

# Notes on a collection of Dermaptera (Insecta) present in the Natural History Museum, Basel

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## Notes on a collection of Dermaptera (Insecta) present in the Natural History Museum, Basel

by G.K. Srivastava

Abstract: 132 specimens belonging to 24 species of Dermaptera from India and adjacent regions and from Saudi Arabia are treated, 2 of which are described as new: *Forficula wittmeri* n.sp. and *F. cristata* n.sp. both from India (Darjeeling District).

The present paper is based on a small collection of Dermaptera mainly from the Himalayas of India, Bhutan and Nepal, with a few exceptions from Pakistan and Saudi Arabia. Altogether 132 examples belonging to 24 species including two new species of the genus *Forficula* L. have been treated. For certain species some additional information is also provided.

All types are deposited in the collections of the Natural History Museum, Basel, except as otherwise stated.

My sincere thanks are due to the Director, Zoological Survey of India, Calcutta for providing necessary facilities and to Dr. C. Baroni Urbani for placing this interesting collection at my disposal.

### PYGIDICRANIDAE Diplatyinae

#### **Haplodiplatys urbanii** (Brindle) n. comb.

*Diplatys urbanii* BRINDLE, 1975, Entomologica Basiliensia 1: 9 (♂; Bhutan, Changra – NHM-Basel).

Material: India: West Bengal, Darjeeling Dist., Jhepi, 1300–1400 m, 2 ♂ (1 ♂ with genitalia mounted between two coverslips and pinned with the specimen), 17.V.1975; Rimbik-Ramam, 1950–2450 m, 1 ♀, 19.V.75, W. Wittmer; Sikkim, Village 9<sup>th</sup> mile nr. Ranipul, 2 ♀, 24.IV.77, Bhakta B.

According to new generic classification proposed by STEINMANN (1974) this species, as well as the following two, are referable to *Haplodiplatys* Hincks.

Distribution: India (present record) and Bhutan.

**Haplodiplatys stemmleri** (Brindle) n. comb.

*Diplatys stemmleri* BRINDLE, 1975, Entomologica Basiliensia 1: 10 (♂, Bhutan – NHM-Basel).

Material: India: West Bengal, Darjeeling Dist., Chim-Khona (Ghum), 2200 m, 2 ♂ (1 ♂ with genitalia mounted between two coverlips and pinned with the specimen), 4. VI. 75, W. Wittmer.

Distribution: India (present record) and Bhutan.

**Haplodiplatys bhowmiki** Srivastava & Saha n. comb.

*Diplatys bhowmiki* SRIVASTAVA & SAHA, 1975 (April), Ceylon J. Sci. (Bio. Sci.) 11(2): 61 (♂, ♀ and nymphs – India, Darjeeling Dist. – Zool. Surv. India, Calcutta).

*Diplatys bhutanensis* BRINDLE, 1975 (Oct.), Entomologica Basiliensia 1: 12 (♂, ♀, Bhutan – NHM-Basel), **n. syn.**

Material: India: West Bengal, Darjeeling Dist., Tonglu-Garibas, 3050–2600 m, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen) 7. VI. 75, W. Wittmer.

The description of this species and *D. bhutanensis* Brindle are almost identical but the former has the priority.

Distribution: India (Darjeeling) and Bhutan.

**Pygidicraninae****Cranopygia fletcheri** Bharadwaj & Kapoor

*Cranopygia fletcheri* BHARADWAJ & KAPOOR, 1976, Bull. Ent., New Delhi 8(2): 1 (♂, ♀, India, Khasi Hills – Indian Agric. Res. Inst., New Delhi).

Material: India: Assam, Kaziranga, 75 m, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 7–9. V. 1976, W. Wittmer and C. Baroni Urbani.

Distribution: India (Meghalaya and Assam).

**Echinosomatinae****Echinosoma convolutum** Hincks

*Echinosoma convolutum* HINCKS, 1959, Syst. mon. Derm., 2: 152 (♂, ♀, Annam, Burma and Tonkin – Types at Brit. Mus., Nat. Hist.)

Material: India: Meghalaya, Darugiri, Garo, 450 m, 1 ♀, 19. V. 76, Wittmer and Baroni Urbani.

In having the pygidium slightly longer than broad with hind margin truncate this specimen is referable here.

Distribution: India (Himalaya), Burma, Vietnam and Sumatra (in mountain regions only).

## CARCINOPHORIDAE

### Brachylabinae

#### **Metisolabis caudelli** (Burr)

Figs 1–4.

*Brachylabis caudelli* BURR, 1908, Ann. Mag. nat. Hist., (8)2: 251 (holotype ♂ in Brit. Mus., Nat. Hist.).

*Metisolabis caudelli* BURR, 1910, Fauna Brit. India: 109.

Material examined: India: West Bengal, Darjeeling Dist., Bijanbari-Ghum, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 12. V. 1975, W. Wittmer.

BURR'S (1908) original description being brief, some additional characters are given below:

General colour dark, shining brownish black. Mouth parts and antennae light brownish black and the latter with one or two preapical segments yellow. Legs light blackish brown, fore-legs uniformly coloured, middle and hind legs with femora and tibiae near apex and whole of tarsi yellow. Body punctate including head and pronotum but punctuation more pronounced on abdominal tergites.

Head triangular, convex, sutures obsolete. Eyes about as long as the post-ocular length. Antennae (partly broken) 12-segmented, 1<sup>st</sup> long and stout, distinctly longer than the distance between antennal bases; 2<sup>nd</sup> as long as broad; 3<sup>rd</sup> longer than 4<sup>th</sup>, slender; 5<sup>th</sup> and onward segments gradually increasing in length and each narrowed at base. Pronotum with sides straight, gently reflexed, strongly diverging posteriorly, posterolateral angles well rounded, hind margin truncate. Abdomen convex, heavily punctate, punctuation less pronounced near hind margin of each tergite, lateral folds on 3<sup>rd</sup> and 4<sup>th</sup> tergites weakly marked. Penultimate sternite, forceps and male genitalia as in figs 2–4.

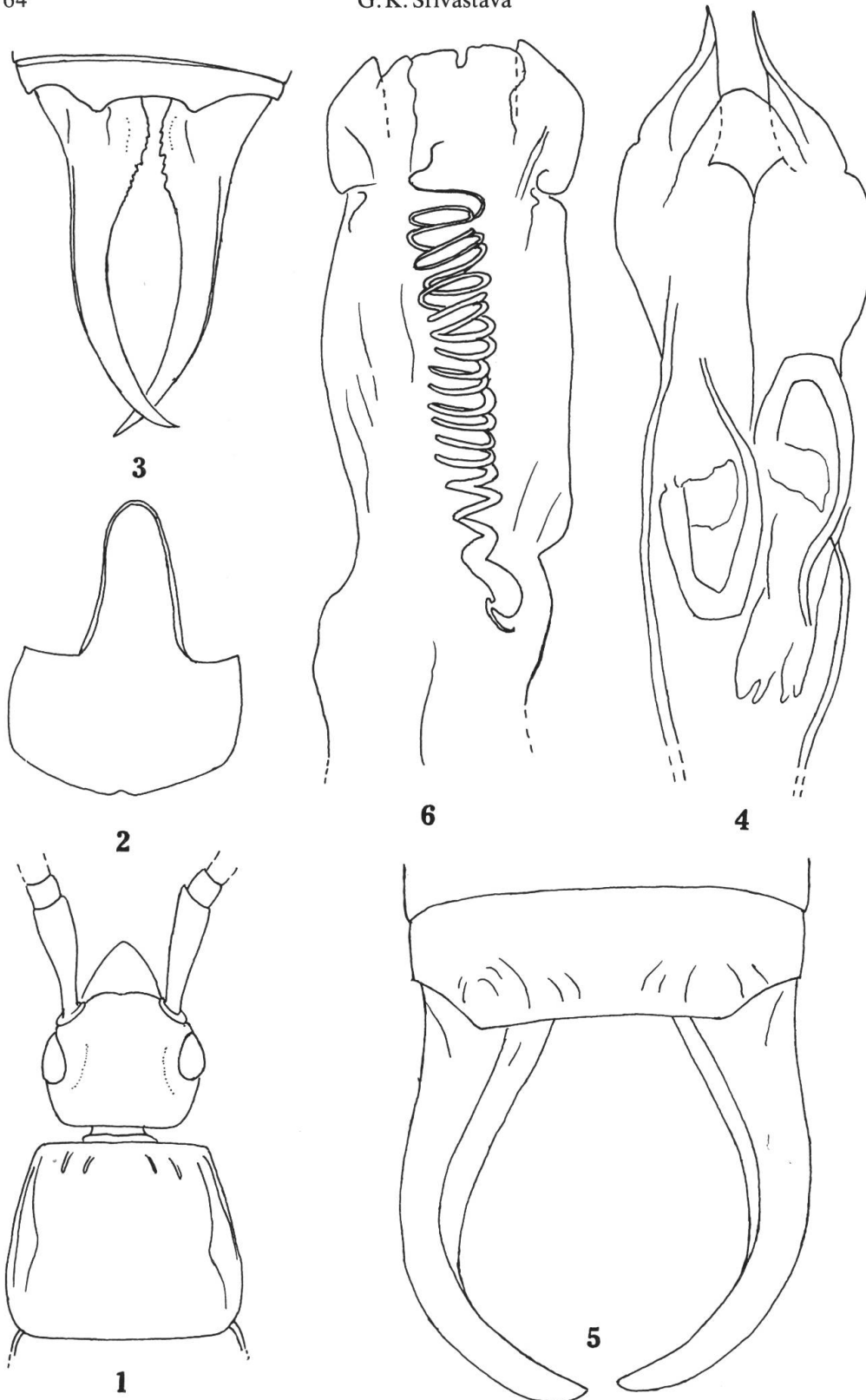
Distribution: India (Eastern Himalayas) and Burma.

### Isolaboidinae

#### **Isolaboides burri** (Borelli)

Figs 5–6.

*Pseudisolabis burri* BORELLI, 1909, Boll. Musei Zool. Anat. comp. R. Univ. Torino, 24(63): 1 (♂, ♀, India Kashmir – syntypes, Torino Mus.).



Figs 1-6:1-4. *Metisolabis caudelli* (Burr), ♂: 1, Head and pronotum. 2, Penultimate sternite. 3, Ultimate tergite and forceps. 4, Genitalia. 5-6. *Isolaboides burri* (Borelli), ♂: 5, Ultimate tergite and forceps. 6, Genitalia.

*Isolaboides burri* BORELLI, HINCKS, 1958, EOS 34: 132. – BRINDLE, 1977, Senckenbergiana biol. 58 (¾): 204.

Material: Pakistan: Muree-Abbottabad, 2200–2500 m, 1 ♂, 1 ♀, 13.VI.1977, Wittmer, Brancucci. India: Kashmir, Yusmarg, 2300–2400 m, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 5.VII.77; Pahalgam, 2200–3100 m, 2 nymphs, 7.VII.77, W. Wittmer.

Distribution: In the mountain regions of Pakistan and India, especially in the Himalaya region.

## LABIDURIDAE

### Labidurinae

#### **Labidura riparia** (Pallas)

*Labidura riparia* PALLAS, 1773, Reise Russ. Reichs., 2: 727 (Sex ?, Shores of Irtysh River, Western Siberia – location unknown).

Material: India: Meghalaya, Garo Hills, Darugiri, 450 m, 4 ♂, 7 ♀, 19.V.1976, W. Wittmer, Barano Urbani. Saudi Arabia, Wadi Al-Ammariya, XII.1977, W. Büttiker.

Distribution: World wide.

### Nalinae

#### **Nala lividipes** (Dufour)

*Forficula pallipes* DUFOUR, 1820, Ann. gener. des Phys. de Bruxelles, 4, table 1: 307 (♂, ♀, Lower Catalonia, Spain – location unknown).

*Forficula lividipes* DUFOUR, 1829, Anns. Sci. nat. 13: 340 (new name proposed).

Material: India: Assam, Gauhati, 1 ♀, 10.V.1976; Kaziranga, 75 m, 3 ♂, 2 ♀, 7–9.V.76; Meghalaya, Garo Hills, Songsek, 2 ♂, 2 ♀, 19.V.76; Darugiri, 450 m, 4 ♂, 2 ♀, 19.V.76, W. Wittmer, Baroni Urbani. Bhutan: Puntsholing, 200–400 m, 1 ♀, VIII.1975, Dorjee Khandu. Sri Lanka: Polonnaruwa, 1 ♂, 1 ♀, 9.III.1976; Wilpattu Nat. Park Manikkapola Uttu, 4 ♂, 1 ♀, 20.III.1976, Ziegler, Zölling.

Distribution: World wide.

## LABIIDAE

### Labiinae

#### **Labia minor** (L.)

*Forficula minor* LINNAEUS, 1758, Syst. Nat. (ed. 10<sup>th</sup>), 1: 423 (♀, Europe – Holotype in Linnean Collection, London).

*Labia minor*: BRUNNER, 1882, Prod. Eur. Orth., 10 (1), figs 3 A–C.

Material: India: West Bengal, Darjeeling Dist., Kalimpong, 1 ♂ (macrolabic), 20.II.1976, Umang Bhakta Bahadur.; Singamari-Barapetae Bung, 1 ♂ (microlabic), 10.V.1975, W. Wittmer.

The present material contains both microlabic and macrolabic forms. In the former, the last tergite is transverse with low tumid elevations above the base of forceps; pygidium is transverse and forceps are long and curving gradually from base to apex with internal margin crenulate ventrally. In the latter, the last tergite is provided with two compressed tubercles in middle posteriorly, pygidium is longer than broad, vertical and forceps with branches subcontiguous, depressed, straight and gently hooked at apices. The shape of penultimate sternite and ♂ genitalia in both forms are strikingly identical.

Distribution: Oriental, Ethiopian and Palaerctic Regions.

### Spongiphorinae

#### **Spongovostox semiflavous** (Bormans)

*Spongophora semiflava* BORMANS, 1894, Annali. Mus. Civ. Stor. nat. Giacomo Doria 1(2): 385 (♂, ♀, Burma – Genova Mus.).

*Spongovostox semiflavous*: BURR; 1911, Genera Insect. 122: 52.

Material: India: Assam, Kaziranga, 75 m, 1 ♀, 7.IX.1976, Wittmer, Baroni Urbani.

Distribution: Oriental and Australian (Bismark Island) Regions.

#### **Homotages feae** (Bormans)

*Anechura feae* BORMANS, 1888, Annali. Mus. civ. Stor. nat. Giacomo Doria 6(2): 445 (♂, Burma – type in Genova Mus.).

Material: India: Meghalaya, Upper Shillong, 1900 m, 1 ♀, 13.V.1976, W. Wittmer, Baroni Urbani.

Distribution: India and Nepal (Himalayas).

## FORFICULIDAE

### **Allodahlinae**

#### **Allodahlia macropyga** (Westwood)

*Forficula macropyga* WESTWOOD in Royle, 1836, Illus. Himalayas 2: 1iii (♂, ♀; by inference Himalayan Mts., Hope Department of Entomology, Oxford, England).

*Allodahlia macropyga*: BURR, 1910, Fauna Brit. India: 151.

Material: India: Himachal Pradesh, Chopal-Khangna Nallah, 2250 m, 1 ♀, 7.V.77, Wittmer, Brancucci.

Distribution: India, Nepal, Bhutan (in Himalaya), Burma, China and Thailand (in mountain regions only).

### **Anechurinae**

#### **Anechura stoliczkae** Burr

*Anechura stoliczkae* BURR, 1911, J. Asiatic Soc. Bengal (NS) 7: 792 (♂, North India, Upper Sutlez Dist., Bashahr – Vienna Mus.).

*Anechura himalayana* SINGH, 1955, Agra, Univ. J. Res. (Sci.) 4: 180 (holotype ♂, paratypes ♂, ♀; NW India, Upper Chenab Valley (Lahaul Valley) – Zool. Surv. India, Calcutta).

*Himanechura lahaulensis* SINGH, 1955, Agra Univ. J. Res. (Sci.) 4: 184 (holotype ♂, paratypes 13 ♂ (all nymphs); Upper Chenab Valley, NW Himalayas – Zool. Surv. India, Calcutta).

Material: India: Himachal Pradesh, Kothi 2500–1900 m, 4 ♂, 2 ♀, 15.V.1977, Wittmer, Brancucci.

Remarks: This species is quite common under the stones at an alt. from 2000 to 3000 m in Himalayas and is reported to be active even on snow.

It shows great variations in general body colour ranging from dark brownish black at lower altitudes to yellowish brown, often with head orange at higher altitudes. Mesolabic and macrolabic individuals are quite common.

Distribution: India, Nepal and Bhutan (In Himalayas).

#### **Anechura jubovskii** Semenov

*Anechura jubovskii* SEMENOV, 1901, Rev. Ruse. d'Entom. 1: 188 (♂, ♀; Valley of river Dras elev. 9000–11,000 ft., Ladakh, Kashmir – syntypes at Leningrad Mus.).

Material: India: Kashmir, Ladakh, Mulbekh-Fatula, 3050–3800 m, 1 ♀, 1 nymph, 20.VII.1976, W. Wittmer; Srinagar, 1600 m 1 ♀, 4 nymphs, 29.IV.76, D. Müting.

Distribution: India (NW Himalayas).

### **Forficulinae**

#### **Forficula schlagintweiti** (Burr)

*Anechura schlagintweiti* BURR, 1910, Trans. ent. Soc. Lond., 1904, 313 (♂, ♀; Tibet, Lahaol Dohrn coll., Paratypes ♂, ♀; Darjeeling, NE India – Paris and Brit. Mus. Nat. Hist.).



Material: India: West Bengal, Darjeeling Dist., Tonglu-Garibas, 3050–2600 m, 6 ♂, 3 ♀, 7. VI. 75; Sandakphu, 3500–3600 m, 3 ♂, 5 ♀, 8. VI. 75, W. Wittmer.

This species commonly occurs in large numbers under the stones in the Himalayas at an altitude between 2000 and 3000 m.

General colour is uniform black but occasionally in a population brownish yellow individuals are met with, which represent teneral forms.

Distribution: All along the Himalayas of India, Nepal, Bhutan and NWF Prov., Chitral in Pakistan.

### ***Forficula bhutanensis* Brindle**

*Forficula bhutanensis* BRINDLE, 1975, Entomologica Basiliensia 1: 43 (♂, ♀; Bhutan – holotype ♂ in NHM-Basel, paratypes ♂, ♀, NHM-Basel, Manchester and Brit. Mus., Nat. Hist.).

Material: India: West Bengal, Darjeeling Dist., Tonglu-Garibas, 3050–2600 m, 7 ♂, 9 ♀, 7. VI. 1975, Tiger Hill, 2150 m, 1 ♀ (brachypterous), 6. VI. 1975, W. Wittmer.

This species generally occurs in association with *Forficula schlagintweiti* (Burr) above 3500 m in the Himalayas under the stones. It can be easily separated from the latter by the general body colour which is somewhat light brownish black, pronotum more strongly transverse and forceps deplanate internally in basal one fourth with branches strongly curved, but curvature not regular, it is somewhat abrupt in middle or obtusely bent.

One ♀, from Tiger Hill represents a brachypterous form which was hitherto not reported for this species.

Distribution: India, Nepal and Bhutan (Himalayas).

### ***Forficula planicollis* Kirby**

*Forficula planicollis* KIRBY, 1891, J. Linn. Soc. (Zool.) 23: 225 (♀, North India-Brit. Mus. Nat. Hist.) – BURR, 1904, Trans. ent. Soc. Lond., 1904: 320 (♂, ♀, India, Darjeeling).

*Forficula ambigua* BURR, 1904, Trans. ent. Soc. Lond. 1904: 321 (♂, ♀, Darjeeling-syntypes, Paris Mus.).

*Forficula lebongae* HEBARD, 1923, Mem. Dep. Agric. India, Ent. Ser. 7: 226 (♂, India, Darjeeling-Philadelphia Academy of Sciences).

*Forficula bhatnagari* GANGOLA, 1965, Entomologist: 229 (♂, Nainital-location unknown).

*Forficula gardneri* KAPOOR, BHARADWAJ AND BANERJEE, 1972, Bull. Ent., New Delhi 12 (1): 37 (♂, ♀, India, Darjeeling Dist.-Forest Res. Inst., Dehra Dun).

Material: India: Meghalaya, Umtyangar, Cherrapunji, 1 ♀, 16. V. 76; Upper Shillong, 1900 m, 1 ♂, 13. V. 1976, West Bengal, Darjeeling Dist., Lopchu, 1 ♂, 9. V. 1975,

Sandakphu, 3500–3600 m, 1 ♂, 2 ♀, 8. VI. 1975; Chimkhona (Ghum), 2200 m, 2 ♂, 4. VI. 75. Nepal: Jiri, 1800–1900 m, 1 ♀, 27. V. 75, all W. Wittmer and Baroni Urbani.

It exhibits great variations in general colour, body size, form of forceps and pygidium.

SRIVASTAVA & SAHA (1975) discussed in some detail the variations occurring in this species and in the light of these SRIVASTAVA (1976) synonymised *F. lebongae* Hebard.

It resembles greatly in the form of forceps, especially large sized male, with *F. bhutanensis* Brindle, but differs in having the pronotum weakly transverse, abdominal tergites strongly punctate and basal lamellation of forceps strongly serrated internally.

Distribution: In the mountain region of India, Nepal, Bhutan, Burma and South China.

### **Forficula beelzebub** (Burr)

*Chelisoche beelzebub* BURR 1900, Ann. Soc. Ent. Belge 44: 51 (♂, India, Kurseong – holotype ♂ at Museum Inst. Royal des Sciences Belgique, Bruxelles).

*Forficula beelzebub*: BURR, 1904, Trans. ent. Soc. Lond. 1904: 322.

Material: India: Meghalaya; Shillong 1 ♂, 12. V. 1976; Upper Shillong, 1 ♂, 13. V. 1976; Mawphlong, 1850 m, 1 ♀, 15. V. 1976; Assam; Kaziranga, 75 m, 1 ♀, 7. IX. 1976; West Bengal; Darjeeling Dist., Ramam, 2400–2500 m, 1 ♂, 19. V. 1975; Himachal Pradesh, Manali, 2000–2300 m, 1 ♂, 2 ♀, 14. V. 1977, Chopal-Khangna Nallah, 2000–2300 m, 1 ♀, 7. V. 1977, all W. Wittmer, C. Baroni Urbani and Brancucci.

Distribution: Very common, all along the Himalayas of India, Nepal and Bhutan.

A single record from Africa, Kenya (BRINDLE, 1973).

### **Forficula lucens** Brindle

Fig. 7.

*Forficula lucens* BRINDLE, 1975, Ent. Basil. 1: 48 (♂, ♀, Bhutan-holotype ♂, NHM-Basel, and paratypes ♂, ♀, NHM-Basel, Manchester and Brit. Mus. Nat. Hist.).

Material: India: West Bengal, Darjeeling Dist., Jhepi, 1300–1400 m, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 1 ♀, 22–23. V. 1975, W. Wittmer.

Following are some additional characters: prosternum longer than broad, narrowed posteriorly, constricted between fore coxae, mesosternum about as long as broad, sides straight, gently diverging posteriorly, hind margin rounded and metasternum transverse, narrowed between hind coxae, hind margin truncate. Abdominal puncturation separated from each other by a space bigger than their own diameter. Sides of segments rounded.

Male genitalia as in figure 7.

This species comes very close to *F. jayarami* Srivastava, from India, Arunachal Pradesh but differs in being slightly smaller in size; sides of abdominal segments 6<sup>th</sup> to 9<sup>th</sup> punctate but not rugose and basal dilatation of forceps less extensive in width and slender in apical half.

Distribution: India (present record) and Bhutan.

**Forficula wittmeri** n. sp.

Figs 8–15.

♂: General colour dark brown with traces of black on certain body parts; antennae clear yellow; elytra, wings and abdominal tergites with a metallic sheen.

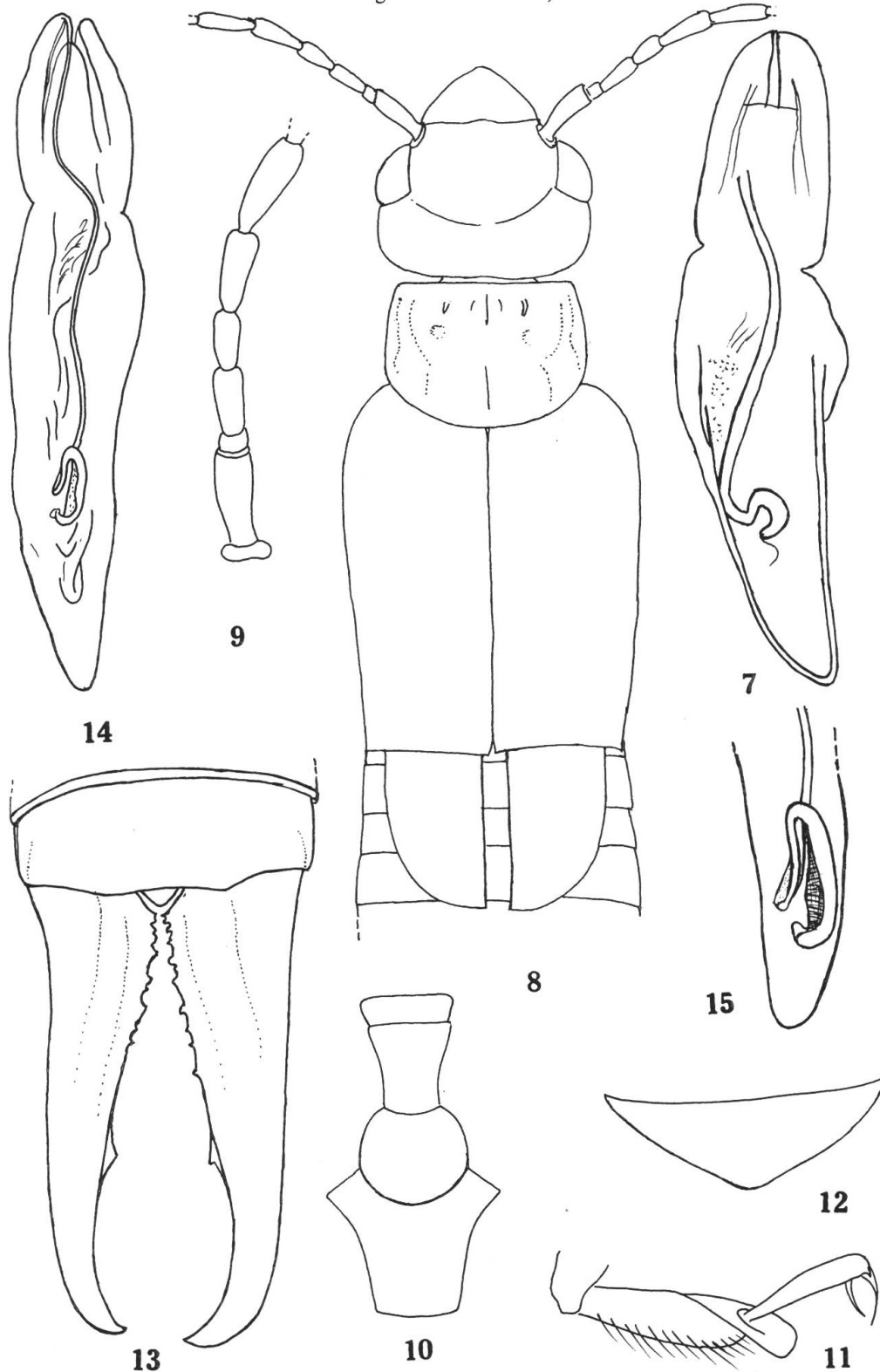
Head slightly broader than long, smooth. Frons convex. Sutures almost obsolete. Hind margin feebly emarginate in middle. Eyes large, black, only slightly shorter than the post-ocular length. Antennae (partly broken) 12-segmented, 1<sup>st</sup> segment stout, narrowed at base, shorter than the distance between scapi; 2<sup>nd</sup> about as long as broad; 3<sup>rd</sup> long and slender; 4<sup>th</sup> stouter than preceding and slightly shorter; 5<sup>th</sup> longer than 3<sup>rd</sup>, stouter, remaining gradually increasing in length and thin, especially a few apical ones.

Pronotum slightly broader than long, sides straight, gently reflexed and diverging, hind angles and margin broadly rounded, median sulcus distinct, prozona well demarcated from depressed metazona.

Legs typical of the genus, tarsi clad with golden yellow hairs on the underside, hind tarsi with 1<sup>st</sup> segment about as long as the third; 2<sup>nd</sup> lobed with hind margin entire.

Elytra and wings well developed, smooth, latter with inner margin faintly yellowish.

Abdomen weakly convex, slightly narrowed at base, afterwards almost parallel sided, lateral folds on 3<sup>rd</sup> and 4<sup>th</sup> tergites weakly developed; punctulation fine and distantly placed, sides of segments rounded. Penultimate sternite with hind margin rounded but obtuse in middle. Ultimate tergite strongly transverse, with a few shallow punctures near basal margin, sides faintly diverging posteriorly, posterolateral angles a little projecting, feebly sloping backwards, broad, low tumid elevation present above the root of forceps and the area in the middle weakly depressed, hind margin faintly trisinate, laterally feebly oblique. Pygidium almost triangular. Forceps with branches contiguous, depressed, almost straight, gently incurved a little before apex, internally lamellate in a little less than basal half, lamellation dying out gradually backwards, tapering apically with tip pointed, internal margin



Figs 7–15: 7. *Forficula lucens* Brindle, ♂, genitalia; 8–15. *Forficula wittmeri* n.sp., holotype ♂: 8, Anterior portion of body. 9, A few basal antennal segments, enlarged. 10, Sternal plates. 11, Hind tarsus. 12, Penultimate sternite. 13, Ultimate tergite and forceps. 14, Genitalia. 15, A portion of genitalia enlarged showing basal vesicle.

dentate in a little less than basal half, afterwards unarmed except for a small tubercle placed ventrally at apical one third.

Genitalia with parameres narrowed at apex with tip obtuse, virga long and undulate.

Length: body: 9.4–10.2 mm; forceps: 3.7–5.1 mm.

♀: Unknown.

Types: Holotype ♂ (NHM-Basel) (Genitalia mounted between two coverslips and pinned with the specimen), paratype 1 ♂ (Zoological Survey of India, Calcutta). India, West Bengal, Dist. Darjeeling, Rim-bick-Lodhama, 2350–1100 m, W. Wittmer.

On the basis of shape of pygidium and forceps it comes close to *Forficula ornata* (Bormans) and *F. greeni* Burr, amongst the Oriental species and it can be easily separated from them by the following key:

1. General colour uniform blackish brown with a metallic lustre, size larger (13.1–15.3 mm including forceps); pronotum transverse, sides straight, slightly diverging posteriorly with postero-lateral angles and margin well rounded.
 

**F. wittmeri** n. sp.
- General colour yellowish brown with legs and wings yellow and elytra with a yellow spot near shoulder, shining but without metallic lustre; size shorter (9.5 to 11 mm including forceps); pronotum about as long as broad or weakly transverse, sides convex but converging posteriorly . . . . . 2
2. Body especially forceps with long pubescence; pronotum strongly narrowed posteriorly with hind margin obtusely rounded; abdomen finely and sparsely punctulate; forceps externally constricted in basal half, internally finely dentate in basal two thirds.
 

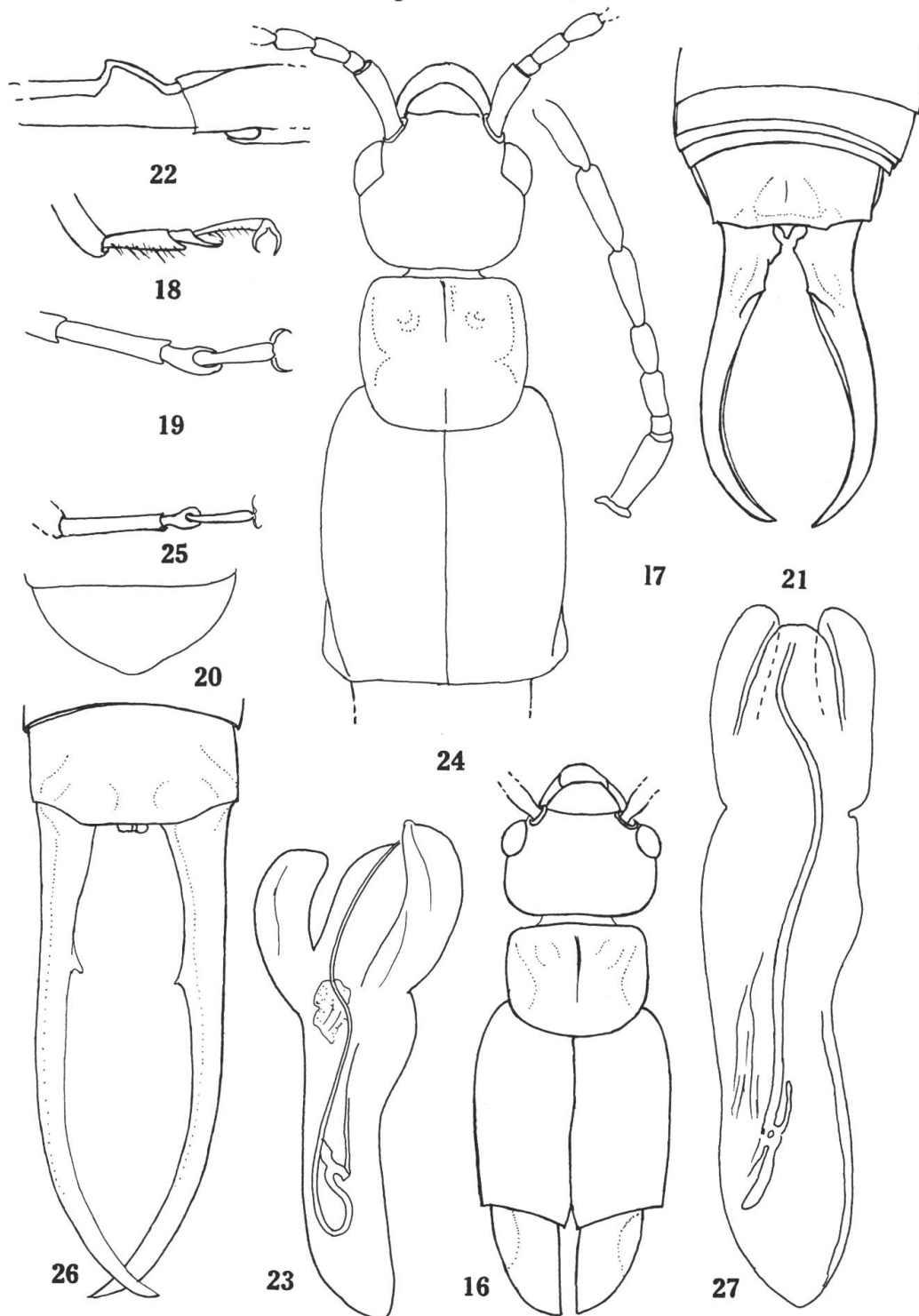
**F. ornata** (Bormans)
- Body without pubescence; pronotum only slightly contracted posteriorly with hind margin broadly rounded; abdomen heavily and densely punctate; forceps externally straight in basal half, internally strongly dentate in basal half (*f. mesolabia*) to two thirds (*f. macrolabia*) approximately.
 

**F. greeni** Burr

**Forficula cristata** n. sp.

Figs 16–23.

♂: General colour dark brownish black, a few ante apical antennal segments lighter in colour; pronotum laterally; apical one-fourth of tibia; whole of hind first tarsal segment and extreme base of 3<sup>rd</sup> seg-



Figs 16–27: 16–23. *Forficula cristata* n.sp., holotype ♂: 16, Anterior portion of body without antennae and legs. 17, A few basal antennal segments enlarged. 18, Hind tarsus in lateral view. 19, Hind tarsus in dorsal view. 20, Penultimate sternite. 21, Ultimate tergite and forceps. 22, A portion of ultimate tergite and forceps in lateral view showing basal vertical tooth. 23, Genitalia. 24–27. *Kosmetor vishnu* (Burr), ♂: 24, Anterior portion of body, showing a few basal antennal segments and without legs. 25, Hind tarsus in dorsal view. 26, Ultimate tergite and forceps. 27, Genitalia.

ment and the tip of forceps yellowish; wings with an oblong yellow spot along the external margin in basal half.

Head about as long as broad, smooth, sutures obsolete, frons convex. Eyes small, about half as long as the post-ocular length. Antennae 12-segmented; 1<sup>st</sup> stout, narrowed basally, expanded apically, slightly shorter than the distance between antennal bases; 2<sup>nd</sup> about as long as broad; 3<sup>rd</sup> long and cylindrical; 4<sup>th</sup> about as long as preceding, gently expanded apically; 5<sup>th</sup> onwards segments increasing in length and thinning.

Pronotum weakly transverse, smooth, sides gently reflexed and feebly convex in middle, hind margin and posterolateral angles rounded, median sulcus distinct, prozona raised and well differentiated from flat metazona.

Elytra and wings smooth, well developed. Prosternum longer than broad, narrower posteriorly, constricted between fore-coxae; mesosternum about as long as broad; metasternum transverse, narrowed between hind coxae, hind margin truncate. Legs with fore-femora swollen, middle and hind ones compressed; hind tarsi with first segment compressed, about one and half times longer than the 3<sup>rd</sup>; 2<sup>nd</sup> lobed with faint emargination in middle posteriorly.

Abdomen spindle shaped, convex, obscurely punctate, lateral folds on 3<sup>rd</sup> and 4<sup>th</sup> tergites moderately developed. Penultimate sternite obtusely rounded in middle posteriorly. Ultimate tergite transverse, smooth, moderately sloping and gently contracted backwards, posterior half in middle with a triangular depression, postero-lateral angles a little prominent, hind margin trisinate, feebly oblique laterally. Pygidium short, triangular, posteriorly sharply pointed. Forceps with branches subcontiguous at base, depressed, gradually curving from base to apex, internally at base deplanate followed by a triangular vertical lamellation, apical point of which directed posteriorly, afterwards unarmed and tapering.

Genitalia as in figure 23. Length: body: 8.9 mm; forceps: 3.5 mm.

♀: Unknown.

Types: Holotype ♂ (NHM-Basel) (genitalia mounted between two coverslips and pinned with the specimen), India, West Bengal, Darjeeling Dist., Lebong, 1600–1860 m, 2. VI. 1975, W. Wittmer.

In having the antennal segments stout with 3<sup>rd</sup> about as long as the fourth and the mesosternum quadrate it is referred to the genus *Forficula* L. It differs from all other Indian species by the shape of forceps especially by the presence of a vertical triangular tooth near base. The

overall shape of forceps is reminiscent of *Guanchia bicarinta* Hincks, but the latter is quite distinct by having abbreviated elytra; more heavily punctate abdomen and the basal vertical crest of forceps somewhat different in shape.

### Eudohrniinae

#### **Kosmetor vishnu** (Burr)

Figs 24–27.

*Apterygida vishnu* BURR, 1904, Trans. ent. Soc. Lond. 1904: 319 (♂, India Borealis, Darjeeling-Syntypes, Paris Mus.).

*Kosmetor vishnu*: BURR, 1907, Trans. ent. Soc. Lond. 1907: 123.

Material: India: West Bengal, Darjeeling Dist., Lopchu, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 9.V.1975; Chim-Khona (Ghum), 2200 m, 1 ♀, 4.VI.75, W. Wittmer.

The present material agrees well with the original description of the species but the following additional information is provided.

♂: Finely pubescent, more pronounced on under side. Antennae 12-segmented, 1<sup>st</sup> stout, gently expanded apically, slightly shorter than the distance between antennal bases; 2<sup>nd</sup> about as long as broad; 3<sup>rd</sup> long, cylindrical; 4<sup>th</sup> a trifle shorter than the preceding but stouter and gently expanded apically; 5<sup>th</sup> and onward segments gradually increasing in length and stouter and each expanded apically except the last one which is thin and narrowed at both the ends. Eyes distinctly shorter than the postocular length.

Pronotum slightly broader than long, anterior margin straight, sides depressed, feebly convex, hind margin rounded. Wings dark brownish black with an orange yellow spot in basal half externally. Prosternum longer than broad, narrower posteriorly, gently constricted between forecoxae. Mesosternum slightly longer than broad, hind margin rounded. Metasternum transverse, narrowed between hind-coxae, hind margin truncate. Legs with fore-femora swollen; hind tarsi with 1<sup>st</sup> and 3<sup>rd</sup> segments in the ratio of 7:4; 2<sup>nd</sup> lobed. Penultimate sternite transverse, hind margin broadly rounded posteriorly, punctulate. Pygidium vertical, about as long as broad, somewhat narrowed posteriorly, hind margin rounded, convex above with a median longitudinal impressed line.

Genitalia as in figure 27.

♀ (nov.): Agrees with the male in most characters except that the penultimate sternite is obtusely rounded posteriorly; ultimate tergite



contracted posteriorly; pygidium short, narrowed posteriorly and forceps simple and straight, internally unarmed.

Distribution: India (Darjeeling Dist.) and Malaysia (Malaya).

### Opisthocosmiinae

#### **Timomenus lugens** (Bormans)

*Opisthocosmia lugens* BORMANS, 1894, Annali. Mus. Civ. Stor. Nat. Giacomo Doria 14(2): 398 (♂, ♀, Carin Cheba; Carin Asciiui, Burma-Genova Mus.).

*Timomenus lugens*: BURR, 1910, Fauna Brit. India: 198.

Material: India: West Bengal, Darjeeling Dist., Jhepi, 1300–1400 m, 1 ♂, 22.V.75; Rimbick-Lodhama, 2300–1100 m, 1 ♂ (no date); all W. Wittmer.

Distribution: India (North Bengal, Sikkim and Meghalaya); Burma, Malaysia and China (Yunnan).

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