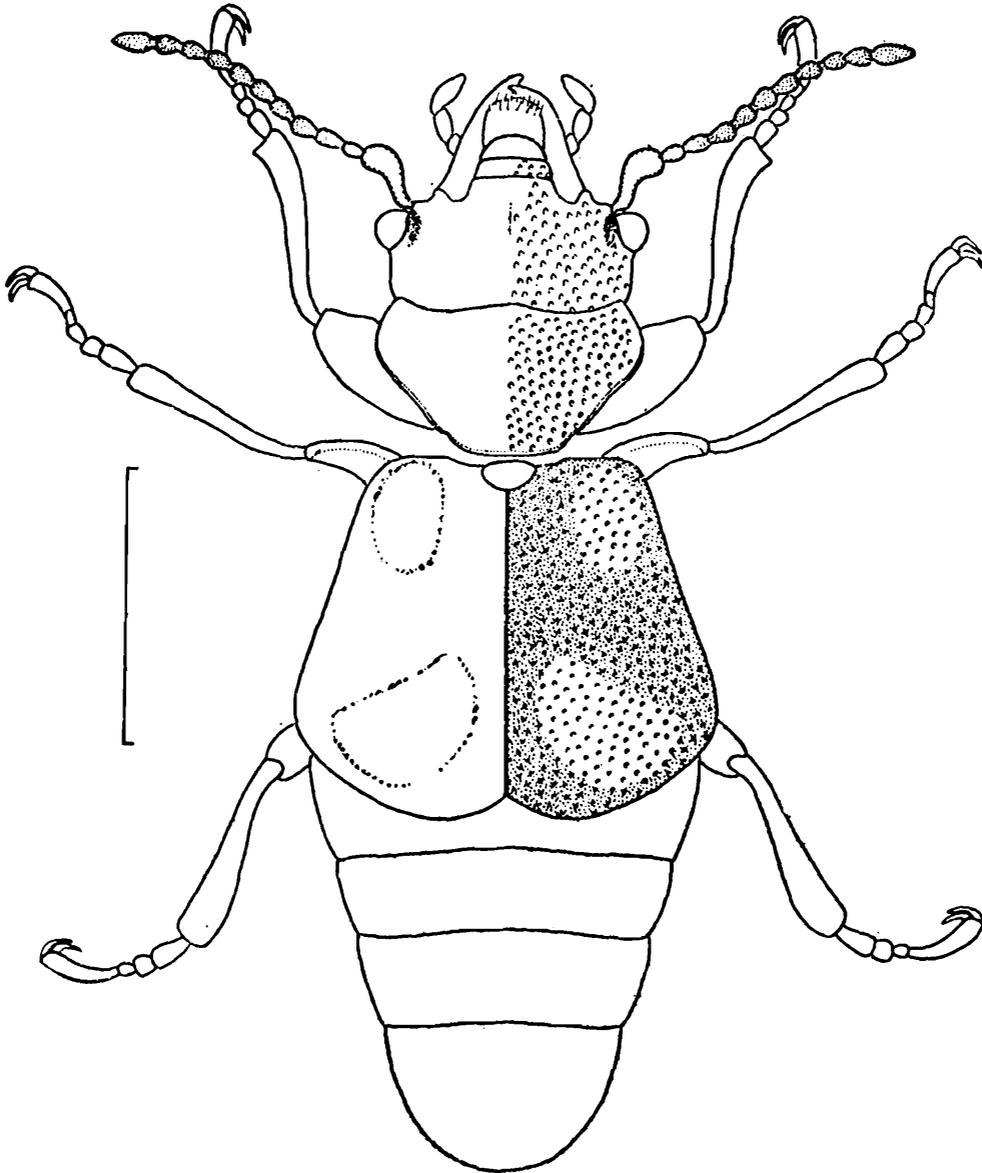


Fig. 1. *Inopeplus jairajpurii* sp. nov., dorsal view (scale=1.0 mm.).

Ventral surface shiny, fine punctures only on head and prothorax. Aedeagus (Text-fig. 2) with gradually narrowed and broadly pointed apex of median lobe ; broad, feebly bilobed and with a few setae at apex of each paramere.

Remarks : This species shows some resemblances with *I. nigricorpus* Sengupta, Pal & Mukhopadhyay and *I. andamanicus* Pal & Dutta. This can easily be separated from the former species by the presence of pale spots on elytra and more abdominal segments exposed. This species can be differentiated from the latter species in having different pattern of elytral spots, prothorax not abruptly narrowed in

posterior third and lateral margin not distinctly sinuated, coarser and denser puncturation on vertex of head. This species also shows similarity with *I. apatani* sp. nov., the differences of which are shown in the couplet 7 of the key to species.

Measurements of holotype : Total length 3.9 mm., width of head across eyes 0.92 mm., length of antenna 1.34 mm., length and width of prothorax 0.52 mm. and 0.92 mm., length and width of elytra 1.32 mm. and 1.50 mm.

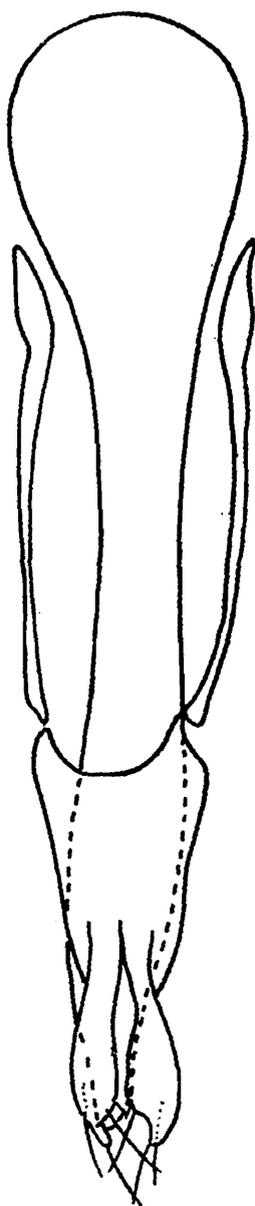


Fig. 2. Aedeagus of *Inopeplus jairajpurii* sp. nov.

Holotype ♂, India : Arunachal Pradesh, Lower Subansiri District, nr. Pitapol, 10 Km. 0-Yazali, 19-ix-1988, T. K. Pal, ex. under bark ; aedeagus dissected, mounted on cover-slip and pinned with the holotype.

Paratypes : 4 ex., data same as holotype ; 1 ex., Lower Subansiri District, nr. Lichi, 23 Km. 0-Yazali, 16-ix-1988, T. K. Pal, ex. under bark ; 1 ex., Lower Subansiri

District, Seven Camp, 27 Km. 0-Kimjin, 21-ix-1988, T. K. Pal, *ex.* under bark ; (ZSI, APFS Reg. No. 973—979 ; Holotype and 5 Paratypes in Zoological Survey of India, Calcutta and 1 Paratype in Zoological Survey of India, Itanagar).

Etymology : This species is named in honour of Prof. M. S. Jairajpuri, an eminent nematologist and erstwhile Director of our Institute.

4. *Inopeplus apatani* sp. nov.

(Fig. 3)

General appearance (Fig. 3) elongated, flattened, shiny, blackish with elytra partially pale-coloured, last four abdominal segments exposed.

Head broader than long, apical margin truncate, fronto-clypeal suture distinct and nearly straight, apical margin of frons with a transverse depression, feeble medio-longitudinal impression on vertex ; puncturation on vertex little elongate, coarse and dense, interspaces narrower than punctures ; eyes moderately large and finely faceted, a semicircular depression surrounding inner margin of eye less distinct. Antenna moderately long and slender, scape moderately large and curved, pedicel shorter and narrower than scape, segment 3 slightly wider and longer than pedicel, segments 4-10 subequal and about as broad as long, segment 11 elongate and acuminate at apex, scape and pedicel reddish-brown and segments 3-11 blackish.

Prothorax transverse, flattened, widest beyond middle and markedly narrowed towards base, lateral margin distinctly sinuated in posterior third, finely bordered from base to posterior two-thirds, a small notch close to marginal border of posterior third ; finely bordered from base to posterior two-thirds, a small notch close to marginal border of posterior third ; puncturation on pronotum roundish, finer and sparser than on vertex, interspaces wider than punctures.

Scutellum transverse, rounded at apex and impunctate.

Elytra broader than long, widest near apex, puncturation fine and almost similar as on pronotum, a rounded pale spot on posterior half of each elytron, the margin of which less distinct, last four abdominal segments exposed.

Ventral surface blackish, shiny and finely pubescent.

Remarks : This species resembles *I. nigricarpus* Sengupta, Pal & Mukhopadhyahy and *I. andamanicus* Pal & Dutta. This can be differentiated from the former species by entirely blackish elytra, last two and half of abdominal segments exposed and vertex devoid of a short transverse depression from inner margin of eye in *nigricarpus*. This species can be readily distinguished from the latter by the anterior half of elytra paler, last abdominal segments exposed, finer and sparser puncturation of vertex, and without a marginal notch near base of pronotum in *andamanicus*.

Measurements of holotype : Total length 3.87 mm., width of head across eyes 0.91 mm., length of antenna 1.16 mm., length and width of prothorax 0.54 mm. and 0.91 mm., length and width of elytra 1.35 mm. and 1.50 mm.

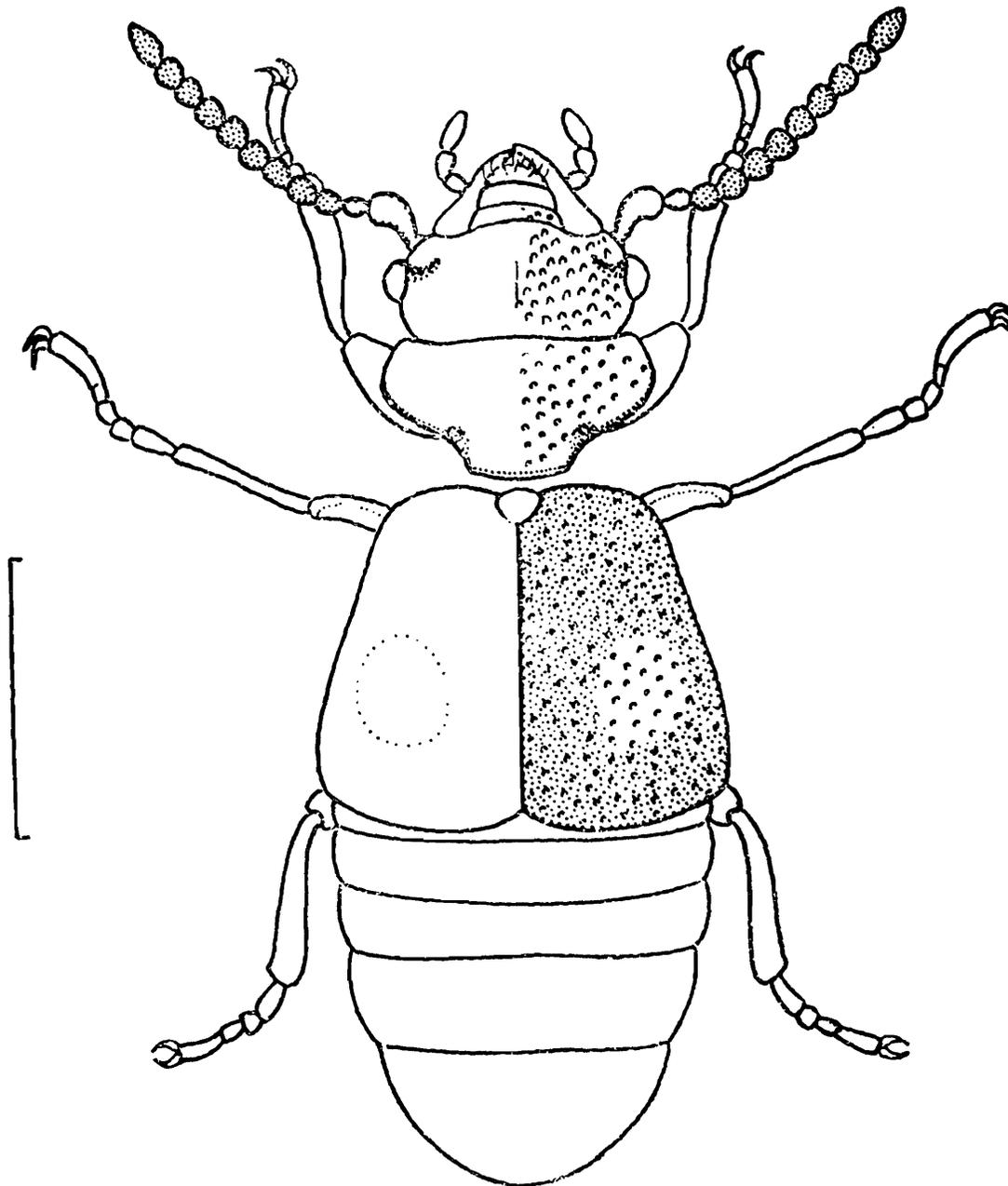


Fig. 3. *Inopeplus apatani* sp. nov., dorsal view (scale=1.0 mm.),

Holotype ♀, India : Arunachal Pradesh, Lower Subansiri District, Seven Camp, 27 Km. 0-Kimin, 21-ix-1988, T. K. Pal, ex. under bark ; ovipositor dissected, mounted on cover-slip and pinned with the holotype.

Paratypes : 2 ex., data same as holotype ; 1 ex., Lower Sunansiri District, nr. Pitapol, 10 Km. 0-Yazali, 19-ix-1988, T. K. Pal, ex. under bark (ZSI, APFS Reg. No. 980—983 ; Holotype and 2 Paratypes in Zoological Survey of India, Calcutta and 1 Paratype in Zoological Survey of India, Itanagar).

Etymology : This species is named after the tribe inhabiting the Lower Subansiri District from where the species is reported.

5. *Inopeplus albonotatus* (Motschulsky)

1859. *Euryplatus albonotatus* Motschulsky, *Etud. Ent.* 8 : 98.
 1908. *Inopeplus albonotatus* : Grouvelle, *Annl. Soc. ent. Fr.* 77 : 462.
 1977. *Inopeplus albonotatus* : Sengupta, Pal & Mukhopadhyay, *Oriental Ins.* 11 : 403.
 1982. *Inopeplus albonotatus* : Pal & Dutta, *Rec. zool. Surv. India* 79 : 471.

Material examined : 1 ex. India : Arunachal Pradesh, Lower Subansiri District, Hawa Camp, 15 Km. 0-Kimin, 22-ix-1988, T. K. Pal, ex. under bark (ZSI, APFS Reg. No. 972).

Distribution : India : Arunachal Pradesh (New record), West Bengal, Andaman Is.

6. *Inopeplus decisus* (Walker)

1858. *Prognatha decisus* Walker, *Ann. Mag. Nat. Hist.* 2 (3) : 205.
 1908. *Inopeplus decisus* : Grouvelle, *Annl. Soc. ent. Fr.* 77 : 462.
 1977. *Inopeplus decisus* : Sengupta, Pal & Mukhopadhyay, *Oriental Ins.* 11 : 405.

Material examined : 8 ex. India : Arunachal Pradesh, West Siang District, Likabali, 12-iii-1989, T. K. Pal, ex. under bark (ZSI, APFS, Reg. No. 964-971).

Distribution : India : Arunachal Pradesh (New record), West Bengal, Uttar Pradesh, Kerala, Tamil Nadu ; Sri Lanka.

Key to the Indian species of INOPEPLUS

- | | | |
|---|-----|---|
| 1. Head and prothorax reddish. | ... | 2 |
| Head and prothorax dark brown to deep black | ... | 3 |
| 2. Elytra Blackish with a whitish rounded spot on each elytron, abdominal segments 4 and 5 exposed | ... | <i>biocellatus</i>
(Motschulsky) |
| Elytra entirely black and without any spot, abdominal segment 2 partly and segments 3 to 5 completely exposed | ... | <i>itidus</i> Sengupta,
Pal & Mukhopadhyay |
| 3. Lateral margin of prothorax smooth | ... | 4 |
| Lateral margin of prothorax with two to four distinct denticles. | ... | 8 |

4. Head across eyes distinctly wider than prothorax, pedicel and segment 3 of antenna distinctly shorter and narrower than other segments, lateral margin of prothorax broadly bordered ... *distinctus* Sengupta, Pal & Mukhopadhyay

Head across eyes slightly narrower or about as broad as prothorax, pedicel and segment 3 of antenna about as long as segments 4-10 but slightly narrower, lateral margin of pronotum finely bordered ... 5

5. Elytra entirely metallic black, last two abdominal segments exposed ... *nigricarpus* Sengupta, Pal & Mukhopadhyay

Blackish elytra partially whitish or pale-coloured ... 6

6. Anterior half of elytra paler and posterior half blackish, only last three abdominal segments completely exposed, puncturation on vertex minute-roundish with interspaces distinctly wider ... *andamanicus* Pal & Dutta

Elytra blackish along its entire length with pale rounded spots—one or two pairs, more than last three abdominal segments exposed, puncturation on vertex coarse-elongate with interspaces narrower or about as wide as punctures ... 7

7. Two pairs of pale spots on elytra—one in both anterior and posterior halves, last three and half abdominal segments exposed, lateral margin of prothorax gradually narrowed and not markedly sinuate in posterior third, antennal segments slightly elongate and appear somewhat filiform ... *jairajpurii* sp. nov.

One pair of pale spots on posterior half of elytra, last four abdominal segments completely exposed, lateral margin of prothorax abruptly narrowed and distinctly sinuated in posterior third, antennal segments generally about as broad as long and distinctly moniliform ... *apatani* sp. nov.

8. Lateral margin of prothorax with two posterior denticles, a whitish testaceous spot near apex of each elytron ... *albonotatus* (Motschulsky)

Lateral margin of prothorax with one anterior and two posterior denticles, a whitish longitudinal spot from near base to apex of each elytron ... *decisus* (Walker)

Family : ELACATIDAE

Genus : *Elacatis* Pascoe

7. *Elacatis bengalensis* Sengupta

1977. *Elacatis bengalensis* Sengupta, *Oriental Ins.* 11(4) : 537.

Material examined : 2 ex. India : Arunachal Pradesh, Lower Subansiri District, nr. Lichi, 25 Km. 0-Yazali, 19-ix-1988, T. K. Pal, ex. under bark (ZSI, APFS Reg. No. 984—985).

Distribution : India : Arunachal Pradesh (New record), West Bengal (Darjeeling District).

SUMMARY

38 examples of beetles of the heteromeran families Inopeplidae and Elacatidae collected from Arunachal Pradesh are worked out. These represent 6 species including 2 new species (*viz.*, *Inopeplus jairajpurii* and *inopeplus apatani*) of Inopeplidae, and 1 species of Elacatidae. Both the families are recorded for the first time from Arunachal Pradesh. A key to the Indian species of Inopeplidae is provided.

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