

## NOTES ON GENUS *EXYPNUS* BURR (INSECTA : DERMAPTERA : CHELISOCHIDAE) WITH THE DESCRIPTION OF A NEW SPECIES FROM INDIA

G. K. SRIVASTAVA

Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053

### INTRODUCTION

At present only three species, viz. *E. pulchripennis* (Bormans, 1883); *E. koorgensis* (Hebard, 1923) and *E. chinensis* Steinmann, 1974 are known. A new species *E. nathani* is described from India. All the species are distributed in the Oriental Region except *E. pulchripennis*, which occurs in New Guinea also. But in the absence of a precise locality record from the area through literature, it needs verification.

This genus comes close to members of *Adiathetus* Burr, in general build and other morphological details but differs in having the hind femora grooved in apical 1/3 only.

### Genus *Exypnus* Burr

*Exypnus* Burr, 1907. *Trans. ent. Soc. Lond.*, **1907** : 128 (Type species : *Chelisoches pulchripennis* Bormans, 1883); Burr, 1910. *Fauna British India, Dermaptera* : 132; Burr, 1911. *Genera Insect.*, **122** : 63; Townes, 1945. *Ann. ent. Soc. Am.*, **38** : 348; Kapoor, 1967. *Agra Univ. J. Res. (Sci.)*, **16**(1) : 23; Popham and Brindle, 1968. *Entomologist*, **101** : 133; Sakai, 1971. *Dermapterorum Cat. Prael*, **6** : 31; Sakai, 1982. *Bull. Daito Bunka Univ.*, **20** : 43; Steinmann, 1975. *Acta zool. hung.*, **21** : 214; Steinmann, 1983. *Annls. hist.-nat. Mus. natn. hung.*, **75** : 141; Steinmann, 1987. *Annls. hist.-nat. Mus. natn. hung.*, **79** : 116; Steinmann, 1993. *Das Tierreich*, **108** : 63; Steinmann, 1989. *World Catalogue, Dermaptera* : 619.

Antennae 15-segments or more (generally a few apical ones broken off). Eyes shorter than the post-ocular area. Elytra and wings, both smooth, glabrous and former without any costal carina. Legs long, slender; hind femora furrowed in apical 1/3; tarsi (when viewed from above) compressed, long and slender, 1<sup>st</sup> segment 5 times longer than broad, slightly longer than 3<sup>rd</sup> segment. Pygidium in both sexes distinct.

*Type species* : *Chelisoches pulchripennis* Bormans, 1883.

*Distribution* : Oriental Region.

- 1(2). Pronotum and elytra densely punctate; male pygidium broader than long (figs. 1-4) .....  
 ..... *E. chinensis* Steinmann
- 2(1). Pronotum and elytra smooth (not punctulated); pygidium short, globular or about as long as broad
- 3(6). Male forceps at base with a bifid tooth; genitalia with parameres long, narrow, in middle external margin obtusely projecting
- 4(5). Pronotum with lateral margin straight, gently widened posteriorly, hind margin briefly rounded (figs. 5-8) ..... *E. pulchripennis* (Bormans)
- 5(4). Pronotum with lateral margin convex and hind margin well rounded (figs.9-11) .....  
 ..... *E. koorgensis* Hebard
- 6(3). Male forceps at base with a serrated flang; genitalia with paramere straight, in most part parallel sided, at apex narrowed (figs.12-16) ..... *E. nathani* sp.n.

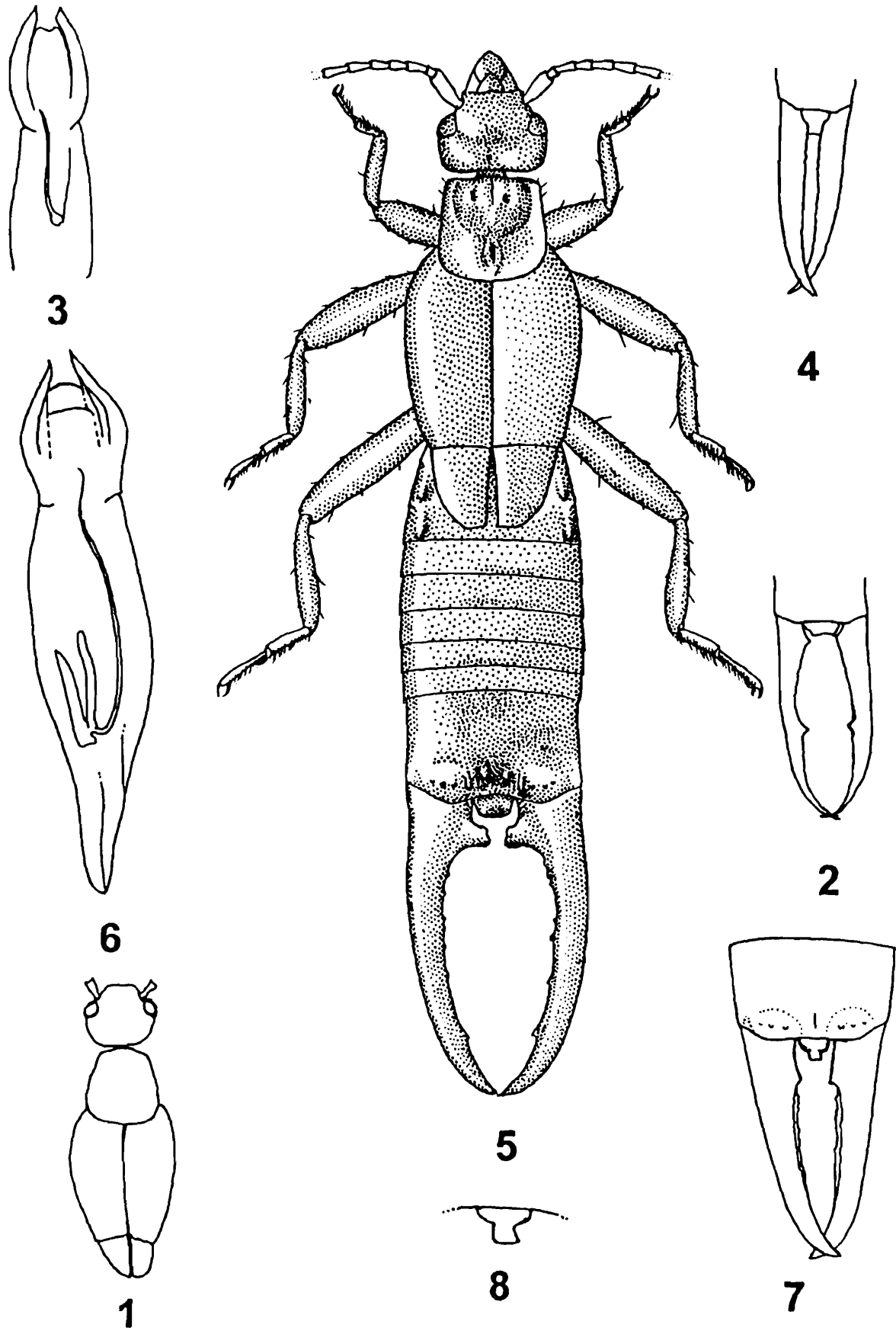
*Exypnus chinensis* Steinmann

(Figs. 1-4)

*Exypnus chinensis* steinmann, 1974. *Folia ent. hung.*, **27** : 195, fig. 21-24 (Holotype Male, Paratypes 5 Male, 7 Females; China : Fukien, Kuantun, 2300 m – Zoölogisches Forshungsinstitut und Museum, Bonn; Paratypes 3 Males & 3 Female in Hungarian Natural History Museum, Budapest); Steinmann, 1983. *Reichenbachia*, **21**(7) : 51, fig. 11; Steinmann, 1983. *Annls. hist.-nat. Mus. natn. hung.*, **75** : 141; Steinmann, 1989. *World Catalogue, Dermaptera* : 62; Steinmann, 1993. *Das Tierreich*, **108** : 64; Sakai, 1982. *Bull. Daito Bunka Univ.*, **20** : 43; Sakai, 1987. *Dermapterorum. Cat.*, **19** : 1240 (coloured photographs of Holotype Male and a female).

*Male* : Build stout. General colour black; pronotum lighter on sides; wings with a broad yellow stripe along the internal margin; legs blackish brown.

Head about as long as broad, frons convex, sutures distinct, hind margin faintly emarginate in middle. Eyes shorter than post-ocular area. Antennae 17-segmented; 1st segment stout, twice longer than broad, shorter than the distance between antennal bases; 2nd short; 3rd long and slender; 4th slightly shorter than preceding. Pronotum densely punctulate, about as long as broad, gently widened posteriorly, sides straight, hind margin rounded. Elytra and wings well developed former densely punctulate. Legs typical of the genus. Abdomen long, narrowed at base, tergites convex. Ultimate tergite transverse, tumid above bases of forceps. Forceps stout, remote at base, tapering apically, straight, incurved gently in apical 1/3, internal margin with a minute tooth near base, another stronger one at middle. Pygidium transverse, faintly emarginate in middle posteriorly. Genitalia with parameres narrow, tip acute.



**Figs. 1-8 :** *Exypnus chinensis* Steinmann, Male, 1. Anterior portion of body, 2. Ultimate tergite and forceps; 3. Genitalia; Female, 4. Ultimate tergite and forceps; *Exypnus pulchripennis* (Bormans); Male, 5. Dorsal view, 6. Genitalia; Female, 7. Ultimate tergite and forceps, 8. Pygidium, enlarged.

(Figs. 1-4 after Steinmann, 1974)

*Female* : Agrees with male in most characters except that ultimate tergite narrowed posteriorly; forceps simple, straight, inner margin with minute teeth and pygidium slightly longer than broad, narrowed posteriorly.

*Measurements:* (in mm) :

	Male	Female
Length of body	16.5-17.2	15.7-17.1
Length of forceps	6.8-7.1	5.1-5.4

*Distribution* : China (Fukien, Kuatun, 2300 m).

*Remarks* : This species can be easily separated from other species of the genus by general body colouration; densely punctate elytra and transverse pygidium.

Specimens for this species were not available for study. The above description is partly after Steinmann (1974) and based upon coloured photographs by Sakai (1987).

### *Exypuus pulchripennis* (Bormans)

(Figs.5-8)

*Chelisoche pulchripennis* Borman, 1883. *Annls. Soc. ent. Belg.*, **27** : 78, fig. 15 (Male in dorsal view), 15a (Female Ultimate tergite and forceps) (2 Males, Nos. 9314, 9318 and 1 Female, No. 9313; Indes Orientalis, Coll. Brünner – in Genova Mus.); Bormans, 1894. *Annali Mus. civ. Stor. nat. Giacomo Doria*,(2) **14** : 392; Bormans & Krauss, 1900. *Das Tierreich*, **11** : 84; Burr, 1900. *Annls. Soc. ent. Belg.*, **44** : 96; Burr, 1902. *Termeszter Fuz.*, **25** : 484; Kirby, 1904, *Syn.Cat. Orth.*: 33.

*Chelisocheella pulchripennis*; Verhoeff, *Zool. Anz.*, **25**(665) : 196.

*Exypnus pulchripennis*; Burr, 1907. *Trans. ent. Soc. Lond.*, **1907** : 128; Burr, 1910. *Fauna British India, Dermaptera* : 133, figs. 84, 84a (Burma); Burr, 1911. *Genera Insect*, **122** : 63, pl. 5, figs. 17, 17a-b; Burr, 1912. *Annln naturt. Hofmus Wien*, **26** : 92; Burr, 1917. *Ann. Soc. Ent. Fr.*, **86** : 59; Borelli, 1926, *Treubia*, **8** : 267; Brindle, 1966, *Ark. Zool.*, **18**(18) : 443 (Male; Sumatra); Popham & Brindle, 1968. *Entomologist*, **101** : 133; Vanschuytbroeck, 1969. *Bull. Inst. r. Sci. nat. Belg.*, **45**(41) : 22 (6 exs; Burma), Sakai, 1971, *Dermapterorum Cat. Prael.*, **6** : 36; Sakai, 1987, *Dermapterorum Cat.*, **19** : 1093 & 1146 (showing photographs, figs of Male, Female & other body parts; specimen labelled as 'Holotype Male BMNH' is not correct); Steinmann, 1974. *Folia ent hung.*, **32** : 163 (Sumatra & Burma); Steinmann, 1983. *Annls.hist.-nat. Mus. natn. hung.*, **75** : 141; Steinmann, 1989, *World Catalogue, Dermaptera* : 620; Steinmann, 1993. *Das Tierreich*, **108** : 65; Srivastava, 1976, *Rec. zool. Surv. India, Occ. pap.*, **2** : 48.

Build stout. General colour brownish black, shining, smooth. A few antennal segments in middle brownish white; hind femora light brown and tarsi light blackish brown; forceps light blackish brown.

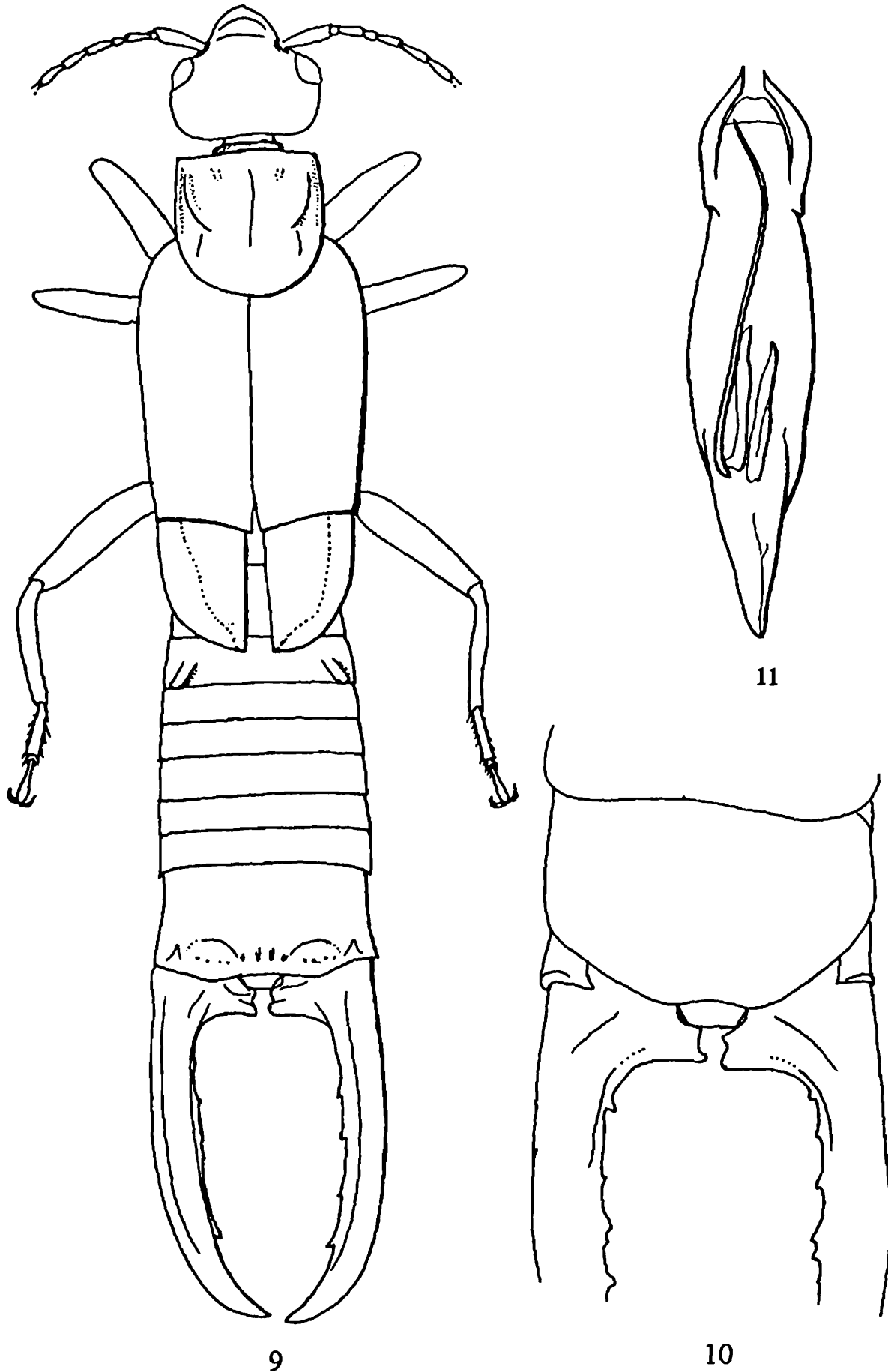
Head about as long as broad, frons and occiput raised, in place of sutures a linear depression visible, hind margin emarginate in middle. Eyes shorter than post-ocular area in length. Antennae 16-segmented; 1st stout, slightly shorter than the distance between antennal bases, narrowed at base; 2nd short, about as long as broad; 3rd long, slender, slightly longer than 4th and 5th which are stouter, gently expanded apically; remaining gradually thinning and increasing in length apically. Pronotum slightly longer than broad, smooth, gently widened posteriorly with margin rounded, prozona raised and metazona less so, median sulcus distinct in anterior half. Elytra and wings well developed, smooth, former with humeral angles prominent but without any carina, latter with inner tip yellowish. Legs long, slender, tibiae in apical third furrowed.

Prosternum with anterior margin convex and hind margin straight. Mesosternum with hind margin straight. Metasternum large, transverse, lobed between hind coxae with its hind margin emarginate. Abdomen parallel sided, weakly convex, punctate above and below, lateral tubercles on 3rd and 4th tergites distinct. Penultimate sternite narrowed posteriorly with hind margin in middle obtuse but with slight emargination in centre. Ultimate tergite transverse, gently expanded posteriorly, almost smooth (impunctate), posteriorly in middle depressed with two pairs of large compressed tubercles and several smaller ones on the low tubercles above the bases of forceps. Pygidium small, rounded, hind margin thickened and raised above. Forceps (in f. *macrolabia*), long, cylindrical attenuate, gradually curving from base to apex, inner margin near base with a depressed tooth, faintly bifid apically, afterwards provided with several small teeth ventrally of which largest one a little before apex, (in f. *cyclolabia*) branches remote at base, stout shorter, depressed, gently curved in apical third, with apices hooked; internally a little before middle armed with a sharp pointed teeth and provided with another smaller tooth dorsally, inner margin a little before apex sharp & toothed, otherwise smooth. Genitalia as seen in fig. 6.

*Female* : Agrees with males in most characters except that head in the specimens before me is dark brownish; ultimate tergite in middle posteriorly as well on the elevations above the roots of forceps with very small tubercles; penultimate sternite broadly rounded posteriorly. Pygidium at base broad, convex and subvertical, afterwards horizontal, narrowed with sides straight or diverging, hind margin subtruncate and forceps simple and straight, inner ventral margin sharp for a short distance from base, then provided a tooth followed by smaller ones up to a little before apex, above also margin with one or two teeth.

*Measurements* : (in mm) :

	Male	Female
Length of body	11.6-15.2	11.4-13.4
Length of forceps	4.2-6.5	4.4-4.8



Figs. 9-11: *Exypnus koorgensis* Hebrd, Holotype Male, 9. Dorsal view, 10. Penultimate sternite and basal portion of forceps, ventral view; 11. Genitalia.

*Material examined* : Birmanie, Carin Cheba, 900-1100 m, 2Males, 2Females, V.xii.88, 500-1000 m, 1Female, ...xii.87; Carin, Ascii Cheba, 1200-1300 m, ...1 Male, 1.88, all *L. Fea* Coll.; det. by Bormans "*Chel. pulchripennis*" Borm. and by P. Vanschuytbroeck as *Exypnus pulchripennis* (Institut royal des sciences naturelles Belgique, Bruxelles).

*Distribution*: Myanmar, Vietnam, Sumatra and Borneo.

Record from New Guinea should be treated with reserve since no precise locality record through literature is available.

### *Exypnus koorgensis* Hebard

(Figs. 9-11)

*Exypnus koorgensis* Hebard, 1923. *Mem. Dept. Agric. ent. Ser.*, **7** : 218, pl. 20, figs.14-15 (Holotype Male (macrolabic), Paratype Male (brachylabic); India : Coorg, Sidapur, 3000 ft. – deposited with Philadelphia Academy of Sciences, U.S.A.); Borelli, 1932, *Bull. Raffles Mus.*, **7** : 89 (Malaya, Parek); Sakai, 1971. *Dermapterorum Cat. Parel*, **6** : 37; Sakai, 1987. *Dermapterorum Cat.*, **19** : 1147; Srivastava, 1976, *Rec. zool. Surv. India, Occ. pap.*, **2** : 48; Steinmann, 1983. *Annl. hist.-nat. Mus. natn. hung.*, **75** : 141; Steinmann, 1987. *Annl. hist.- nat. Mus. natn. hung.*, **79** : 116; Steinmann, 1989. *World Catalogue, Dermaptera* : 620; Steinmann, 1993. *Das Tierreich*, **108** : 66.

General colour shining blackish brown, forceps somewhat reddish brown, wings yellowish brown in internal half only.

Head about as long as broad, frons weakly convex and occiput decidedly raised or tumid, sutures distinct, hind margin faintly emarginate in middle. Eyes much shorter than post-ocular area. Antennae 18-segmented, 1st equal to 2nd, 3rd and 4th together; 2nd short; 3rd long and slender; 4th slightly shorter than preceding and sub-clavate, only slightly longer than 2nd; remaining gradually increasing in length distally. Pronotum slightly longer than broad, anterior margin convex, laterally straight and depressed, hind angles and margin well rounded, prozona raised and metazona depressed, median sulcus well marked in anterior half only with a faint depression present on either side of it, close to anterior margin. Elytra glabrous, smooth, humeral angle weak, meeting along the median axis, hind margin obliquely concave. Wings well developed. Legs typical of the genus; hind tarsi with 1st segment slightly longer than third; 2nd segment produced below the third but in less than half of its length; tarsi flattened (grooved) above in apical one third only, undersurface strongly pubescent and with thick setae; claw without an arolium. Abdomen moderately convex, parallel sided, punctate, lateral fold on 3rd weakly and on 4th strongly developed. Penultimate sternite with hind margin narrowly rounded with slight emargination in middle. Ultimate tergite transverse, sides straight but postero-lateral angles slightly projecting, weakly tumid above the roots of forceps and depressed in middle with pair of compressed tubercles and several tubercles above tumid elevations

as well, hind margin feebly trisinate, laterally oblique. Forceps (in forma macrolabia) at base internally with a bifid, depressed tooth, afterwards branches slender, somewhat depressed, tapering apically and regularly curved, apices pointed and gently hooked, internal margin below with a few sharp, posteriorly directed teeth; (in f. cyclolabia) forceps a little shorter in length, internally armed with a sharp posteriorly directed triangular tooth followed by another smaller one. Pygidium small, vertical, convex above. Genitalia as seen in fig. 11.

*Material examined* : India, Coorg, Sidapaur, 3000 ft, 19.vi.1917 (T.R.N. coll.), Holotype Male, (H. 773) Philadelphia Academy of Sciences.

*Measurements*: (In mm) :

	Holotype Male (macrolabic)	Paratype Male (cyclolabic)
Length of body	13.5	12.0
Length forceps	4.5	2.9

*Distribution* : India and Sumatra.

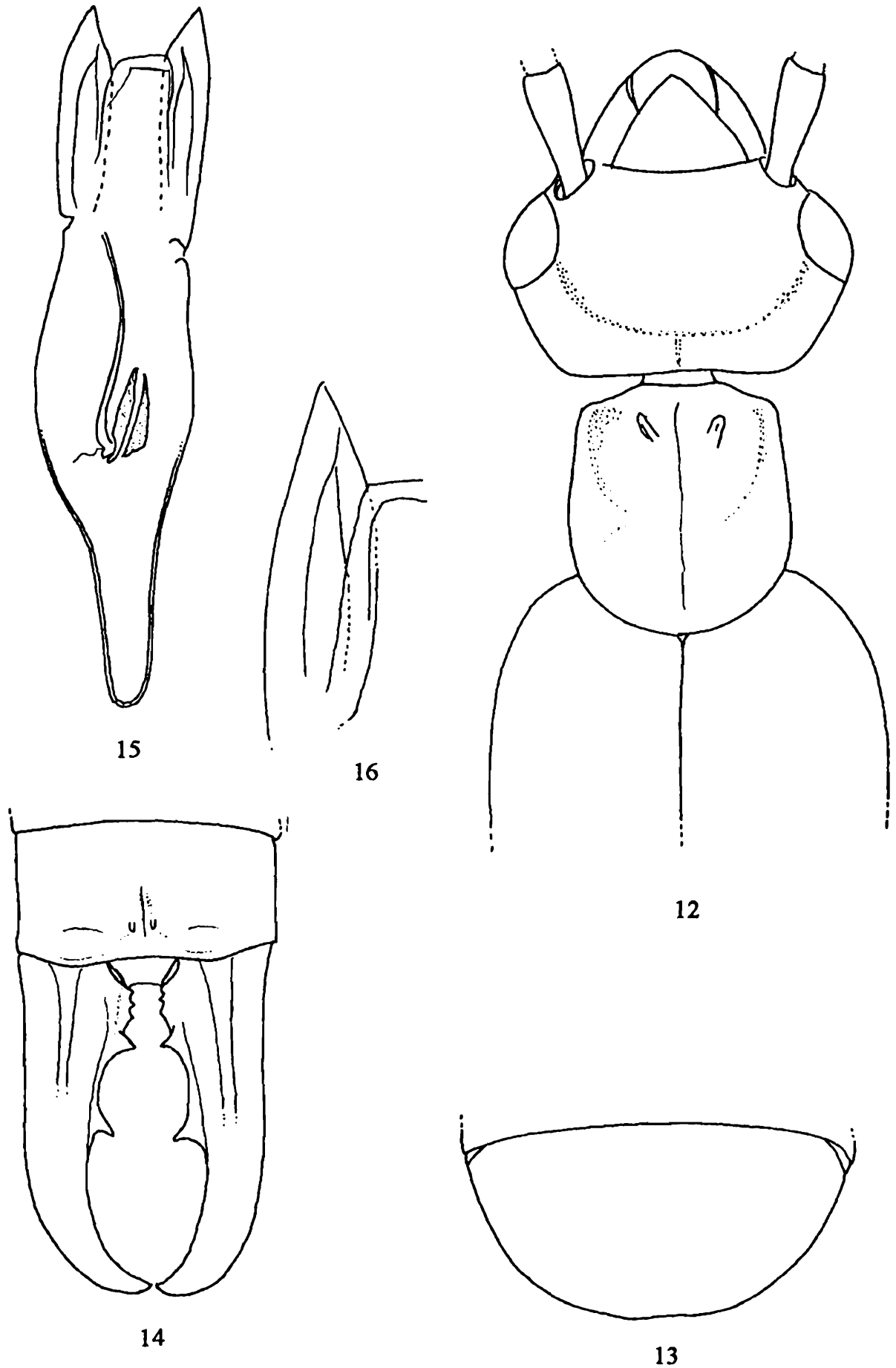
*Exypnus nathani* sp.n.

(Figs. 12-16)

*Holotype : Male* : Build stout, glabrous. General colour brownish black; pronotum in middle yellowish brown, blackish laterally; elytra and wings yellowish brown laterally darker; abdominal tergites up to 5th black on sides.

Head about as long as broad, smooth, frons and occiput raised, sutures marked by a distinct depression, hind margin faintly emarginate in middle. Antennae with basal segments of the right side present, stout, narrowed basally, shorter than the distance between antennal bases. Eyes prominent about as long as the post-ocular area. Pronotum slightly longer than broad, impunctate, gently widened posteriorly, hind angles and margin broadly rounded, median sulcus distinct, prozona weakly raised and differentiated from weakly depressed metazona. Elytra and wings well developed, smooth, former with humeral angles distinct, hind margin concave. Legs typical of the genus, hind femora with a faint groove in a little less than apical half, hind tarsi with 1st segment equal to 3rd, clad on underside with thick pubescence. Abdomen elongated, enlarged in middle, tergites weakly depressed, micro-reticulated, lateral folds on 3rd faintly and on 4th strongly marked. Penultimate sternite transverse, punctate, hind margin broadly rounded. Ultimate tergite transverse, weakly depressed, impunctate in middle, laterally with broad stripe of obscure punctation, gently sloping backwards, depressed in middle posteriorly with a pair of small compressed tubercles in middle, above the bases of forceps with weak elevations, hind margin faintly tri-sinuate, laterally oblique.





Figs. 12-16 : *Exypnus nathani* sp.n., Holotype Male, 12. Anterior portion of body, 13. Penultimate sternite, 14. Ultimate tergite and forceps, 15. Genitalia, 16. Left paramere – enlarged.

Pygidium vertical, trapezoidal, narrowed posteriorly with hind margin faintly concave, postero-lateral angles with a minute point. Forceps stout, depressed, almost straight, gently arcuate in a little less than apical half, at base separated by the pygidium, with a serrated area terminating in to a large tooth, followed by another slightly larger, triangular tooth at a little beyond middle. Genitalia with parameres lanceolate, parallel sided in most part, gradually narrowing from apical  $\frac{1}{4}$  to pointed tip; virga fine, tubular.

*Female* : Unknown.

*Measurements* : (in mm) :

	Holotype
	Male
Length of body	8.8
Length of forceps	2.35

*Material examined* : India : Karnataka, Coimbatore, 1400 ft., Holotype Male (genitalia mounted between two coverslips; and attached to the pin of the specimen), 9.xi.1961 (*P. S. Nathan* coll.); deposited in the Zoological Survey of India, Calcutta.

*Remarks* : This species comes close to *E. koorgensis* Hebard, but differs by the internal armature of Male forceps and parameres is being almost straight, narrowed at apex.

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#### REFERENCES

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