

**FOUR NEW SPECIES OF CAENOCRYPTUS THOMSON
FROM INDIA, MYANMAR AND TAIWAN**

(HYMENOPTERA : ICHNEUMONIDAE)

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INTRODUCTION

The genus *Caenocryptus* Thomson belongs to the tribe Ischnini of the subfamily Mesosteninae, family Ichneumonidae. It contains medium sized species with moderately stout body measuring about 7-10 mm in length. This genus has been reported from Holarctic Region. Townes (1970 : 190) reported 3 undescribed species from Mexico and one from Myanmar

This is the new record of this genus from India and Taiwan. Four new species from India (Himachal Pradesh and Jammu & Kashmir), Myanmar and Taiwan are described. Homotype female and a determined male of *Caenocryptus shikokuensis* (Uchida) from Japan was available for study. It is included here in the key and the text for comparison with the Oriental species.

SYSTEMATIC ACCOUNT

Genus *Caenocryptus* Thomson

1873. *Caenocryptus* Thomson, *Opuscula entomologica*, 5 : 494.

Type : *Cryptus rufiventris* Gravenhorst. Designated by Viereck 1914.

1952. *Habrocryptus* Uchida, *Insecta Matsumurana*, 18 : 19.

Type : *Habrocryptus shikokuensis* Uchida. Original designation. Synonymized by Townes 1970 : 189.

1954. *Pseudischnus* Walkley, *Jour. Washington Acad. Sci.*, 44 : 219.

Type : *Ischnus oregonensis* Cushman. Original designation.

Body of moderate proportions. Clypeus small, about 2.2x as wide as long, strongly convex, subpyramidal in profile, its apex convex or truncate without a median tooth or irregularity. Malarspace about 0.9x as long as basal width of mandible. Mandible of moderate length, its lower

tooth slightly shorter than upper. Apical 0.3 of female flagellum not or only slightly thickened, not flattened below, weakly tapered towards the tip. Mesoscutum mat or more or less polished, with fine and close punctures; notaulus sharp, reaching to behind center of mesoscutum. Propodeal (Fig. 1c) spiracle round or short elliptic; propodeum rather narrow or convex, its apical carina forming weak sublateral crest, often weak and rarely absent in the middle. Base of hind coxa deep, without a groove, its lower basal corner sometimes polished and hairless. Wing as shown in figure 1a, b, with hardly any variation. First tergite without a lateral tooth at the base, its spiracle near apical 0.34; dorso-lateral and ventro-lateral carinae distinct, usually complete but weak, its median dorsal carinae moderately strong, reaching to behind spiracle. Second tergite

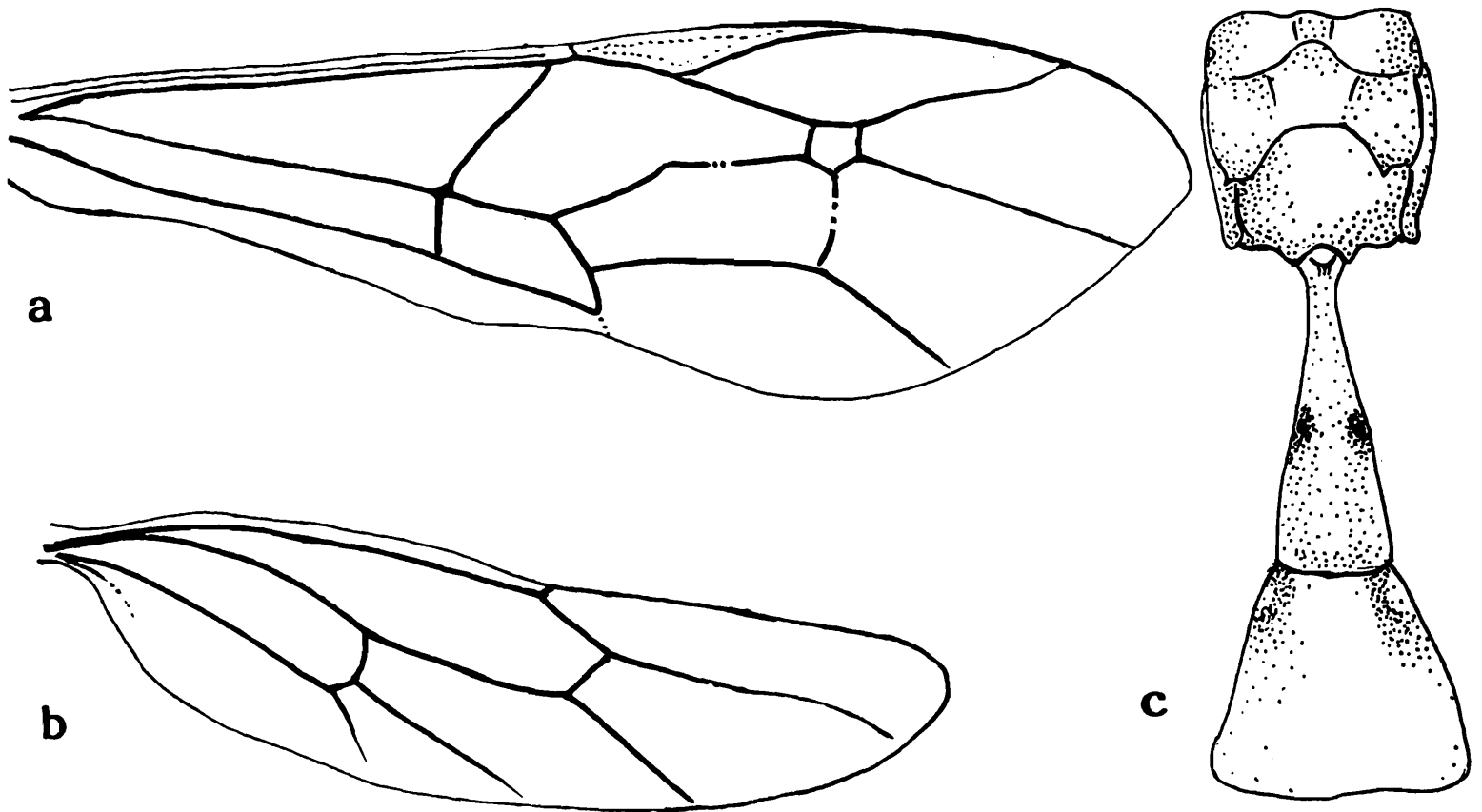


Fig. 1. *Coenocryptus* Thomson : a, b, fore and hind showing wing venation; c, dorsal view of propodeum and first tergite.

mat, with fine punctures. Ovipositor sheath about 0.6 to 1.8x as long as hind tibia. Ovipositor moderately stout, somewhat compressed its tip of moderate length to short with a distinct nodus.

Caenocryptus is rather a distinct genus easily distinguished by the absence of lateral tooth at the base of first tergite; subapical 0.6 of mediella vein weakly arched; propodeal spiracle rounded or short elliptic; clypeus without median tooth and ovipositor tip short with distinct nodus.

Host : Known host includes cocoons of sawflies and various Lepidoptera.

Key to the species of *Caenocryptus*

- 1 Antennal flagellum black and without a whitish band. Legs also black, except hind femur red. Frons strongly mat and with very minute dense and weak punctures

1. *rugosus*, sp. nov.

 Antennal flagellum with a white band. Legs almost entirely black or variously marked with yellow or red. Frons mat and rugose2
2. Body and legs almost entirely black, except antennal band and face, frons and temple along the orbit are marked. Face minutely and densely punctate. Frons with a median fine longitudinal groove. Pronotum trans-rugose. Scutellum subpolished, with minute, closely placed punctures. Mesopleurum, metapleurum and propodeum moderately strongly wrinkled**2. *shikokuensis*** (Uchida)

 Body and legs not entirely black, variously marked with yellow and red3
3. Ovipositor tip short, upper valve heavy, evenly arched between apex and nodus, not flattened. Speculum on mesopleurum with small deep and dense punctures. (Pronotum trans-rugose. Scutellum mat, minutely and densely punctate. Mesopleurum, metapleurum and propodeum rugoso-wrinkled)**3. *reticulatus*, sp. nov.**

 Ovipositor tip long, both the valves equally strong, upper valve flattened at apex. Speculum on mesopleurum rugose4
4. Pronotum largely moderately strongly transversely rugoso-striate. Mesopleurum and metapleurum strongly rugoso-wrinkled. Punctures on scutellum not dense and not running into striations. Hind tarsus with apical 0.2 of first and second to fourth segments wholly whitish.....**4. *striatus*, sp. nov.**

Pronotum strongly mat, weakly rugose in scrobes. Mesopleurum and metapleurum weakly rugose. Punctures on scutellum strong and dense, running into fine striations. Hind tarsus largely reddish-yellow **5. *burmensis*, sp. nov.**

1 ***Caenocryptus rugosus*, sp. nov.**

This is a distinct species having antennal flagelum black. Legs also black, except the hind femur. Frons strongly mat and with very minute dense weak punctures.

Female : Face moderately strongly granulated, except for a median oval area near antennal bases smooth and shiny. Clypeus subpolished, its basal 0.6 sparsely punctate, apical 0.4 smooth and shiny with a few scattered punctures. Malarspace granulose. Mandible ruguloso-punctate. Frons and vertex strongly mat, with minute dense weak punctures. Temple subpolished, with small close to moderately spaced punctures. Pronotum largely rugoso-wrinkled, its upper 0.25 strongly granulated, pronotal collar and lower corner subpolished and sparsely and shallowly punctate. Epomia short, but moderately strong. Mesopleurum subpolished and rugose, lower half of speculum shiny with a few coarse punctures, area anteriorly above sternaulus and mesosternum strongly granulose, dull; prepectal carina extending 0.8 the height of mesopleurum, subtegal ridge shiny, minutely punctate. Scutellum and metascutellum dull, granuloso-punctate, lateral carina of scutellum more or less confined to its base. Metapleurum mat, finely rugose, juxtacoxal carina absent. Propodeum between basal carina and apex mat, moderately strongly rugoso-wrinkled, basad of basal carina strongly granulose. First tergite strongly mat, postpetiole with a few setiferous punctures. Ovipositor sheath about 0.9x as long as hind tibia.

Black. Apical antennal segments with reddish hue. The following are yellow : face with a small median mark, orbital mark on face, frons, vertex and also temple (Fig. 2a) (this orbital mark sometimes not continuous, interrupted near malarspace and above at temple), upper margin of pronotum and collar narrowly, sometimes these are very faint and indistinct, scutellum with or without an oval mark, subtegal ridge with or without a mark. Legs in general blackish-brown to black. Fore and middle femora reddish-brown apico-basally. Hind leg (Fig. 2b) with femur red, tarsus colour variable, its apical half of second to fourth segments whitish, sometimes totally dark brown or blackish. Wings clear hyaline.

Male Essentially similar to female, except more slender and weakly sculptured, body largely subpolished. Face and clypeus minutely and densely punctate. Temple minutely and sparsely punctate. Metapleurum finely wrinkled. First to third abdominal tergites mat, with minute sparse punctures. Nervulus in fore wing slightly basad of basal vein.

Colour similar to female. The following are yellow : face and clypeus wholly, vertex and temple along the eye margin, scape of antennae in front, oval mark on scutellum, pronotal collar

and upper margin of pronotum, subtegular ridge, tegula, fore and middle coxae and their first trochanteral segment. Legs reddish or reddish-brown; hind coxa and trochanter black, femur red, tibia brown, tarsus brownish at base, rest whitish.

Length : Female, 7-10 mm. Fore wing 5.5-7.2 mm. Ovipositor sheath 2-2.5 mm. Male, 7 mm. Fore wing 5.5 mm.

Holotype Female, INDIA : HIMACHAL PRADESH Ahla, 2286 m, 14. ix.1971 A.K. Gulati, No. JD.129. *Allotype* Male, INDIA : HIMACHAL PRADESH : Dalhousi, 2132 m, 27.iv.1971, Coll. Tekchand, No. DH 11. *Paratype* 8 Females. INDIA : HIMACHAL PRADESH Ahla, 2286 m, 1 F, 3.v.1971, 1F, 3.x. 1971, Colls. D. Ram & Sukh Dev Nos. DH 123 & J.D. 199; 3 F, 4.vii-26.x.1971, Malaise trap, collection, trap No. 1,2,3. Khadralla, 2771 m, Pabar Range, Bashahr, 1 F, 25.vi. 1950, Coll. G.D. Bhasin. JAMMU & KASHMIR : Gulmarg in Kashmir Himalaya, 2500m, 1 F, 20.vi. 1966, 1 F, 17.vi. 1966, Coll. V.K. Gupta, Colln. Nos. 203 and 197. (all in Z.S.I., Calcutta except 1 F, loc. as holotype, 3.x.1971. Sukh Dev, coll. No. JD199 in AEI, Florida).

Distribution : India : Himachal Pradesh and Jammu & Kashmir.

2. *Caenocryptus shikokuensis* (Uchida)

1936. *Habrocryptus shikokuensis* Uchida, *Insecta Matsumurana*, **11** : 8. M. F. des.Type : F, Japan : Kamegamori in Kochi (SAPPORO); Japan : Kodakasayama, Hongawa, Teragawa all in Kochi.

1952. *Habrocryptoides shikokuensis* Uchida, *Insecta Matsumurana*, **18** : 19. Syn.

1957. *Trachysphyrus shikokuensis* : Townes, *Proc. Ent. Soc. Washington*, **59** : 108.

1970. *Caenocryptus shikokuensis* : Townes, *Mem. Amer. Ent. Inst.*, **12** : 190.

This is a distinct species which differs with most of the Oriental species in its colour and sculpture. Body and legs almost entirely black, except antennal band and face, frons and temple along the orbit marked, yellow. Frons with a fine median longitudinal groove. Mesopleurum, metapleurum and propodeum moderately strongly wrinkled.

Female : Face subpolished, mat, finely and densely punctate, medially raised. Clypeus shiny, with small closely placed punctures. Malarspace granulose, 1.0x the basal width of mandible. Mandible subpolished, finely and closely punctate. Frons mat and subpolished, weakly rugose with small close setiferous punctures, with a fine median groove extending from median ocellus. Vertex mat, with very fine dense punctures. Temple subpolished, with small, closely placed punctures. Pronotum in the middle with coarse transverse rugae, above mat with fine, close and shallow punctures, pronotal collar subpolished, minutely punctate, punctures running into fine

striations, epomia short, strong. Scutellum and metascutellum subpolished with shallow punctures, its lateral carina more or less confined to its base. Mesopleurum mat, finely wrinkled, mesosternum and area above sternaulus anteriorly with fine dense punctures, prepectal carina extending about 0.8 the height of mesopleurum, speculum rugoso-punctate, subtegular ridge minutely and closely punctate. Metapleurum mat, moderately wrinkled, juxtacoxal carina not defined. Propodeum between basal carina and apex moderately strongly wrinkled, at some places appears to be reticulate, basal of basal carina mat, largely rugulose with weak setiferous punctures, apical carina transverse in the middle. First tergite mat with minute scattered punctures; second tergite mat, minutely and densely punctate; following tergites mat and subpolished. Ovipositor sheath about 0.8x as long as hind tibia; ovipositor tip as shown in figure.

Black. (Antennal flagellum broken), face and frons along the eye margin (Fig. 2, c, d), scutellum faintly in the middle, yellow. Wings clear hyaline.

Male : Essentially similar to female, except body slender and subpolished, face minutely and densely punctate. Clypeus sparsely and shallowly punctate. Frons rugulose. Vertex and temple subpolished with minute and sparse punctures. Pronotum finely wrinkled in the middle, its upper margin and collar with fine close punctures, punctures running into wrinkles. Mesopleurum rugoso-punctate, punctures small to moderate sized. Metapleurum with moderate sized dense punctures forming reticulations. First tergite mat, postpetiole minutely and densely punctate. Following tergites mat and subpolished.

Black. Antennal flagellum reddish-brown in front. The following are yellow : scape in front, face, clypeus, mandible, malar space, temple, frons along the eye margin, pronotal collar narrowly, small dot at the top of epomia, scutellum, tegula, posterior corner of pronotum, subtegular ridge, apices of second to seventh tergites narrowly, fore and middle coxae and trochanters. Fore and middle legs yellowish-brown. Hind leg largely, second to basal half of fifth tarsal segments whitish-yellow. Wings clear hyaline with light brownish tinge.

Length Female, 10.25 mm. Fore wing 7.5 mm. Ovipositor sheath about 2.3 mm. Male, 9.5 mm. Fore wing 7.2 mm.

Material Examined 1 Female, 1 Male. JAPAN : Mt. Kamegamori, Srikoku AI, 1 F (Homotype of *Habrocryptus shikokuensis* Uchida, det. by H.K. Townes 1954), 17.vii. 1933, Coll. Y Sugihara; Kamikochi, 1 M, 25. vii, 1954, Coll. Townes family (AEI, Florida).

Distribution Japan.

3. *Caenocryptus reticulatus*, sp. nov.

This species is recognized from *Caenocryptus striatus*, sp. nov. and *Caenocryptus burmensis*, sp. nov. by having ovipositor tip short, upper valve heavy, evenly arched between apex and nodus

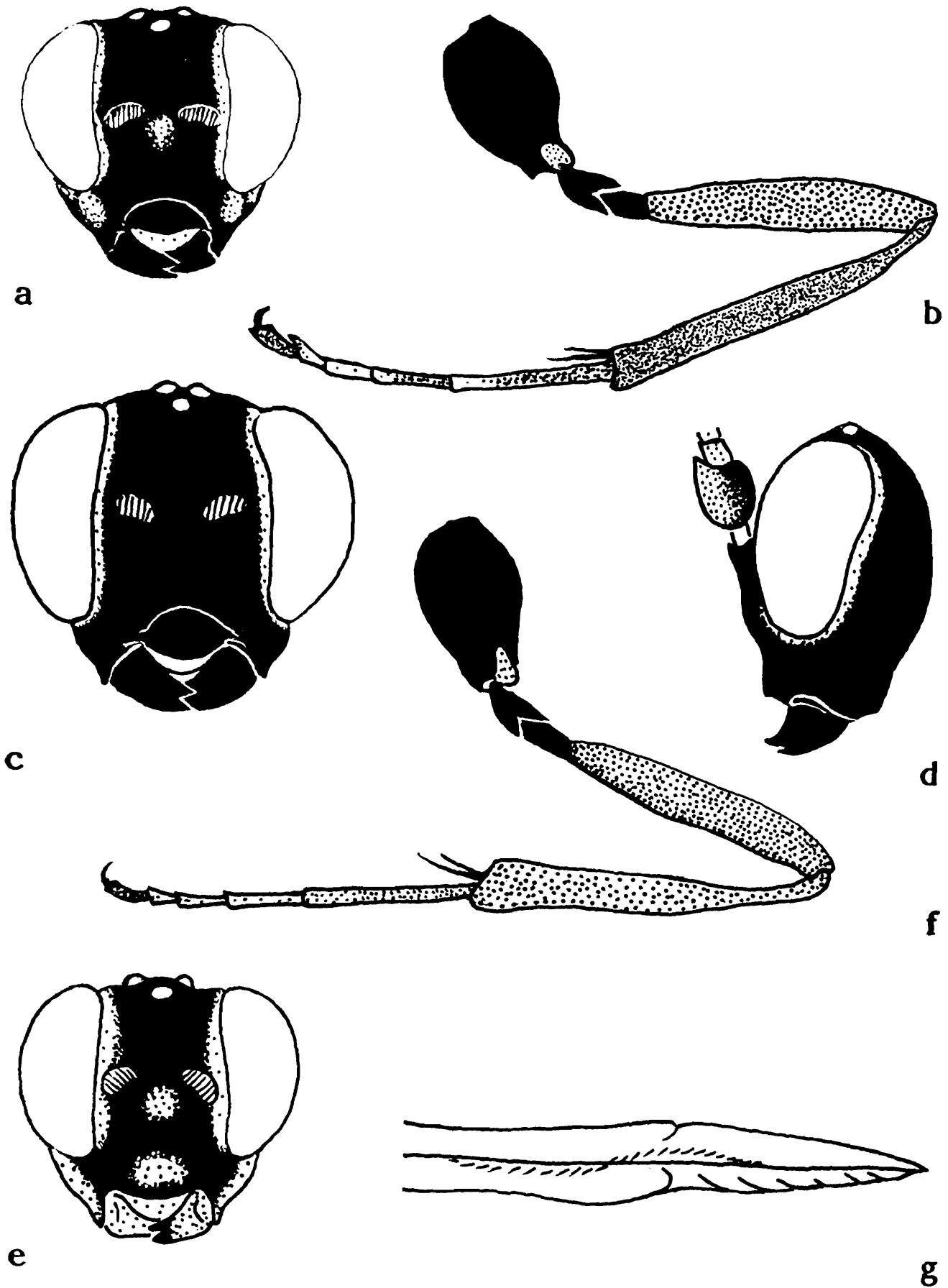


Fig. 2. *Caenocryptus rugosus* : colour pattern : a, front view of head; b, hind leg. *Caenocryptus shikokuensis* (Uchida) : colour pattern : c, d, front and side view of head. *Caenocryptus reticulatus* : colour pattern : e, front view of head; f, hind leg; g, ovipositor tip.

(Fig. 2, g) apex not flattened. Speculum and mesopleurum with deep and dense punctures.

Female : Face mat, with minute, dense punctures at sides running into fine rugosities, along the eye margins mat and dull. Clypeus subpolished, with minute, rather sparse punctures, at apex smooth and shiny. Malarspace granulose, with minute, dense punctures. Frons mat and weakly rugose. Vertex mat, minutely and closely punctate, dull. Temple mat with minute, closely placed punctures, punctures running into fine striations. Propronotum subpolished, trans-rugose, above finely striate, pronotal collar and below minutely punctate, with fine striations in between the striae, epomia moderately strong and long. Scutellum mat and subpolished, minutely and densely punctate, with fine longitudinally running striations, lateral carina extending about 0.3 its length. Metascutellum sub-polished, with closely placed small punctures. Mesopleurum subpolished, moderately strongly rugoso-wrinkled, below subtegular ridge ruguloso-punctate, subtegular ridge minutely punctate, speculum shiny with large deep punctures. Mesosternum minutely and densely puncto-rugulose, prepectal carina extending 0.9 the height of mesopleurum. Metapleurum subpolished, rugoso-wrinkled, juxtacoxal carina weakly present. Propodeum between basal carina and apex strongly rugoso-wrinkled, at some places tending to be reticulate, basal of basal carina with small sized, dense punctures, punctures forming rugosities, apical carina strong in the middle. First tergite mat, with fine, dense punctures, second to fourth tergites mat with fine dense punctures, following tergites mat and subpolished. Ovipositor sheath about 0.8x as long as hind tibia; ovipositor tip as shown in figure 2g.

Black. 6th to 9th antennal segments white above. The following are yellow : a mark on scape in front, face with a small round mark above, clypeus faintly, face and frons (Fig. 2, e) along the eye margin, malarspace, temple along the eye margin, pronotal collar and upper margin of pronotum narrowly, subtegular ridge and scutellum in the middle. Legs in general reddish-brown, except their coxae and trochanter black, and hind tarsus with second to fourth segments whitish (Fig. 2, f). Wings clear hyaline.

Male : Unknown.

Length Female, 10 mm. Fore wing 8 mm. Ovipositor sheath about 2.5 mm.

Holotype Female, INDIA : HIMACHAL PRADESH : Dalhousie 2132 m, 27.iv.1971, Coll. M.K., Kamath, No. DH 10 (Z.S.I., Calcutta).

Distribution India : Himachal Pradesh.

4. *Caenocryptus striatus*, sp. nov.

This species is close to *Caenocryptus burmensis*, sp. nov. in having ovipositor tip long, both the valves of ovipositor equally strong and upper valve flattened at the apex. Speculum and

mesopleurum rugose. It can be distinguished by having pronotum strongly transversely rugoso-striate. Meso- and metapleurum strongly rugoso-wrinkled. Punctures on scutellum neither dense nor running into striations. Hind tarsus at its apical 0.2 of first and second to fourth segments wholly whitish.

Female : Face subpolished, moderately strongly granulated. Clypeus subpolished, mat, sparsely and shallowly punctate, its apex smooth. Malarspace granulose. Mandible shallowly punctate. Frons strongly granulose to weakly rugose, near the antennal sockets smooth and shiny. Vertex and temple mat, with fine setiferous punctures. Pronotum in the scrobe moderately strongly transversely rugoso-striate, pronotal collar and upper half of pronotum strongly granulose to weakly rugose, epomia short but strong. Scutellum and metascutellum subpolished with fine, weak and dense punctures, lateral carina of scutellum extending to its basal 0.2. Mesopleurum almost wholly moderately strongly rugose, mesosternum rugulose, subtegular ridge subpolished minutely punctate, prepectal carina extending 0.9x the height of mesopleurum. Metapleurum mat, rugose, juxtacoxal carina absent. Propodeum between basal carina and apex mat and finely rugoso-wrinkled, basad of basal carina strongly granulated, apical carina complete, transverse in the middle. First tergite mat and subpolished, with a few scattered shallow setiferous punctures. Second tergite mat with fine dense punctures, punctures towards the apex not well defined; following tergites mat and subpolished. Ovipositor sheath about 0.9x as long as hind tibia.

Black. 6th to 9th flagellar segments white above. The following are yellow : face with a T-shaped mark above (Fig. 3, a), basal half of clypeus, mandible faintly at base, orbit all along the eye margin, pronotal collar, upper margin of pronotum, scutellum with a small oval mark in the middle, subtegular ridge. First to third abdominal tergites (Fig. 3, c) more or less blackish except second and third tergites apically and following tergites wholly reddish-brown; all the coxae and trochanters dark brown to black, fore and middle femora and tibiae reddish-brown, their tarsi dark brown. Hind femur reddish, tibia blackish, tarsus with basal 0.8 of first segment and fifth segment wholly black, the rest of tarsus whitish (Fig. 3, b). Wings clear hyaline.

Male : Similar to female, except more slender and subpolished. Face subpolished, minutely and densely reguloso-punctate. Clypeus subpolished with shallow close punctures. Frons mat, densely and minutely punctate. Vertex mat, shallowly punctate. Temple shiny with shallow close punctures. Pronotum rugoso-punctate. Mesopleurum mat, weakly rugose, speculum and area below subtegular ridge rugoso-punctate. Mesosternum densely punctate. Metapleurum somewhat rugoso-punctate. Propodeum moderately strongly wrinkled, basad of basal carina granulose. First tergite mat and subpolished with scattered indistinct punctures; following tergites largely mat and dull.

Black. Antennal flagellum entirely blackish. The following are yellow : scape in front, face and clypeus wholly, mandible, except the teeth, frons along the eye margin, temple, malarspace

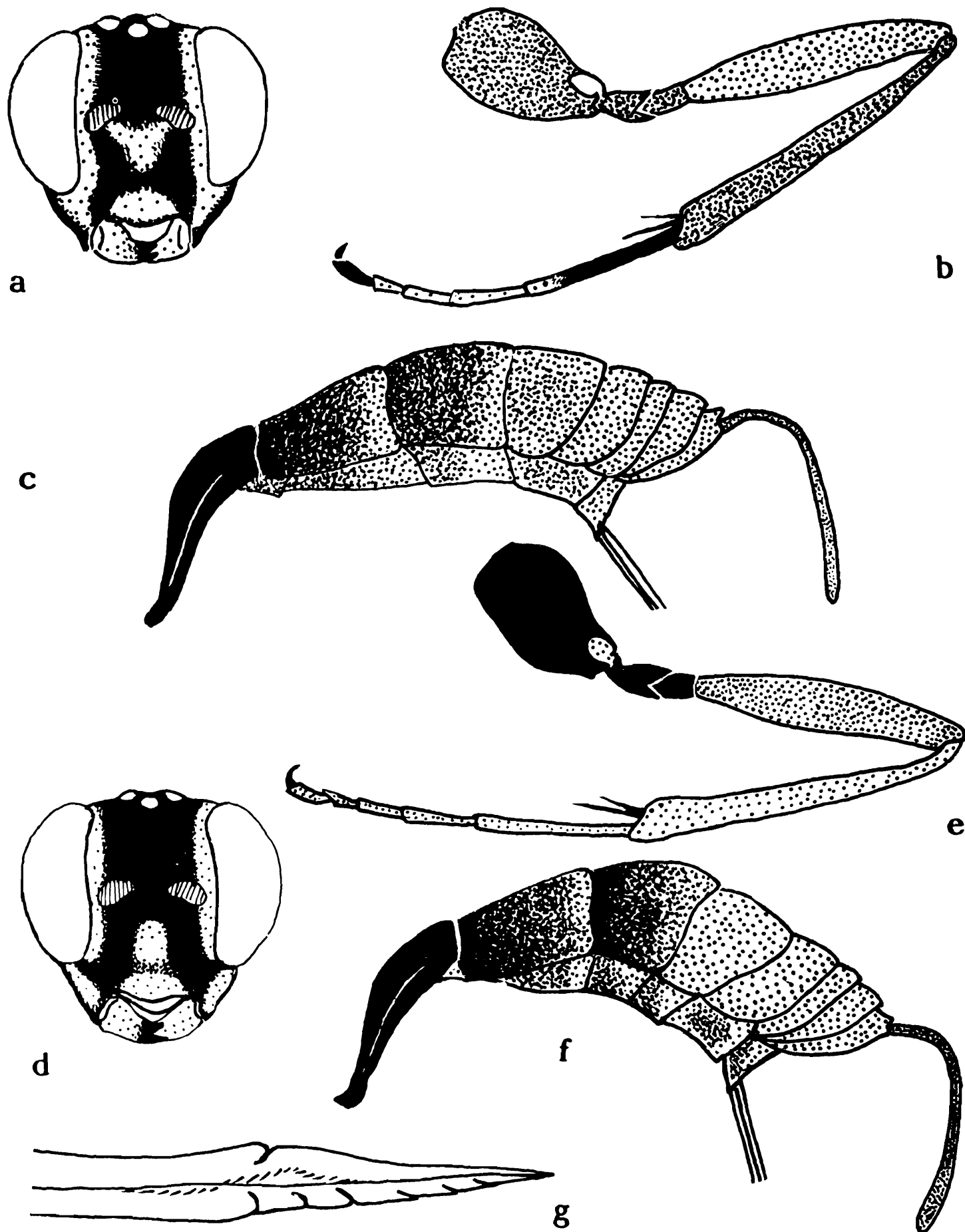


Fig. 3. *Coenocryptus striatus* : colour pattern : a, front view of head; b, hind leg; c, side view of abdomen. *Coenocryptus burmensis* : colour pattern : d, front view of head; e, hind leg; f, side view of abdomen; g, ovipositor tip.

broadly, pronotal collar, upper margin of pronotum, scutellum with a small mark, tegula, subtegmental ridge, an oval mark above sternaulus, mesosternum almost wholly, fore and middle coxae and first trochanteral segment (hind legs broken). Legs in general yellowish-brown. First abdominal segment black; following segments, blackish-brown.

Length : Female, 7.2-9 mm. Fore wing 6.5-7.5 mm. Ovipositor sheath 2.25-2.8 mm. Male, 7.5 mm. Fore wing 6 mm.

Holotype Female, INDIA : HIMACHAL PRADESH : Ahla, 2286 m, near Dalhousi, 25.v.1971, Coll. J.K. Jonathan, JD5 (Z.S.I., Calcutta). *Allotype* Male, TAIWAN : Sunmoon Lake, 15.i.1969, Malaise Trap (AEI, Florida). *Paratype* 14 Females. INDIA : HIMACHAL PRADESH: Ahla, 2286 m, near Dalhousi, 6 F, 7.ii.-28. vii.1971, Colls. J.K. Jonathan, Sukh Dev, M.L. Gupta, D. Ram, M.K. Kamath and A.K. Gulati, Colln. Nos. JD27 & 30, M133, DH29, 55 & 118 (all in Z.S.I., Calcutta except 1 F, in AEI, Florida). Dalhousi, 2132 m, 2 F, 22.ix. & 2.x.1971, Colls. Girish Chandra & Tulsi Ram, Colln. Nos. JD155 & 194. Kalatop, 2438 m, 3 F, 4.v. & 22.vii. 1971, Colls. D. Ram & M.K. Kamath, Colln. Nos. DH25 & 26, M114. Khajjiar, 1828 m, 1 F, 6.v. 1971, Coll. D. Ram, No. DH32. Nichar, 2500 m, 1F, 11.vi.1972, Coll. S. Gupta, No. 390 (Z.S.I., Calcutta). TAIWAN : Sunmoon Lake, 1 M, 1 F, 2-15.i.1969, Malaise Trap (AEI, Florida).

Distribution : India : Himachal Pradesh. Taiwan

5. *Caenocryptus burmensis*, sp. nov.

This species is distinguished from *Caenocryptus striatus*, sp. nov. by having pronotum strongly mat, mesopleurum and metapleurum weakly rugose. Punctures on scutellum strong and dense, running into striations. Hind tarsus reddish-yellow.

Female : Face moderately strongly granulated, weakly raised in the middle. Clypeus subpolished sparsely and shallowly punctate. Malarspace granulose. Mandible with minute weak punctures. Frons strongly rugose, with a median wide shallow longitudinal groove. Vertex mat with fine dense punctures. Temple subpolished, with minute closely placed punctures. Pronotum as a whole granulated, in the scrobes and above weakly rugose, upper margin strongly granulated with sparse shallow setiferous punctures. Scutellum granulated with fine dense punctures, punctures running into fine striations, its lateral carina more or less confined to its base. Metascutellum with minute dense punctures. Mesopleurum largely mat, and weakly rugose, subtegmental ridge subpolished, minutely and closely punctate; prepectal carina extending more or less up to the base of subtegmental ridge. Metapleurum rugoso-wrinkled, juxtacoxal carina not well defined. Propodeum between basal carina and apex moderately wrinkled, basal of basal carina

mat with minute dense punctures. First tergite mat and subpolished; second and third tergites mat, with very minute and dense punctures. Following tergites mat and subpolished. Ovipositor sheath about 0.8x as long as hind tibia. Ovipositor tip as shown in figure 3, g.

Black Apex of sixth segment to the base of tenth segment of antennal flagellum white above. The following are yellow : clypeus broadly, mandible, face sometimes faintly, malarspace, eye orbit wholly (Fig. 3, d), pronotal collar, upper margin of pronotum, scutellum with an oval mark in the center and subtegular ridge. First to third tergites black (Fig. 3, f), following tergites reddish-brown. Legs in general reddish-brown, except fore and middle coxae dark brown and usually with yellow markings. Hind coxa and trochanter largely black, its tarsus reddish-yellow (Fig. 3, e). Wings clear with yellowish tinge.

Male : Unknown.

Length Female, 11.5 mm. Fore wing 8.25 mm. Ovipositor sheath 2.25 mm.

Holotype Female, MYANMAR : Mt. Victoria, 2800 m, iv.1938, Gerd Heinrich (AEI, Florida). *Paratypes* 4 Females, same data as holotype, except 1 F, collected on v.1938 (all in AEI, Florida & 1 F in Z.S.I., Calcutta).

Distribution : Myanmar.

SUMMARY

This paper deals with four new species of *Caenocryptus* Thomson, viz., *C. rugosus*, *C. reticulatus*, *C. striatus* and *C. burmensis* from India, Myanmar and Taiwan. *C. shikokuensis* (Uchida) from Japan is also included in the key and text for comparison with the Oriental species.

Caenocryptus has been recorded from Holarctic Region. This is the first record of this genus from Oriental Region (India, Myanmar and Taiwan).

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