

**FOUR NEW SPECIES OF CAENOCRYPTOIDES UCHIDA FROM INDIA,
CHINA AND JAPAN
(Hymenoptera : Ichneumonidae)**

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INTRODUCTION

The genus *Caenocryptoides* Uchida belongs to the tribe Ischnini of the subfamily Mesosteninae, family Ichneumonidae. It contains small to medium sized species measuring 2.5 to 13.5 mm in length. This is a small genus of Japan and eastern Asia (Townes 1970 : 167).

This genus is recorded here for the first time from India and China. This genus is known by its genotype : *Caenocryptoides tarsalis* (Matsumura) = (*Ischnojopa tarsalis* Matsumura).

Four new species are described here from India (Himachal Pradesh, Meghalaya and Uttar Pradesh), China and Japan. *Caenocryptoides tarsalis* (Matsumura) is also included in the key and the text.

SYSTEMATIC ACCOUNT

Genus *Caenocryptoides* Uchida

1936. *Caenocryptoides* Uchida, *Insecta Matsumurana*, **11** : 4. Type : *Ischnojoppa tarsalis* Matsumurana. Original designation.

1970. *Caenocryptoides* Uchida : Townes, *Mem. Amer. Ent. Inst.*, **12** : 167. Syn.

Body moderately slender to stout. Clypeus of moderate size, about 2.5x as wide as long, strongly convex with its apical 0.3 flattened, the apex broadly subtruncate, without a distinct tooth or irregularity. Malarspace about 0.67 as long as the basal width of mandible. Lower tooth of mandible a little shorter than upper tooth. Mesoscutum mat, with small dense punctures; notaulus deep reaching more than 0.5 the length of mesoscutum. Propodeal spiracle about 2.5x as long as wide; apical carina of propodeum medially weak or obsolescent, sublaterally forming weak crests. Hind coxa with or without a short, shallow subvertical groove on its anterobasal face below its articulation. First tergite (Fig. 1, b) rather broad, with a weak lateral tooth at base, its ventro-lateral carina complete; dorso-lateral carina distinct from spiracle to apex but elsewhere indistinct or absent; median dorsal carinae present but weak on basal 0.5 of the tergite. Spiracle of first tergite near its apical 0.45; second tergite mat, with dense punctures. Ovipositor (Fig. 1, c) sheath about 1.0x as long as hind tibia. Wing venation and ovipositor tip as in figure 1, a.

Length : ♀, 8.5-13.5 mm. Fore wing 7.2-10.5 mm. Ovipositor 2.5-4.5 mm.

Type-species.: *Ischnojoppa tarsalis* Matsumura.

Caenocryptoides is readily distinguished by having propodeal spiracle 2.5x as long as wide. Front side of areolet little shorter than outside, intercubiti convergent. Spiracle of first tergite near its apical 0.45 and clypeus about 2.5x as wide as long. It shows affinities with *Etha* Cameron, *Ischnus* Gravenhorst and other related genera of the tribe Ischnini, in having a weak or strong lateral tooth or projection at the base of first tergite, and clypeus without a median tooth or irregularities.

Key to the species of *Caenocryptoides*

1. Face strongly mat with minute weak and dense setiferous punctures. Hind femur black or red. Upper margin of pronotum entirely black. Propodeum apically black. Not all the tergites with apical bands2
- Face largely subpolished with small to moderate sized, closely placed punctures. Hind femur yellow with apical about 0.3 black. Upper margin of pronotum with yellow markings. Propodeum apically marked with yellow. All the tergites with narrow apical bands4
2. Pronotum in the scrobe rugose. Hind femur red. Face, frons, malar-space and temple along the eye margin, and clypeus medially, yellow. First to seventh abdominal tergites narrowly at apex yellow 1. *rugosus*, sp. nov.
- Pronotum in scrobe transversely striate or wrinkled. Hind femur black. Head wholly black. First to third and eighth abdominal tergites apically yellow3
3. Pronotum in scrobe finely transversely wrinkled. Frons above rugoso-punctate. Speculum on mesopleurum subpolished with minute dense punctures. Scutellum with a small triangular mark at apex; metascutellum black.2. *tarsalis* (Matsumura)
- Pronotum transversely striate. Frons above strongly mat with dense punctures. Speculum on mesopleurum shiny with distinct evenly spaced punctures. Scutellum and metascutellum, yellow3. *maai*, sp. nov.
4. Largely black species. Head largely black. Upper margin of pronotum with two small yellow spots. Mesopleurum with a small oval yellow mark near the base of middle coxa. All coxae black; apical mark on propodeum faint and small. Propodeum basad of basal carina with weak dense punctures4. *nigrifacies*, sp. nov.
- Largely yellow species. Head largely yellow, except frons and vertex in the middle, back of head and clypeus at apex and base, black. Upper margin of pronotum broadly yellow. Mesopleurum with a broad irregular yellow mark. All coxae extensively marked yellow. Propodeum with large marks at apex; basad of basal carina with deep dense punctures
.....5. *flavescens*, sp. nov.

1. *Caenocryptoides rugosus*, sp. nov.

This is a distinct species having pronotum in scrobes rugose. Face, frons, malarspace, temple along the eye margin, clypeus and first to seventh tergites apically, yellow. Hind femur red.

Female : Face strongly, in the middle with dense setiferous punctures. Clypeus at base rugulose with a few setiferous weak punctures, towards the apex smooth and shiny. Mandible at base granulose. Malarspace granulose, 0.6x the basal width of mandible. Frons moderately strongly rugose in the middle, rugulose at sides, towards the antennal base somewhat trans-rugose, a strong median longitudinal carina present. Vertex and temple rugulose, with indistinct setiferous punctures. Pronotum, mesopleurum, metapleurum and propodeum uniformly rugose to strongly rugoso-wrinkled. Scutellum subpolished, with dense, shallow, small sized punctures, its lateral carina more or less confined to its base. Metascutellum subpolished, with fine close and weak punctures. First abdominal tergite granulose (mat) with sparse setiferous punctures; second tergite granulose with dense, moderately strong punctures, following tergites mat and subpolished.

Black. Apex of 5th to base of 10th flagellar segment above white. The following are yellow : Face, frons and temple along the eye margin, malarspace, mandible except the teeth, small mark at the center of clypeus (Fig. 1, d), pronotal collar above, subtegular ridge, tegula at base, triangular mark at the apex of scutellum, metascutellum (Fig. 1, e), apices of 1-7 abdominal tergites narrowly. Legs with all the coxae and trochanters black, except coxae at their apices, yellow; all femora and tibiae reddish-brown, except fore and middle femora and tibiae dorsally dark brown, and their tarsi also dark brown; hind tarsus whitish, except basal 0.6 of its first segment and apical 0.25 of fifth segment black (Fig. 1, f). Wings clear hyaline.

Male : Unknown.

Length : ♀, 8.5 mm. Fore wing 7.2 mm. Ovipositor sheath 2.5 mm.

Holotype ♀, India : Himachal Pradesh : Narkanda in Shimla Hills, 2572 m, 4.x.1962 Coll. V. K. Gupta, Colln. No. 29. *Paratype* 1 ♀, Uttar Pradesh : Dwali in Kumaon Hills, 2743 m, 8.x.1973, V. K. Gupta, No. 585 (Z.S.I., Calcutta).

Distribution : India : Himachal Pradesh and Uttar Pradesh.

2. *Caenocryptoides tarsalis* (Matsumura)

1921. *Ischnojoppa tarsalis* Matsumura, Thousand Insects of Japan supplement, 4 : 244. '♀' = ♂, des., fig. Type ♂, Japan : Kyoto (type in Sapporo museum).
1930. *Ischnojoppa tarsalis* Matsumura : Uchida, *Jour. Faculty Agr. Hokkaido Imp. Univ.*, 25 : 213. ♂, ♀. Japan : Sapporo & Garugawa both in Hokkain, Kyoto.
1965. *Caenocryptoides tarsalis* : Townes et al., *Amer. Ent. Inst.*, 5 : 174. Syn.

This species is close to *Caenocryptoides maai*, sp. nov. in having head and femur wholly black, first to third and eighth abdominal tergites apically yellow. It is recognized by having pronotum

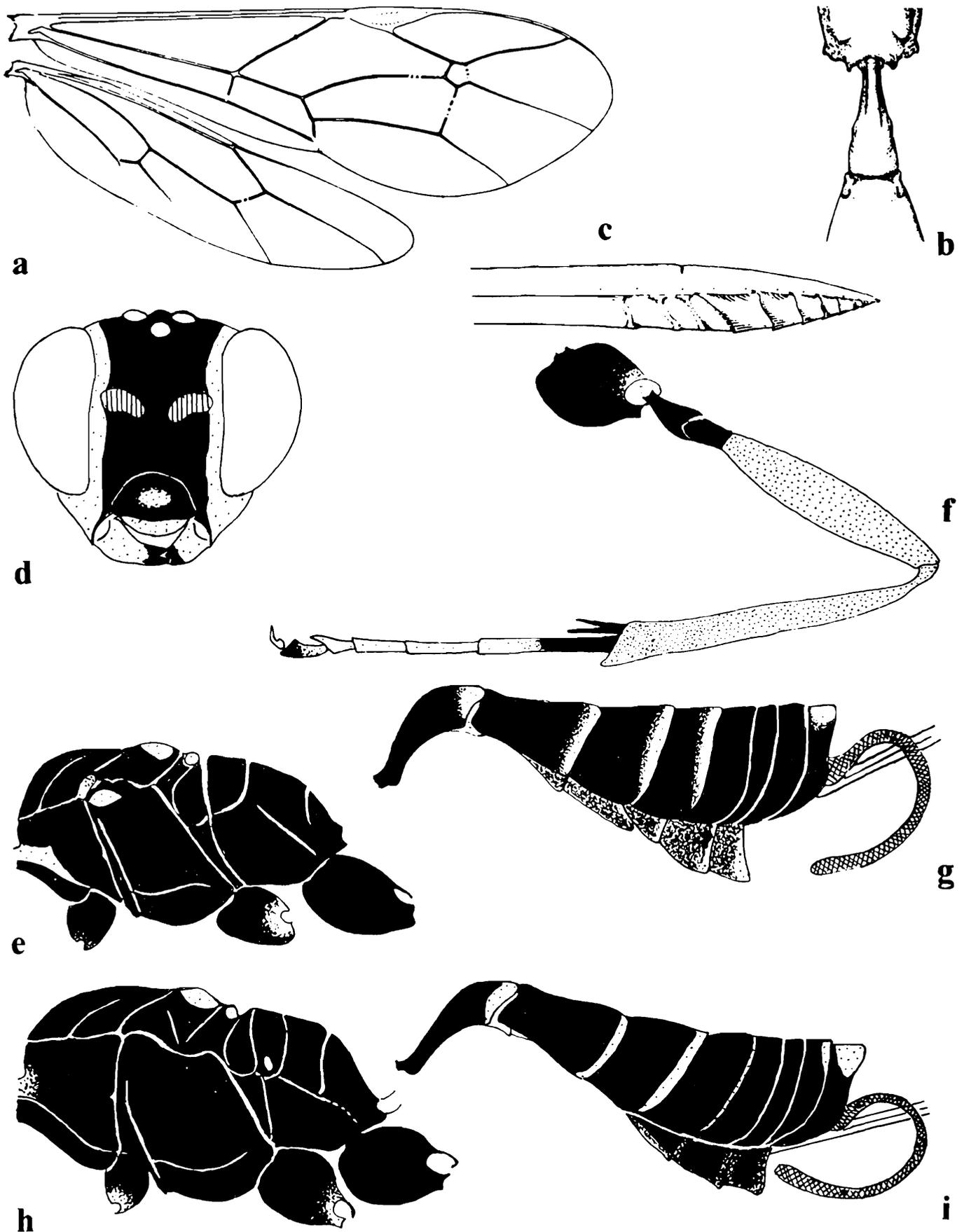


Fig. 1 *Caenocryptoides* Uchida : a, wing venation of fore and hind wings ; b, dorsal view of first tergite ; c, ovipositor tip. *C. rugosus* : colour pattern : d, head front view ; e, thorax side view ; f, hind leg. *C. tarsalis* (Matsumura) : colour pattern : g, abdomen side view. *C. maai* : colour pattern : h, thorax side view ; i, abdomen side view.

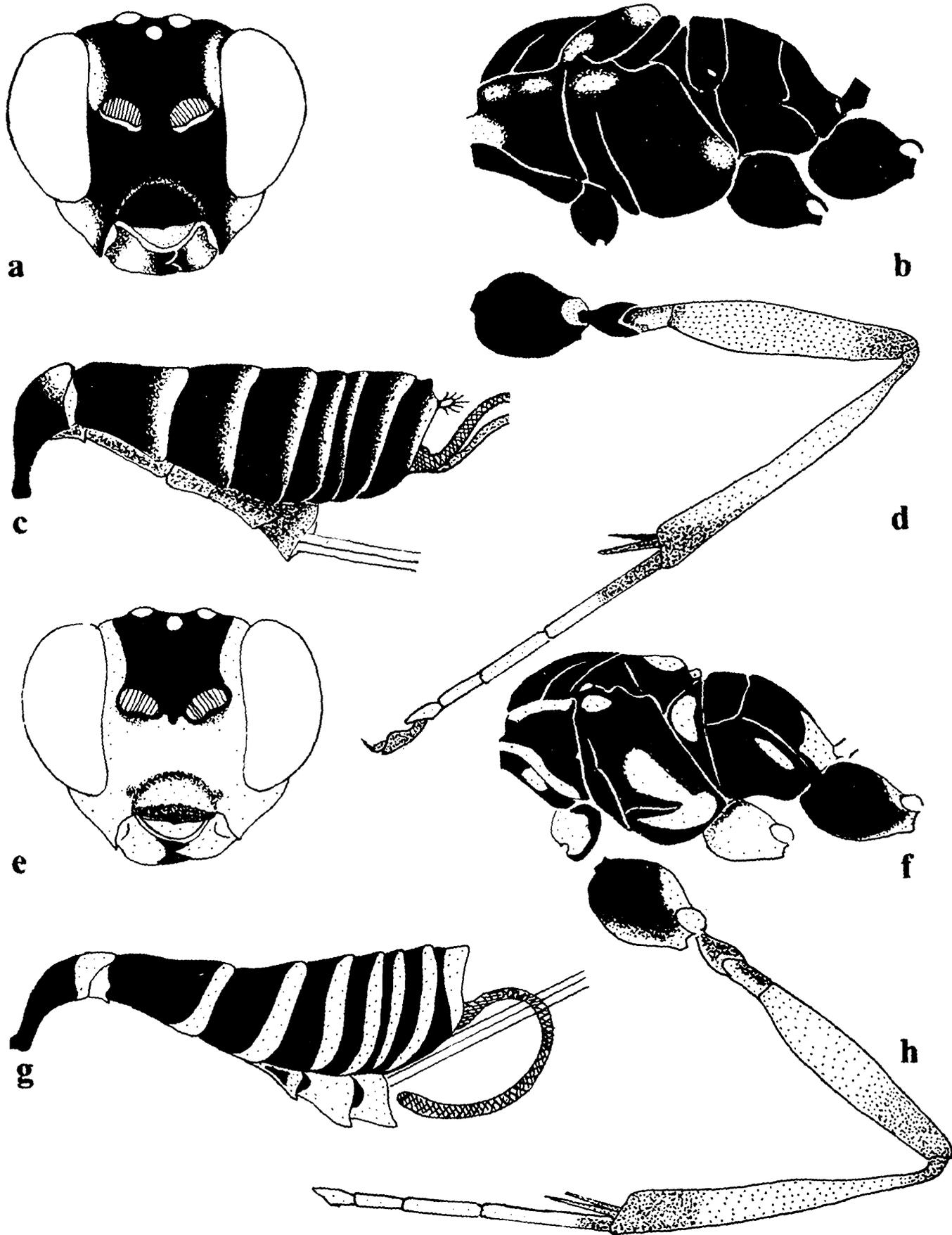


Fig. 2 *C. nigrifacies* : Colour pattern : a, head front view ; b, thorax side view ; c, abdomen side view ; d, hind leg. *C. flavescens* colour pattern : e, head front view ; f, thorax side view ; g, abdomen side view ; h, hind leg.

finely transversely wrinkled in the scrobes. Frons rugoso-punctate. Speculum on mesopleurum subpolished, with minute dense punctures. Scutellum with a small triangular mark at the apex.

Female : Face strongly mat with close setiferous punctures, dull. Clypeus subpolished, sparse to closely punctate. Frons moderately strongly rugoso-punctate, towards the antennal bases smooth and shiny. Vertex largely mat; minutely and closely punctate behind the ocellar triangle. Temple mat with sparse small punctures. Malarspace granulose. Pronotum largely finely trans-wrinkled, upper margin with small coalescent punctures, running into striations ; pronotal collar rough with sparse indistinct punctures. Epomia strong but not reaching up to its upper margin. Mesoscutum with minute dense punctures, with short striae along notauli. Scutellum with fine, distinct, closely placed punctures, lateral carina extending at its basal 0.25. Metascutellum shiny, with minute sparse and shallow punctures. Mesopleurum moderately strongly rugoso-wrinkled, speculum above and mesosternum, finely and closely punctate; prepectal carina extending 0.8 the height of mesopleurum. Metapleurum finely trans-rugoso-wrinkled. Juxtacoxal carina absent. Propodeum between basal carina and apex somewhat finely reticulo-punctate, basad of basal carina, specially near the spiracles densely punctate; basal carina complete, moderately arched, apical carina broadly interrupted in the middle, laterally forming weak crest. First tergite mat, with coarse and close punctures in the middle. Second tergite mat, with minute dense punctures, following tergites mat and subpolished.

Black. 6th to 9th flagellar segments above whitish. The following are yellow : scutellum with a small mark in the middle, apices of first to third tergites very narrowly and eighth tergite broadly in the middle (Fig. 1, g). Wings hyaline with yellowish-brown tinge.

Male : Essentially similar to female, except more slender. Face strongly mat with dense shallow punctures. Frons strongly mat and densely punctate. Pronotum trans-striate in the scrobes, moderately closely punctate above, with obliquely running striations. Mesopleurum moderately strongly trans-rugoso-wrinkled; speculum and mesosternum with deep and moderately close punctures. Metapleurum moderately strongly reticulo-punctate. Propodeum between basal carina and apex reticulo-wrinkled, basad of basal carina with close to dense punctures. First tergite mat, its basal 0.75 sparsely and shallowly punctate. Second tergite mat with weak sparse punctures.

Black. The following are yellow : 15th to 20th flagellar segments, face, clypeus, malarspace, mandibles, except the teeth, frons with two oval marks along the eye margin, temple with two large elongate-oval marks, scutellum with a median large mark, apices of all the abdominal tergites narrowly. Leg in general black, except fore and middle coxae and trochanters narrowly to broadly yellow. Hind tarsus from apical 0.2 of first to basal 0.5 of fifth segments whitish-yellow. Wings clear hyaline.

Length : ♀, 10 mm. Fore wing 8 mm. Ovipositor sheath 3.5. ♂ 10.5-11.5 mm. Fore wing 8-8.75 mm.

Specimens examined : 1 ♀, 2 ♂. Japan : Yokokana, 1 ♀, 17.v.1942 & 2 ♂, 22-29.iv.1934, Coll. Kaku Sato (A.E.I. Florida, U.S.A.).

Distribution : Japan.

3. *Caenocryptoides maai*, sp. nov.

This species is close to *Caenocryptoides tarsalis* (Matsumura) by having head and femur black, and first to third and eighth tergites apically, yellow. This species is recognised by its transversely striate pronotum, frons mat with dense punctures. Scutellum and metascutellum, yellow.

Female : Face strongly mat, with undefined setiferous punctures. Clypeus mat, its basal 0.75 with sparse to close, moderate sized punctures, its apical 0.25 smooth. Frons strongly mat in the middle with dense, setiferous punctures, towards the antennal sockets smooth. Vertex mat, in the ocellar triangle closely punctate. Temple subpolished with moderate sized close punctures. Malarspace granulose. Pronotum largely in the middle and below coarsely trans-striate, sparsely punctate in between the striae, its upper area finely puncto-wrinkled, pronotal collar rugulose with fine scattered punctures. Epomia short but strong. Scutellum mat and dull, closely punctate, its lateral carina extending at its basal 0.2. Metascutellum smooth and subpolished. Mesopleurum moderately strongly trans-rugose, speculum shiny, distinctly punctate, area below sternaulus with small, close and shallow punctures, punctures running into fine striations; prepectal carina extending 0.8 the height of mesopleurum. Metapleurum in the upper half moderately strongly wrinkled, in the lower half finely trans-wrinkled. Juxtacoxal carina defined. Propodeum between basal carina and apex wrinkled, basad of basal carina with small and very dense punctures, punctures running into rugosities. First tergite in its 0.66 with close punctures, its apical 0.3 mat; second and third tergites also mat, with very dense punctures; following tergites mat and subpolished.

Black. 5th to 9th flagellar segments white. The following are yellow : pronotal collar at its extreme upper corner, scutellum, metascutellum (Fig. 1, h), apices of first to third and seventh tergites narrowly, eighth tergite broadly in the middle (Fig. 1, i), and extreme apices of fore and middle coxae. Second to fourth hind tarsal segments dirty white. Legs in general black, except their femora and tibiae dark brown. Wings hyaline with light brownish tinge.

Male : Face minutely and densely punctate. Clypeus sparsely punctate. Frons mat, with minute and dense punctures. Vertex minutely and closely punctate. Temple sparsely punctate. Pronotal scrobes coarsely striate, upper margin with deep, close to sparse punctures, collar largely smooth and shiny, with a few minute punctures along the margin. Mesopleurum from the base of middle coxa to base of subtegular ridge strongly wrinkled; speculum, area above sternaulus anteriorly and mesosternum punctate, punctures deep, close to sparse. Metapleurum with strong, moderately large and close punctures. Propodeum between basal carina and apex strongly wrinkled, at some places appears to be reticulate, basad of basal carina with small to large but shallow punctures. First tergite in the middle with coarse shallow and sparse punctures, following tergites mat, except second and third tergites with weak setiferous punctures.

Black. 14th to 20th flagellar segments whitish. The following are yellow : face, clypeus, mandible except the teeth, malarspace, temple along the eye margin, frons with two lateral longish-oval marks, scutellum, metascutellum, tegula, subtegular ridge, apices of all the abdominal tergites, fore and middle coxae and trochanters. Fore and middle femora and tibiae yellowish-

brown, their tarsi dark brown. Hind leg largely black, except extreme apex of coxa, femur and tibia along the inner margin yellowish-brown, apical 0.25 of its first tarsal segment to basal 0.5 of fifth segment white. Wings hyaline with brownish tinge.

Variation : Some males are variable in colour, having pronotal collar, mesosternum, a small oval mark above sternaulus, area near the base of hind wing, metapleurum above, propodeum almost wholly, first tergite, fore and middle legs largely, deep yellow to reddish-yellow. Hind tarsus white except basal 0.3 of first segment black.

Length : ♀, 11-12.5 mm. Fore wing 8.5-9.5 mm. Ovipositor sheath about 3-4 mm. ♂, 9-10 mm. Fore wing 6.5-7.5 mm.

Holotype : ♀ and *allotype* ♂, China : Shaowu Hsien, Fukien, 1200-1500 m, 2.iv. & 30.vi.1942 respectively, Coll. T. C. Maa. *Paratypes* 3 ♀, 5 ♂. Same locality & data as for holo- & allotypes, except 2 ♀ & 2 ♂, 17-28.xi.1942; 2 ♂, 2 & 13.vi.1942 (all in A.E.I., Florida); 1 ♀, 21.v.1942 & 1 ♂, 26.iv.1942 (Z.S.I., Calcutta).

Distribution : China.

4. *Caenocryptoides nigrifacies*, sp. nov.

This species is close to *Caenocryptus flavescens*, sp. nov. in having face largely subpolished and punctate. Hind femur in its basal 0.6, upper margin of pronotum, propodeum apically and all the abdominal tergites narrowly at apex, yellow. It is readily distinguished by having head largely black, upper margin of pronotum with two small yellow marks, all coxae black and mesopleurum with a small yellow mark near the base of middle coxa.

Female : Face subpolished, mat, closely punctate above, sparsely towards the eye margin and clypeal groove. Clypeus sparsely punctate, towards the apex smooth. Malarspace granulose. Frons and vertex mat, frons in front of ocellar triangle ruguloso-punctate, towards the antennal sockets largely smooth and subpolished. Vertex with close to sparse punctures. Temple shiny, with sparse and fine punctures. Scutellum shiny, minutely and sparsely punctate, its lateral carina extending at its basal about 0.25. Metascutellum almost smooth and polished. Pronotum in the middle moderately strongly wrinkled, its collar rough with sparse large punctures, upper margin of pronotum with dense deep punctures. Epomia short. Mesopleurum largely finely rugoso-wrinkled, speculum closely punctate, below sternaulus finely and closely punctate, prepectal carina extending 0.75 the height of mesopleurum. Metapleurum densely punctate; juxtacoxal carina not present. Propodeum between basal carina and apex moderately strongly wrinkled, at some places appears to be reticulate, basal of basal carina weakly and densely punctate. First tergite in the middle with coarse and close punctures, towards the base and apex smooth. Second and third tergites mat, densely punctate, following tergites mat and subpolished.

Black. The following are yellow : 4th to 9th flagellar segments, a small mark near the lower margin of malarspace, base of mandible (Fig. 2, a), two small mark on upper margin of pronotum, scutellum broadly, anterior corner of tegula, subtegular ridge, an oval mark on mesopleurum near the base of middle coxa, apices of all the abdominal tergites narrowly (Fig. 2, b, c). Legs in

general black, all the femora and tibiae yellowish-brown and their tarsi dark brown, except apical 0.3 of hind femur and extreme apex and base of tibia, blackish. Hind tarsus yellowish-white, except basal 0.5 of first and fifth segments wholly blackish (Fig. 2, d). Wings clear hyaline.

Male : Unknown.

Length : ♀, 12 mm. Fore wing 9 mm. Ovipositor sheath about 4.5 mm.

Holotype ♀, Japan : Yokohama, Kanagawaken, 25.v.1993, Coll. Kaku Sato (A.E.I., Florida).

Distribution : Japan.

5. *Caenocryptoides flavescens*, sp. nov.

This species is distinguished from other species by having its body largely marked with yellow.

Female : Face subpolished, in the middle with close and moderately deep punctures, near the eye margin mat and shallowly punctate. Clypeus subpolished with close to sparse, small punctures, towards the apex smooth and shiny. Mandibles, except the teeth with close fine punctures. Frons in the middle moderately strongly rugoso-punctate; at sides mat with moderate sized, close and shallow punctures. Ocellar triangle densely punctate. Vertex mat with fine and close punctures. Temple subpolished, sparsely and finely punctate. Malarspace granulate, 0.5x the basal width of mandible. Pronotum strongly wrinkled and carinate in the middle, its upper area and pronotal collar closely punctate. Epomia short but strong. Scutellum shiny, sparsely punctate, lateral carina extending to its basal 0.25. Metascutellum smooth and shiny. Mesopleurum finely rugoso-winkled in the middle, trans-wrinkled above near subtegular ridge, mesosternum and area above sternaulus with fine dense punctures, punctures running into fine aciculations, prepectal carina extending about 0.85 the height of mesopleurum, speculum shiny with small, deep and sparse punctures posteriorly. Metapleurum finely trans-wrinkled, in the center appears to be finely reticulate, juxtacoxal carina not present. Propodeum between basal carina apex finely wrinkled, in the center appears to be reticulate, based of basal carina with moderate sized dense and deep punctures. First tergite mat and subpolished, except at the extreme base and apex with moderate sized deep punctures. Following tergites mat, second and third tergites densely and finely punctate, fourth with setiferous punctures.

Black. 4th to 10th flagellar segments white above. The following are yellow : Face except for a small spot near antennal bases, clypeus except the clypeal groove and apical margin, mandible except the teeth, malarspace, frons and vertex along the eye margin, temple broadly along the eye margin (Fig. 2, e), an oval mark on propleurum, pronotal collar, upper margin of pronotum, tegula, scutellum, metascutellum, subtegular ridge, mesopleurum with a broad irregular mark, metanotum near the base of hind wing, metapleurum with a small spindle-shaped mark above, propodeum with a broad heart-shaped mark (Fig. 2, f), and apices of all the abdominal tergites (Fig. 2, g). All the coxae and trochanters yellow, except fore and middle coxae at the inner side and hind coxae broadly at sides and first trochanteral segment above, black, Rest of legs in general brownish-yellow, except fore and middle femora and tibiae with a line dorsally and their tarsi almost wholly, apical 0.3 of hind femur, tibia at extreme base and apex and tarsus at extreme base,

dark brown to black, (its fifth tarsal segment and claws broken), rest of tarsus white (Fig. 2, h). Wings clear hyaline.

Male : Unknown.

Length : ♀, 13.5 mm. Fore wing 10.5 mm. Ovipositor sheath 4.5 mm.

Holotype : ♀, India : Meghalaya : Cherrapunji in Khasi Hills (formerly in Assam), 1273 m, 5.iv.1966, D.T. Tikar, Colln. No. T 170 (Z.S.I. Calcutta).

Distribution : India : Meghalaya.

SUMMARY

This paper deals with four new species of *Caenocryptoides* Uchida viz., *C. rugosus*, *C. maai*, *C. nigrifacies*, and *C. flavescens* from India, China and Japan. A redescription of *C. tarsalis* (Matsumura) is also included in the text.

Caenocryptoides has been recorded from Japan. This is the first record of this genus from India and China.

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