ON SOME BAEINAE† (PROCTOTRUPOIDEA : SCELIONIDAE) FROM INDIA*

M. S. Mani and M. K. Mukerjee

School of Entomology, St. John's College, Agra-282002, India

The thirteen species, described here, were collected in the course of Field Surveys, undertaken as part of the programme of research, financed by PL 480 Grants by the U.S. Department of Agriculture, in collaboration with the Indian Council of Agricultural Research. The genera *Gryon* (= *Acolus*), *Ceratobaeus* Ashmead, *Odontocolus* Kieffer and *Tetrabaeus* Kieffer are being recorded for the first time from India. The genus *Tetrabaeus* is considered as a *Platygasterid* by some authors, but is being retained under *Baeinae* for the present. They are widely distributed in the world as parasites of eggs of spiders. The types are being retained for the present in the School of Entomology, Agra.

KEY TO THE NEW SPECIES OF *GRYON*

1. Eyes pubescent 2
Eyes bare 9
2. Wings hyaline or nearly hyaline 3
Wings infumated or banded 6
3. Body brown 4
Body darker brown to black 5
4. Club equal to funicle plus 0.90 of pedicel combined; scape 3.10 times longer than thick *brevifunicularis*
5. Club equal to funicle and pedicel combined; scape about 4.13 times longer than thick; head and thorax finely reticulate *sayadreus*
Club not quite equal to funicle and pedicel combined, but shorter; scape about 3.80 times as long as thick; head and thorax finely rugulose *kuruanus*
6. Wings with transverse band 7
Wings obscurely infumate or with browning behind stigmal vein 8
7. Scape over 4.50 times as long as thick; third tergite 2.70 times the second *malabaricus*
Scape less than 4.50 times as long as thick; third tergite 2.30 times the second *obfuscatus*
8. Body yellowish-brown; scape 4.50 times as long as thick; head smooth; *m* : *pm* : *st* 100 : 50 : 250; circular spot behind *st*. *chotanagpurensis*
Body brownish-black; scape 3.33 times as long as thick; head finely shagreened; *m* : *pm* : *st* 100 : 150 : 500; obscure infuscation at tip of *st* *stigmatis*

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†Some authors consider this as a tribe of *Scelioninae*.

9. Body yellowish-brown; scape 4.00 times as long as thick; $m : pm : st$ 100 : 140 : 470 .
 coorgensis
 Body brownish-black; scape 4.70 times as long as thick; $m : pm : st$ 100 : 55 : 210. . .
 brachystigmatis

1. *Gryon brachystigmatis*, sp. nov. (Fig. 1A-J)

Male : Length of body about 1.60 mm; length of fore wing 1.28 mm; length of abdomen 0.90 mm. General colour of body black; eyes dark brown; ocelli black; mandibles brown except reddish teeth; antenna brown except yellowish-brown scape and pedicel; legs brown; wings subhyaline, veins brown; abdomen black.

Head : Gena striate, face and vertex finely reticulate; eyes bare; antennal sockets close to the clypeal border; mandibles tridentate. Head viewed in front (Fig. 1 D) length to width 88 : 100; eye length to head length 59 : 100; lateral

Fig. 1. *Gryon brachystigmatis*, sp. nov. ♂ : A, fore wing; B, stigmal vein; C, hind wing; D, head in front view; E, antenna; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen.

ocelli contiguous with the eye border; interocellar space 5.50 times ocellar diameter; front ocellar space about 2.00 times the ocellar diameter. *Antenna* (Fig. 1 E) : Segments 12, 1.1.0.9.1. Scape 4.66 times longer than thick; pedicel about 2.00 times longer than thick and 0.35 of scape; first funicular segment 1.40 times longer than thick and 0.70 of pedicel; second, third and fourth funicular segments subequal; second funicular segment about 0.50 of pedicel, its length 0.83 of its width; third and fourth segments equal to the second; segments 5-9 subequal; fifth funicular segment 1.12 times the fourth, its length 0.80 of its width; club 1.66 times longer than thick, subequal to the preceding 1.50 funicular segments combined.

Thorax finely reticulate; propodeum rugose; parapsidal furrows distinct. *Fore wing* (Fig. 1 A, B) length to width 100 : 34; venation *sm* : *m* : *pm* : *st* 1115 : 100 : 54 : 212. *Hind wing* (Fig. 1 C) to fore wing length 86 : 100; length to width 100 : 20; marginal fringe about 0.50 of the maximum width of wing. *Fore leg* (Fig. 1 F, G) : Coxa 1.20 times longer than thick; femur 4.25 times longer than thick; tibia about 0.80 of femur, 3.71 times longer than thick, tibial spur about 0.50 of tibia and 0.80 of metatarsus; tarsus 1.38 times tibia; metatarsus about 0.57 of tibia and 0.41 of tarsus; second segment 0.33 of metatarsus; third segment subequal to the second; fourth tarsal segment 0.80 of the third; fifth segment 1.50 times the fourth funicular segment. *Middle leg* (Fig. 1 H) : Coxa 1.40 times longer than thick; femur 4.25 times longer than thick and 2.42 times coxa; tibia subequal to femur, 6.07 times longer than thick; tarsus 0.82 of tibia; metatarsus 0.26 of tibia and 0.32 of tarsus; second segment 0.55 of metatarsus; third segment about 0.80 of the second; fourth tarsal segment subequal to the third; fifth segment 1.50 times the preceding tarsal segment. *Hind leg* (Fig. 1 I) : Coxa 1.33 times longer than thick; femur 5.25 times longer than thick and about 2.62 times coxa; tibia 1.19 times femur, 8.33 times longer than thick; tarsus 0.90 of tibia; metatarsus 0.36 of tibia and about 0.40 of tarsus; second segment 0.44 of metatarsus; third segment 0.87 of the second; fourth segment 0.71 of the third; fifth tarsal segment subequal to the second.

Abdomen : 0.48 of body; viewed dorsally (Fig. 1 J) length to width 100 : 62; petiole and second tergite almost completely striated; third tergite smooth, largest, about 2.40 times the second; ovipositor slightly exerted.

Holotype ♂, on slide, 14.3. INDIA : Mercara : Karnataka (Western Ghats Survey), Coll. M.S. Mani & M.K. Mukerjee, 11.iii.1975. *Other material examined*: 3♂♂, on slides, labelled as "9.2. TAMILNADU : Nilambur (Malabar), Coll. Mani & party, 11.iv.1973," "9.11. KERALA : Moozhiar-Tekkady Rd. (Cardamom Hills), Coll. Mani & party, 19-20.iv.1973," and "9.10. Moozhiar (Cardamom Hills), Coll. Mani & party, 17-20.iv.1973."

2. *Gryon brevifunicularis*, sp. nov. (Fig. 2 A-J)

Female : Length of body 1.18 mm; length of fore wing 0.90 mm; length of

hind wing 0.80 mm; length of abdomen including petiole 0.58 mm. General colour of body brown; vertex black; eyes black; ocelli dark brown; mandibles yellowish-brown; legs yellowish-brown; fore and hind wings subhyaline, pale brownish, *m* very dark brown, veins brown; abdomen brownish-yellow.

Head : Smooth; vertex with the following chaetotaxy : 2 long setae from the posteromesial area of lateral ocelli pointed backward and inward; 3 shorter setae in a row behind and between the lateral ocelli and the eye border; a row of fine and shorter setae between the lateral ocelli; eyes finely and densely

Fig. 2. *Gryon brevipuncularis*, sp. nov. ♀ : A, fore wing; B, stigmal vein; C, hind wing; D, head in front view; E, antenna; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen.

pubescent; antennal sockets close to the clypeal border; mandibles tridentate. Head viewed in front (Fig. 2 D) length to width 68 : 100; eye length to head length 67 : 100; lateral ocelli contiguous with the eye border; interocellar space about 5.00 times ocellar diameter; front ocellar space 2.00 times ocellar diameter. *Antenna* (Fig. 2 E) : Segments 7, 1.1.0.4.1. Scape stout, about 3.10 times longer than thick (excluding the radicle); pedicel 2.22 times longer than thick, 0.61 of scape; first funicular segment longest, about as long as thick, 0.30 of pedicel; 2-4 funicular segments subequal, subglobose, each a little shorter than the first; club ovate, distinctly swollen, 1.94 times longer than thick, subequal to the preceding 4 funicular segments and about 0.90 of pedicel combined.

Thorax : Smooth; parapsidal furrows absent; mesonotum to scutellum 100 : 39. *Fore wing* (Fig. 2 A, B) length to width 100 : 39; venation *sm* : *m* : *pm* : *st* 1500 : 100 : 100 : 500; *sm* with 13 setae directed forwards, *m* and *pm* with 3 long setae. *Hind wing* (Fig. 2 C) to fore wing 89 : 100; length to width 100 : 20; marginal fringe to wing width 56 : 100. *Fore leg* (Fig. 2 F, G) : Coxa 1.25 times longer than thick; femur 3.92 times longer than thick, 2.20 times coxa; tibia 4.09 times longer than thick, 0.81 of femur, tibial spur bifurcate, about 0.33 of tibia, tibial spur to metatarsus 85 : 100; tarsus a little shorter than tibia; metatarsus about 0.38 of tibia and 0.40 of tarsus; second segment 0.37 of metatarsus; 3-4 tarsal segments subequal, each a little shorter than the second; fifth segment 1.50 times the preceding tarsal segment. *Middle leg* (Fig. 2 H) : Coxa 1.22 times longer than thick; femur 3.83 times longer than thick, about 2.09 times coxa; tibia only very slightly longer than femur, 6.00 times longer than thick; tarsus 0.75 of tibia; metatarsus about 0.20 of tibia and 0.27 of tarsus; second segment 0.72 of metatarsus; 3-4 segments subequal, each about 0.83 of the second; fifth segment 1.33 times the preceding tarsal segment. *Hind leg* (Fig. 2 I) : Coxa 1.20 times longer than thick; femur 3.15 times longer than thick, about 2.00 times coxa; tibia 7.61 times longer than thick, 1.33 times femur; tarsus 0.78 of tibia and subequal to femur; metatarsus 0.31 of tibia and 0.40 of tarsus; second segment 0.42 of metatarsus; third segment 0.85 of the second; fourth segment shortest, 0.72 of the third; fifth segment subequal to the third tarsal segment.

Abdomen : Petiole striated the whole length and second tergite striate only in the basal half, otherwise abdomen smooth; third tergite largest, about 2.43 times the second; abdomen viewed dorsally (Fig. 2 J) length to width 100 : 60; 0.49 of the body length; ovipositor slightly exerted beyond the tip of abdomen.

Holotype ♀, on slide, 12.4. INDIA : Ponmudi (Kerala Survey), Coll. M. S. Mani & party, 23.viii.1974.

3. *Gryon chotanagpurensis*, sp. nov. (Fig. 3 A-I)

Female : Length of body 1.22 mm; length of fore wing 0.86 mm; length of hind wing 0.80 mm; length of abdomen 0.54 mm. General colour of body largely yellowish-brown; eyes black; ocelli dark brown; mandibles yellowish-

brown with reddish-brown teeth; antenna brown with the club apically and dorsally darker; thorax yellowish-brown; legs yellowish-brown; fore wing subhyaline with a brown nearly circular spot behind the *st* vein as in figure; hind wing hyaline; veins brown; abdomen yellowish-brown except for the black last three tergites.

Head : Smooth, with a row of fine hairs; eyes finely and sparsely pubescent; antennal sockets close to the clypeal border; mandibles tridentate. Head viewed in front (Fig. 3 C) length to width 75 : 100; eye length to head length 59 : 100; lateral ocelli contiguous with the eye border; interocular space about 6.66 times

Fig. 3. *Gryon chotanagpurensis*, sp. nov. ♀: A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and metatarsus enlarged; G, middle leg; H, hind leg; I, abdomen.

the ocellar diameter; front ocellar space about 2.66 times the ocellar diameter. *Antenna* (Fig. 3 D) : Segments 7, 1.1.0.4.1. Scape long, slender, 4.50 times longer than thick; pedicel 2.22 times longer than thick, 0.44 of scape; first funicular segment longest, about 0.50 of pedicel, 1.53 times longer than thick; second funicular segment 0.50 of the first, transverse; third and fourth funicular segments transverse and subequal to the second funicular segment; club distinctly swollen, 2.25 times longer than thick, subequal to the preceding four funicular segments and pedicel combined.

Thorax : Mesonotum finely reticulate; parapsidal furrows absent. *Fore wing* (Fig. 3A) length to width 100 : 33; venation *sm* : *m* : *pm* : *st* 950 : 100 : 50 : 250; *sm* with 9 bristles directed forward; *m* with 2 and *pm* with 1 bristles directed forward. *Hind wing* (Fig. 3 B) to fore wing length 93 : 100; length to width 100 : 19; marginal fringe about 0.66 of the maximum width of wing. *Fore leg* (Fig. 3 E, F) : Coxa 1.42 times longer than thick; femur 5.00 times longer than thick, 3.57 times coxa; tibia thickens apically, about 0.76 of femur, 4.75 times longer than thick, tibial spur 0.36 of tibia and 0.70 of metatarsus; tarsus 1.36 times tibia; metatarsus about 0.50 of tibia and about 0.38 of tarsus; second segment 0.40 of metatarsus; third segment subequal to the second; fourth segment 0.75 of the third; fifth segment 1.66 times the preceding tarsal segment. *Middle leg* (Fig. 3 G) : Coxa 1.25 times longer than thick; femur 5.20 times longer than thick, 2.60 times coxa; tibia slightly longer than femur, 7.00 times longer than thick; tarsus subequal to femur, a little shorter than tibia; metatarsus 0.25 of tibia and 0.26 of tarsus; second segment 0.85 of metatarsus; third segment 0.83 of the second; fourth segment 0.80 of the third; fifth segment subequal to the third tarsal segment. *Hind leg* (Fig. 3 H) : Coxa 1.33 times longer than thick; femur 4.66 times longer than thick, 2.33 times coxa; tibia 1.28 times femur, 9.00 times longer than thick, tibial spur 0.30 of metatarsus; tarsus a little longer than tibia; metatarsus 0.41 of tibia and 0.39 of tarsus; second segment 0.53 of metatarsus; third segment 0.75 of the second; fourth segment 0.83 of the third; fifth segment subequal to the third tarsal segment.

Abdomen smooth; 0.44 of body; viewed dorsally (Fig. 3 I) length to width 100 : 63; petiole and second abdominal tergite striated only in front; third tergite with fine reticulations, largest, about 3.00 times the second; ovipositor slightly exerted.

Holotype ♀, on slide, 13.1. INDIA : BIHAR : Kuru (Chota Nagpur Survey), Coll. M.S. Mani & party, 29.xi.1974.

This species differs from the others in the wing being relatively narrow, wing spot nearly circular and restricted to behind the stigmal vein, relatively short *pm*.

4. *Gryon coorgensis*, sp. nov. (Fig. 4 A-J)

Male : Length of holotype 1.26 mm; length of other specimens 1.30 mm; mean 1.28 mm; length of fore wing 0.98 mm; length of abdomen 0.56 mm.

General colour of body yellowish-brown; eyes black; ocelli dark brown; mandibles yellowish except brown teeth; antenna brown except yellowish scape, club dark brown; legs yellowish; wings hyaline, veins brown; abdomen yellowish-brown with obscurely darker tip.

Head: Vertex with faint microsculpture; antennal sockets below the middle of face, a little close to the clypeal border; eyes bare; mandibles tridentate. Head viewed in front (Fig. 4 C) length to width 71 : 100; eye length to head length 53 : 100; lateral ocelli contiguous with the eye border; interocellar space about 6.85 times ocellar diameter; front ocellar space about 2.50 times the diameter of median ocellus. *Antenna* (Fig. 4 D): Segments 12, 1.1.0.9.1. Scape 4.00 times longer than thick; pedicel 1.60 times longer than thick and 0.40 of scape; first funicular segment 1.50 times longer than thick and 0.93 of

Fig. 4. *Gryon coorgensis*, sp. nov. ♂: A, fore wing; B, stigmal vein; C head in front view; D, antenna; E, thorax; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen.

pedicel; segments 2-9 subequal; second segment 0.66 of first, its length 0.90 of its width; club 2.00 times longer than thick, subequal to the preceding two funicular segments combined.

Thorax : Mesonotum and scutellum finely reticulate; propodeum rugose; viewed dorsally (Fig. 4 E) length to width 100 : 84; parapsidal furrows present. **Fore wing** (Fig. 4 A, B) length to width 100 : 39; venation *sm* : *m* : *pm* : *st* 1333 : 100 : 140 : 467; *sm* with 9 bristles directed forward, *m* and *pm* with 3 bristles. **Fore leg** (Fig. 4 F, G) : Coxa 1.25 times longer than thick; femur 5.00 times longer than thick and 2.60 times coxa; tibia 0.84 of femur, 4.58 times longer than thick, tibial spur about 0.33 of tibia and 0.77 of metatarsus; tarsus subequal to tibia; metatarsus 0.40 of tibia or tarsus; second segment 0.33 of metatarsus; third and fourth tarsal segments equal to the second; fifth segment 1.33 times the preceding tarsal segment. **Middle leg** (Fig. 4 H) : Coxa 1.25 times longer than thick; femur 5.60 times longer than thick; tibia subequal to femur, 7.25 times longer than thick; tarsus 0.68 of tibia; metatarsus about 0.17 of tibia and 0.25 of tarsus; second segment subequal to metatarsus; third segment 0.60 of the second; fourth segment subequal to the third; fifth segment 1.33 times the preceding tarsal segment. **Hind leg** (Fig. 4 I) : Coxa 1.44 times longer than thick; femur 5.71 times longer than thick and 2.46 times coxa; tibia 9.50 times longer than thick, 1.18 times femur; tarsus 0.89 of tibia; metatarsus about 0.36 of tibia and 0.41 of tarsus; second segment 0.57 of metatarsus; third segment 0.75 of the second; fourth segment 0.66 of the third; fifth segment subequal to the preceding tarsal segment.

Abdomen smooth; 0.44 of body length; petiole and second tergite completely striated; third tergite largest, about 3.33 times the second; abdomen viewed dorsally (Fig. 4 J) length to width 100 : 71.

Holotype ♂, on slide, 14.4. INDIA : Gonikopal : Karnataka (Western Ghats Survey), Coll. M.S. Mani & M.K. Mukerjee, 12.iii.1975. **Other material examined** : ♂, on slide, 14.1. Appangala : Karnataka (Western Ghats Survey), Coll. M. S. Mani & M.K. Mukerjee, 9.iii.1975.

5. *Gryon kuruanus*, sp. nov. (Fig. 5 A-I)

Female Length of holotype 1.38 mm; length of paratype 1.10 mm; length of fore wing about 0.95 mm; length of hind wing about 0.87 mm; length of abdomen 0.54-0.62 mm. General colour of body brownish-black to black; eyes black; ocelli brown; mandibles yellowish except brown teeth; pedicel, funicular segments and tip of club blackened; thorax black; legs brownish-yellow except brownish coxae of fore and hind legs; wings hyaline, veins brownish; abdomen brownish-black to black.

Head closely minutely punctate; vertex with fine hairs (in the paratype specimen the vertex is with the following chaetotaxy : 3 long, curved, stout bristles in the lateral ocellar area with one fine short seta mesially near by);

eyes finely and densely pubescent; antennal sockets below the lower orbital border, near the clypeal margin; mandibles bidentate. Head viewed in front (Fig. 5 C) length to width 76 : 100; eye length to head length 56 : 100; lateral ocelli contiguous with the eye border; interocellar space 7.00-8.00 times the ocellar diameter; front ocellar space 3.00-3.33 times the ocellar diameter. *Antenna* (Fig. 5 D) : Segments 7, 1.1.0.4.1. Scape slender, 3.40-4.20 times longer than thick; pedicel 2.00-2.33 times longer than thick, 0.38-0.51 of scape; first funicular segment longest, 0.42-0.50 of pedicel, 1.33-1.50 times longer than

Fig. 5. *Gryon kuruanus*, sp. nov. ♀: A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and matatarsus enlarged; G, middle leg; H, hind leg; I, abdomen.

thick; second funicular segment transverse, about 0.50 of the first; third and fourth funicular segments subequal to the second; fourth segment distinctly transverse; club oval, distinctly swollen, subequal to the scape, 1.60 times longer than thick, subequal to the preceding four funicular segments and pedicel combined.

Thorax : Mesonotum and scutellum finely rugulose punctate; parapsidal furrows absent; mesonotum to scutellum 100 : 89. *Fore wing* (Fig. 5 A) length to width 100 : 37; *sm* : *m* : *pm* : *st* 1000 : 100 : 100 : 280; *sm* with 9 bristles, *m* and *pm* with 3-4 bristles. *Hind wing* (Fig. 5 B) to fore wing 90-93 : 100; length to width 100 : 19; fringe at hind margin about 0.50 of the maximum width of wing. *Fore leg* (Fig. 5 E, F) : Coxa about 1.23 times longer than thick; femur 4.78-5.33 times longer than thick, 2.66 times coxa; tibia thickening towards apex, 0.71 of femur, 4.00-4.60 times longer than thick, tibial spur bifurcate, about 0.38 of tibia and about 0.75 of metatarsus; tarsus 1.30 times tibia and subequal to the femur; metatarsus 0.37-0.52 of tibia and 0.34-0.40 of tarsus; second segment 0.41-0.50 of metatarsus; third segment 0.66-0.80 of the second; fourth segment subequal to the third; fifth segment subequal to the second tarsal segment. *Middle leg* (Fig. 5 G) : Coxa 1.12-1.30 times longer than thick; femur equal to the fore femur, 4.40-5.33 times longer than thick; tibia very slightly shorter than femur, 5.52-7.50 times longer than thick; tarsus subequal to tibia; metatarsus 0.23-0.26 of tibia and 0.26-0.27 of tarsus; second segment 0.75-0.80 of metatarsus; third segment 0.83-0.85 of the second; fourth and fifth segments equal to the third tarsal segment. *Hind leg* (Fig. 5 H) : Coxa 1.26 times longer than thick; femur 4.00-4.85 times longer than thick, about 2.42 times coxa; tibia thickening apically, 7.25-8.00 times longer than thick, 1.17-1.20 times femur; tarsus subequal to tibia; metatarsus 0.37-0.40 of tibia or tarsus; second segment 0.54-0.56 of metatarsus; third segment 0.66-0.76 of the second; fourth segment 0.73-0.83 of the third; fifth segment subequal to the preceding tarsal segment.

Abdomen : 0.44-0.49 of body; viewed dorsally (Fig. 5 I) length to width 100 : 70-74; third tergite finely striate, fourth tergite punctate, third sternite finely punctate; petiole and second abdominal tergite striated the whole length; third tergite largest, 3.00-3.22 times the second; ovipositor very slightly exerted.

Holotype ♀, on slide, *paratype* one ♀, on slide, 13.1. INDIA : BIHAR : Kuru (Chota Nagpur Survey), Coll. M.S. Mani & party, 29.xi.1974.

6. *Gryon malabaricus*, sp. nov. (Fig. 6 A-I)

Female : Length of body 1.40 mm; length of fore wing 0.90 mm; length of hind wing about 0.86 mm; length of abdomen 0.58 mm-0.64 mm. General colour of body brown to blackish-brown; eyes black; ocelli dark brown to black; antenna yellowish-brown with yellowish-brown to dark brown scape, pedicel

and yellowish-brown to brown club segment; thorax brown to dark brown; coxae of all the legs brown, rest yellowish-brown; fore wing brown with a brown to dark brown transverse band from the region of *m* as in figure beyond which the general infuscation is darker especially towards the tip; hind wings hyaline, veins brown; abdomen yellowish-brown to black with obscure transverse dark brown markings at segmental margins in the paratype specimen.

Fig. 6. *Gryon malabaricus*, sp. nov. ♀: A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and metatarsus enlarged; G, middle leg; H, hind leg; I, abdomen.

Head : Vertex with fine microsculpture, with a row of short setae; eyes finely and densely pubescent; antennal sockets far below the lower orbital border, near the clypeal border; mandibles long, tridentate. Head viewed in front (Fig. 6 C) length to width 70-75 : 100; eye length to head length 61-63 : 100; lateral ocelli contiguous with the eye border; interocellar space 6.66-7.50 times the ocellar diameter; front ocellar space 3.00-3.12 times the ocellar diameter. *Antenna* (Fig. 6 D) : Segments 7, 1.1.0.4.1. Scape slender, long, 4.50-5.00 times longer than thick; pedicel 2.22 times longer than thick, 0.40-0.44 of scape; first funicular segment longest, about 1.40 times longer than thick, 0.45-0.50 of pedicel; second funicular segment about 0.50 of the first, transverse; 3-4 funicular segments transverse and subequal to the second; club greatly swollen, ovate to elliptic ovate, 2.11-2.37 times longer than thick, subequal to the preceding four funicular segments and pedicel combined.

Thorax : Mesonotum finely rugulose; parapsidal furrows absent; mesonotum to scutellum 100 : 67. *Fore wing* (Fig. 6A) length to width 100 : 36-38; venation *sm* : *m* : *pm* : *st* 1400 : 100 : 100 : 400; *sm* with 7-8 long bristles directed forward, *m* and *pm* with 3 long bristles directed forward. *Hind wing* (Fig. 6B) to fore wing 93-96 : 100; length to width 100 : 20; marginal fringe to wing width 53 : 100. *Fore leg* (Fig. 6 E, F) : Coxa 1.11-1.25 times longer than thick; femur 4.66-5.18 times longer than thick, 2.80 times coxa; tibia thickened apically, 4.40-5.00 times longer than thick, about 0.75 of femur, tibial spur trifurcate, 0.35 of tibia, tibial spur to metatarsus 74 : 100; tarsus 1.13-1.20 times tibia; metatarsus 0.40-0.50 of tibia and 0.36-0.41 of tarsus; second segment 0.40-0.44 of metatarsus; third and fourth tarsal segments subequal, 0.75 of the second; fifth segment subequal to the second. *Middle leg* (Fig. 6G) : Coxa 1.22-1.37 times longer than thick; femur subequal to the fore femur, 5.00-5.18 times longer than thick, 2.54-2.70 times coxa; tibia subequal to the femur, 6.75-7.25 times longer than thick; tarsus 0.79-0.88 of tibia; metatarsus 0.20-0.25 of tibia and 0.26-0.29 of tarsus; second segment 0.71-0.83 of metatarsus; third segment 0.80 of the second; fourth segment 0.75-0.80 of the third; fifth segment subequal to the second tarsal segment. *Hind leg* (Fig. 6H) : Coxa 1.33-1.40 times longer than thick; femur 5.33-5.66 times longer than thick and 2.42-2.66 times coxa; tibia 1.16 times femur, 8.63-8.86 times longer than thick; tarsus subequal to tibia; metatarsus 0.42 of tibia or tarsus; second segment 0.43 of metatarsus; third segment 0.71-0.85 of the second; fourth segment 0.66-0.80 of the third; fifth segment 1.50 times the preceding tarsal segment.

Abdomen : Finely reticulate; 0.41 of body length; petiole and the second tergite striated the whole length, third tergite completely smooth, largest, 2.40-3.00 times the second; abdomen viewed dorsally (Fig. 6 I) length to width 100 : 66-69; ovipositor very slightly exerted.

Holotype ♀, on slide, 9.10. INDIA : KERALA : Moozhiar (Cardamom Hills), Coll. Mani & party, 17-20.iv.1973. *Other material examined* ♀, on slide, 5.24

MAHARASHTRA : Thana Hill, Krishnagiri-Bombay, Coll. Mani & party, 17-21.iv.1972.

This species apparently approaches close to *A. speciossimu* Dodd* but differs in the absence of apical infumated band in fore wing.

7. *Gryon obfuscatus*, sp. nov. (Fig. 7 A-J)

Female : Length of holotype 1.28 mm, length of *other specimen* 1.26 mm, mean 1.27 mm; length of fore wing 1.00 mm; length of hind wing 0.90 mm; length of

Fig. 7. *Gryon obfuscatus*, sp. nov. ♀ : A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and metatarsus enlarged; G, middle leg; H, hind leg; I, abdomen; J, petiole and second abdominal tergite showing striations.

*Dodd, 1914, *Trans. R. Soc. S. Austral.*, 38 : 70.

abdomen 0.56 mm. General colour of body brown; eyes black; ocelli brown; mandibles yellowish, tips brown; antenna yellowish-brown; legs yellowish-brown; wings infumated brown as in figure; abdomen yellowish-brown.

Head : finely reticulate; viewed in front (Fig. 7 C) length to width 73 : 100; eye length to head length 58 : 100; lateral ocelli contiguous with the eye border; interocellar space 6.75 times ocellar diameter; front ocellar space 3.00 times ocellar diameter. *Antenna* (Fig. 7 D) : Segments 7, 1.1.0.4.1. Scape 4.25 times longer than thick; pedicel 2.10 times longer than thick and 0.47 of scape; first funicular segment 1.25 times longer than thick and 0.50 of pedicel; 2-4 funicular segments transverse and subequal; second funicular segment 0.50 of the first, its length 0.66 of its thickness; third segment 0.58 of its own thickness; fourth funicular segment 0.55 of its thickness; club greatly swollen, 2.00 times longer than thick, subequal to the preceding 4 funicular segments and pedicel combined.

Thorax with fine reticulations; parapsidal furrows absent. *Fore wing* (Fig. 7 A) length to width 100 : 37; venation *sm* : *m* : *pm* : *st* 1533 : 100 : 100 : 466; *sm* with two short and 5 long bristles directed forward, *m* and *pm* with 3 long bristles directed forward. *Hind wing* (Fig. 7 B) to fore wing 90 : 100; length to width 100 : 18; marginal fringe to wing width 50 : 100. *Fore leg* (Fig. 7 E, F) : Coxa 1.22 times longer than thick; femur 4.66 times longer than thick and 2.54 times coxa; tibia thickened apically, 4.00 times longer than thick and 0.71 of femur, tibial spur to metatarsus 76 : 100; tarsus subequal to femur and 1.40 times tibia; metatarsus about 0.50 of tibia and about 0.35 of tarsus; second segment 0.44 of metatarsus; third segment 0.90 of the 2nd; 4th segment subequal to the third; fifth segment equal to the second tarsal segment. *Middle leg* (Fig. 7 G) : Coxa 1.20 times longer than thick; femur subequal to the fore femur, 4.66 times longer than thick and about 2.41 times coxa; tibia subequal to femur, 7.00 times longer than thick; tarsus subequal to tibia; metatarsus 0.28 of tibia and 0.29 of tarsus; second segment 0.75 of metatarsus; third segment 0.83 of the second; fourth segment 0.80 of the third; fifth segment subequal to the third tarsal segment. *Hind leg* (Fig. 7 H) : Coxa 1.20 times longer than thick; femur 4.54 times longer than thick and 2.50 times coxa; tibia 1.20 times femur, 8.57 times longer than thick; tarsus 1.05 times tibia; metatarsus 0.38 of tibia and 0.36 of tarsus; second segment 0.57 of metatarsus; third segment 0.75 of the second; fourth segment 0.83 of the third; fifth segment equal to the preceding tarsal segment.

Abdomen smooth; 0.43 of body length; second tergite striated the whole length, third tergite completely smooth; abdomen viewed dorsally (Fig. 7 I, J) length to width 100 : 82; third tergite 2.27 times the second tergite; ovipositor a little exerted beyond the tip of abdomen.

Holotype ♀, on slide, 5.2. INDIA : MAHARASHTRA : Singarh Fort : Poona, Coll. Mani & party, 7.iii.1972. *Other material examined* : ♀, on slide, 9.13 TAMIL NADU : Papanasam (Shencotah Gap), Coll. Mani & party, 27.iv.1973.

This species resembles *A. zonatus* Kieffer.¹ from Seychelles in its spotted wings, but differs in the general colour being not black, in the somewhat larger body, second and third antennal segments not being as long as thick and in the second abdominal tergite striated the whole of its length. It also resembles *A. unifasciatipennis* Dodd² in the wing colour but is larger in size. It resembles *A. pulcher* Dodd³ in its banded wing and body size, but differs in the third antennal segment not being twice as long as the first.

8. *Gryon sayadreus*, sp. nov. (Fig. 8 A-K & 9 A-K)

Female : Length of holotype 1.28 mm; range 1.08-1.36 mm, mean 1.21 mm; length of fore wing 1.18 mm; length of hind wing 1.02 mm; length of abdomen 0.58 mm. General colour of body dark brown; eyes black; mandibles yellowish-brown; antenna yellowish-brown; legs yellowish-brown except dark brown coxae; wings hyaline, veins brownish; abdomen brownish-black.

Head with fine reticulate matt; eyes finely and sparsely pubescent; antennal sockets a little below the lower orbital border; mandibles tridentate. Head viewed in front (Fig. 8 D) length to width 84 : 100; eye length to head length 49 : 100; lateral ocelli contiguous with the eye border; interocellar space 7.00 times ocellar diameter; front ocellar space 3.00 times ocellar diameter. *Antenna* (Fig. 8 E) : Segments 7, 1.1.0.4.1. Scape slightly thicker in the middle, 4.13 times longer than thick; pedicel 2.64 times longer than thick and 0.47 of scape; first funicular segment longest, 1.92 times longer than thick and 0.55 of pedicel; second, third and fourth segments subequal; second and third segments 0.40 times the first funicular segment, subglobose; fourth segment transverse, with a length 0.62 times its diameter; club greatly swollen, 2.50 times longer than thick, subequal to the preceding 4 funicular segments and pedicel combined.

Thorax : With fine reticulation, matt; parapsidal furrows absent; scutellum length to width 47 : 100. *Fore wing* (Fig. 8 A, B) length to width 100 : 36; venation *sm* : *m* : *pm* : *st* 1250 : 100 : 125 : 425; *sm* with 8 fine long bristles directed forward, *m* and *pm* with 3-4 stout bristles. *Hind wing* (Fig. 8 C) to fore wing 86 : 100; length to width 100 : 20; marginal fringe to wing width 40 : 100. *Fore leg* (Fig. 8 F, G) : Coxa 1.33 times longer than thick; femur 5.00 times longer than thick and 2.25 times coxa; tibia 4.00 times longer than thick and 0.66 of femur, tibial spur trifurcate, tibial spur to metatarsus 3 : 5; tarsus 1.33 times tibia; metatarsus about 0.50 of tibia and 0.37 of tarsus; second segment 0.41 of metatarsus; third segment 0.80 of the second; fourth segment equal to the third; fifth tarsal segment about 0.50 of metatarsus. *Middle leg* (Fig. 8 H) : Coxa about 1.50 times longer than thick; femur 5.14 times longer than thick and about 2.00 times coxa; tibia subequal to femur, 7.39 times longer than thick,

1. Kieffer, 1910, *Bull. Soc. Ent. France*, 294; *Das Tier.*, 48 : 162 (1926).

2. Dodd, 1940, *Trans. R. Soc. Austral.*, 38 : 68.

3. Dodd, 1940, *Trans. R. Soc. Austral.*, 38 : 68.

Fig. 8. *Gryon sayadreus*, sp. nov. ♀: A, fore wing; B, stigmal vein; C, hind wing; D, head in front view; E, antenna; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen; K, petiole and second abdominal tergite showing striations.

tibial spur 0.40 of metatarsus; tarsus 0.94 of tibia; metatarsus 0.26 of tibia and 0.28 of tarsus; second segment 0.66 of metatarsus; third segment 0.83 of the second; fourth segment equal to the third; fifth tarsal segment subequal to the second. *Hind leg* (Fig. 8 I): Coxa 1.50 times longer than thick; femur 4.75 times longer than thick and about 2.11 times coxa; tibia 1.15 times femur, 8.46 times longer than thick, tibial spur 0.30 of metatarsus; tarsus subequal to tibia; metatarsus 0.38 of tibia and 0.40 of tarsus; second segment 0.52 of metatarsus;

third segment 0.77 of the second; fourth segment 0.71 of the third; fifth segment 1.20 times the preceding tarsal segment.

Abdomen smooth; second abdominal tergite striated the whole length, third tergite completely smooth, largest, 3.00 times as long as second; abdomen viewed dorsally (Fig. 8 J, K) length to width 100 : 88; 0.46 of body length.

Male : Length of allotype 0.98 mm; length of fore wing 0.82 mm; length of hind wing 0.74 mm; length of abdomen 0.40 mm. General colour of body dark brown; eyes black; mandibles brownish; antenna brown except yellow scape; thorax dark brown; legs yellowish; wings hyaline, veins brownish; abdomen dark brown except the yellowish-brown petiole.

Fig. 9. *Gryon sayadreu*, sp. nov. ♂ : A, fore wing; B, stigmal vein; C, hind wing; D, head in front view; E, antenna; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen; K, petiole and second abdominal tergite showing striations.

Head : Vertex finely reticulate; eyes finely and sparsely pubescent; mandibles tridentate; antennal sockets a little below the lower orbital border. Head viewed in front (Fig. 9D) length to width 76 : 100; eye length to head length 55 : 100; lateral ocelli contiguous with the eye border; interocellar space about 7.70 times ocellar diameter; front ocellar space about 3.07 times the diameter of median ocellus. *Antenna* (Fig. 9E): Segments 12, 1.1.0.8.2. Scape 5.00 times longer than thick; pedicel 1.66 times longer than thick and 0.33 of scape; first funicular segment longest, 1.66 times longer than thick and 1.20 times pedicel; 2-8 funicular segments subequal, terminal one becoming gradually transverse; second segment 1.33 times longer than thick and 0.66 of the first funicular segment; third segment 1.47 times longer than thick and subequal to pedicel; 4-8 funicular segments 1.17 times longer than thick, 0.80 of the third funicular segment; club 2.75 times longer than thick; first club segment as long as thick; second segment 1.75 times longer than thick and about 2.00 times the first; club subequal to the preceding 2.75 funicular segments combined.

Thorax finely reticulate; parapsidal furrows absent. *Fore wing* (Fig. 9 A, B) length to width 100 : 37; venation *sm* : *m* : *pm* : *st* 850 : 100 : 125 : 300; *sm* with 8 long bristles, *m* and *pm* with 4 long bristles. *Hind wing* (Fig. 9 C) length to width 100 : 20; marginal fringe to wing width 57 : 100. *Fore leg* (Fig. 9 F, G) : Coxa about 1.50 times longer than thick; femur 5.50 times longer than thick; tibia 4.25 times longer than thick, 0.77 of femur, tibial spur trifurcate, tibial spur to metatarsus 68 : 100; tarsus 1.58 times tibia; metatarsus 0.58 of tibia and 0.37 of tarsus; 2-4 segments subequal, 0.40 of metatarsus; fifth tarsal segment about 0.50 of metatarsus. *Middle leg* (Fig. 9 H) : Coxa 1.28 times longer than thick; femur equal to the fore femur, 5.50 times longer than thick; tibia widening apically, equal to femur, 6.87 times longer than thick; tarsus equal to tibia; metatarsus 0.27 of tibia or tarsus; second segment 0.66 of metatarsus; 3-5 tarsal segments subequal to the second. *Hind leg* (Fig. 9 I) : Coxa 1.31 times longer than thick; femur 5.00 times longer than thick, 2.50 times coxa; tibia 8.33 times longer than thick, 1.20 times femur; tarsus subequal to tibia; metatarsus 0.40 of tibia and 0.38 of tarsus; second segment about 0.50 of metatarsus; 3-5 tarsal segments subequal, 0.66 of the second segment.

Abdomen smooth; second tergite striated the whole length, third tergite completely smooth, largest, 3.00 times the second; abdomen almost equal to thorax; 0.40 of body length; viewed dorsally (Fig. 9 J, K) length to width 100 : 70.

Holotype ♀, on slide, 5.24. INDIA : MAHARASHTRA : Thana Hill, Krishnagiri-Bombay, Coll. Mani & party, 17-21.iv.1972; *allotype* ♂, on slide, 14.6. Kasargod : Kerala (Western Ghats Survey), Coll. M.S. Mani & M.K. Mukerjee, 16.iii.1975; *paratypes* 24♀♀, on slides, 5.24. Thana Hill, Krishnagiri-Bombay, Coll. Mani & party, 17-21.iv.1972. *Other material examined* : 1♂, on slide, 1.2. INDIA : H.P. : Kalatop : Dalhousie, Coll. Mani & party, 26.v.1971.

This species differs from all the others in *pm* being distinct, though short,

second abdominal tergite striated the whole length and antennae in male with 12 segments.

9. *Gryon stigmaticus*, sp. nov. (Fig. 10 A-J)

Female : Length of body 1.08 mm; length of fore wing 0.82 mm; length of hind wing 0.78 mm; length of abdomen 0.60 mm. General colour of body

Fig. 10. *Gryon stigmaticus*, sp. nov. ♀ : A, fore wing; B, stigmal vein; C, hind wing; D, head in front view; E, antenna; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen.

brownish-black; eyes and ocelli dark brown; antennae brown, pedicel, first funicular segment and club darkened; legs yellowish-brown except brown coxae and femur; wings hyaline except for some obscure infuscation at the tip of stigmal vein; veins brown; abdomen dark brown.

Head finely shagreened; vertex with fine hairs; eyes finely and densely pubescent; antennal sockets close to the clypeal border. Head viewed in front (Fig. 10D) length to width 78 : 100; eye length to head length 63 : 100; lateral ocelli contiguous with the eye border; interocellar space 8.46 times ocellar diameter; front ocellar space 3.84 times ocellar diameter. *Antenna* (Fig. 10 E) : Segments 7, 1.1.0.4.1. Scape 3.33 times longer than thick; pedicel 1.66 times longer than thick, about 0.50 of scape; first funicular segment as long as thick, about 0.33 of pedicel; 2-4 funicular segments subequal in lengths, transverse, each about 0.75 of the first; second funicular segment 0.75 of its width; third funicular segment 0.57 of its width; fourth funicular segment 0.44 of its width; club ovate but reduce apically, 2.16 times longer than thick, subequal to the preceding four funicular segments and pedicel combined.

Thorax very finely reticulate; viewed dorsally length to width 100 : 95; mesonotum subequal to scutellum; propodeum smooth. *Fore wing* (Fig. 10A, B) length to width 100 : 39; venation *sm* : *m* : *pm* : *st* 1800 : 100 : 150 : 500; *sm* with 12 bristles; *m* and *pm* with 3 bristles. *Hind wing* (Fig. 10 C) to fore wing 95 : 100; length to width 100 : 15; marginal fringe to wing width 50 : 100. *Fore leg* (Fig. 10 F, G) : Coxa 1.31 times longer than thick; femur 5.50 times longer than thick; tibia thickening apically, 4.50 times longer than thick, 0.81 of femur, tibial spur 0.83 of metatarsus and 0.27 of tibia; tarsus subequal to tibia; metatarsus 0.33 of tibia or tarsus; second segment 0.50 of metatarsus; third and fourth segments subequal, 0.66 of the second; fifth segment about 2.00 times the preceding tarsal segment. *Middle leg* (Fig. 10 H) : Coxa 1.42 times longer than thick; femur 4.80 times longer than thick, 2.40 times coxa; tibia subequal to femur, 6.38 times longer than thick; tarsus 0.78 of tibia; metatarsus 0.21 of tibia and 0.27 of tarsus; second segment 0.80 of metatarsus; third and fourth tarsal segments subequal, about 0.60 of the second; fifth segment subequal to the second tarsal segment. *Hind leg* (Fig. 10I) : Coxa 1.37 times longer than thick; femur 4.33 times longer than thick, 2.36 times coxa; tibia 8.00 times longer than thick, thickening apically, 1.23 times femur; metatarsus 0.34 of tibia; second segment 0.45 of metatarsus; third and fourth segments subequal, about 0.60 of the second tarsal segment.

Abdomen smooth; 0.55 of body length; viewed dorsally (Fig. 10J) length to width 100 : 55; petiole and second abdominal tergite striated the whole length, third tergite completely smooth, about 2.00 times the second; ovipositor well exerted beyond the tip of abdomen.

Holotype ♀, on slide, 14.9. INDIA : Mudigere : Karnataka (Western Ghats Survey), Coll. M.S. Mani & M.K. Mukerjee, 21.iii.1975.

10. *Ceratobaeus peninsularis*, sp. nov. (Fig. 11 A-L)

Female : Length of body 1.46 mm; length of fore wing 1.16 mm; length of hind wing 1.08 mm; length of abdomen 0.82 mm. General colour of body blackish-brown; eyes and ocelli dark brown; mandibles yellowish-brown;

Fig. 11. *Ceratobaeus peninsularis*, sp. nov. ♀: A, fore wing; B, stigmal vein; C, hind wing; D, head in front view; E, antenna; F, fore leg; G, tip of fore tibia and metatarsus enlarged; H, middle leg; I, hind leg; J, abdomen in lateral view; K, abdomen in dorsal view; L, petiole and second abdominal tergite showing striations.

antenna brown; legs yellowish-brown except brownish coxae of fore and hind legs; wings hyaline, veins brownish; abdomen dark brown.

Head finely rugulose; eyes finely and sparsely pubescent; mandibles bidentate; antennal sockets close to the mouth border. Head viewed from above as wide as the maximum width of thorax; head viewed in front (Fig. 11D) length to width 75 : 100; eye length to head length 55 : 100; ocellular space 0.50 of the ocellar diameter; interocellar space 6.00 times ocellar diameter; front ocellar space about 2.75 times ocellar diameter. *Antenna* (Fig. 11E); Segments 7, 1.1.0.4.1. Scape 5.50 times longer than thick; pedicel 2.50 times longer than thick and 0.45 of scape; first funicular segment 2.33 times longer than thick and 0.70 of pedicel; second segment as long as thick and 0.42 of the first funicular segment; third segment equal to the second; fourth funicular segment as long as thick and 1.20 times the preceding segment; club greatly swollen, 2.33 times longer than thick; club subequal to the preceding funicular segments and about 0.28 of pedicel combined.

Thorax finely reticulately rugulose; parapsidal furrows absent. *Fore wing* (Fig. 11 A, B) length to width 100 : 34; venation *sm* : *m* : *pm* : *st* 1733 : 100 : 67 : 533; *sm* with 3 short and 6 long setae directed forward, *m* with 2 setae and *pm* with 1 seta directed forward; basal vein distinct. *Hind wing* (Fig. 11 C) length to width 100 : 17; marginal fringe to wing width 50 : 100. *Fore leg* (Fig. 11 F, G) : Coxa 1.33 times longer than thick; femur 5.00 times longer than thick, 2.50 times coxa; tibia 4.80 times longer than thick, 0.80 of femur; tarsus 1.41 times tibia; metatarsus with 7 bristles directed forward, 0.58 of tibia and 0.41 of tarsus; second segment 0.35 of metatarsus; third segment subequal to the second; fourth segment 0.80 of the third; fifth segment 1.50 times the preceding tarsal segment. *Middle leg* (Fig. 11 H) : Coxa 1.33 times longer than thick; femur 5.33 times longer than thick, 2.66 times coxa; tibia subequal to femur, 8.25 times longer than thick; tarsus subequal to tibia; metatarsus 0.27 of tibia; second segment 0.77 of metatarsus; third segment 0.85 of the second; fourth segment 0.83 of the third; fifth segment subequal to the third tarsal segment. *Hind leg* (Fig. 11 I) : Coxa 1.48 times longer than thick; femur 5.31 times longer than thick, 2.42 times coxa; tibia 1.29 times femur, 8.80 times longer than thick; tarsus about 1.09 times tibia; metatarsus 0.40 of tibia and 0.37 of tarsus; second segment 0.55 of metatarsus; third segment 0.70 of the second; fourth segment 0.71 of the third; fifth segment subequal to the third tarsal segment.

Abdomen smooth; 0.56 of body length; abdomen viewed dorsally (Fig. 11 K, L) length to width 100 : 49; petiole to abdomen 41 : 100; third tergite 3.00 times as long as second; ovipositor exerted beyond the tip of abdomen.

Holotype ♀, on slide, and *paratype* three ♀♀, on slides; 5.24. INDIA : MAHARASHTRA : Thana Hill, Krishnagiri-Bombay, Coll. Mani & party, 17-21.iv.1972.

This species resembles *C. insularis* Kieff.¹ from Seychelles in *m* being punctiform and in the general colour of body, but differs in pubescent eyes, longer second and third antennal segments, fourth, fifth and sixth segments short and transverse, club not equal to the five preceding segments combined but shorter, *pm* distinct but short, second tergite of abdomen striate the whole length. This species also resembles *C. cornutus* Ashm.² from America in the general colour and size of the body but differs in *m* being punctiform. It is distinguished from *C. setosus* Dodd³ from Queensland in its bidentate mandibles and completely hyaline wings.

11. *Ceratobaeus unifasciatus*, sp. nov. (Fig. 12 A-I)

Female : Length of body 1.44 mm; length of fore wing 1.02 mm; length of hind wing 0.98 mm; length of abdomen excluding petiole 0.66 mm. General colour of body brown; eyes black; ocelli dark brown; antenna yellowish-brown except brown apical 0.33 of club; legs yellowish-brown; fore wings almost hyaline with an obscure transverse brown infumation behind the stigmal vein as in figure; hind wings hyaline, veins brown; abdomen with 1-3 tergites yellowish-brown, rest of the tergites brownish-black; horn on the first tergite dark brown; ovipositor blackish-brown.

Head smooth; vertex hairy; eyes finely and densely pubescent; antennal sockets below the lower orbital border, near the clypeal border. Head viewed in front (Fig. 12 C) length to width 77 : 100; eye length to head length 50 : 100; lateral ocelli contiguous with the eye border; interocellar space 6.75 times the ocellar diameter; front ocellar space about 2.50 times the diameter of median ocellus. *Antenna* (Fig. 12 D) : Segments 7, 1.1.0.4.1. Scape 4.25 times longer than thick; pedicel 2.22 times longer than thick, 0.47 of scape; first funicular segment longest, 1.78 times longer than thick, 0.62 of pedicel; 2-4 funicular segments subequal, each about 0.50 of the first; second and third segments very slightly thicker than long; fourth funicular segment distinctly transverse; club greatly swollen, about 2.29 times longer than thick, subequal to the preceding 4 funicular segments, pedicel and about 0.20 of scape combined.

Thorax : Mesonotum and scutellum closely finely punctate; metanotum without teeth; parapsidal furrows present. *Fore wing* (Fig. 12 A) length to width 100 : 33; venation *sm* : *m* : *pm* : *st* 1533 : 100 : 66 : 466; *sm* with 8 setae directing forward, *m* and *pm* with 3 long setae. *Hind wing* (Fig. 12 B) to fore wing 96 : 100; length to width 100 : 18. *Fore leg* (Fig. 12 E, F) : Coxa 1.25 times longer than thick; femur 5.20 times longer than thick; tibia thickened apically, 3.86 times longer than thick, tibial spur bifurcate, tibial spur to metatarsus 70 : 100; tarsus 1.70 times tibia; metatarsus 0.58 of tibia and 0.34 of tarsus; second segment about 0.50 of metatarsus; third segment subequal to the

1. Kieffer, 1910, *Bull. Soc. Ent. France*, P. 294; *Das Tierr.*, 48 : 140 (1926).

2. Ashmead, 1893, *Bull. U.S. Natl. Mus.*, 44 : 176.

3. Dodd, 1940, *Trans. R. Soc. S. Austral.*, 33 : 65.

second; fourth 0.70 of the third; fifth segment subequal to the second tarsal segment. *Middle leg* (Fig. 12 G) : Coxa 1.33 times longer than thick; femur 5.37 times longer than thick and 2.41 times coxa; tibia equal to femur; tarsus slightly shorter than tibia; metatarsus 0.31 of tibia and about 0.33 of tarsus; second segment 0.77 of metatarsus; third segment 0.71 of the second; fourth segment 0.72 of the third; fifth segment equal to the preceding tarsal segment. *Hind leg* (Fig. 12 H) : Coxa 1.48 times longer than thick; femur 5.33 times longer than thick and about 2.25 times coxa; tibia thickened apically, 1.18 times femur, 9.50 times longer than thick; tarsus 1.15 times tibia; metatarsus 0.47 of tibia and about 0.40 of tarsus; second segment about 0.50 of metatarsus; third segment 0.77 of the second; fourth segment 0.71 of the third; fifth segment equal to the preceding tarsal segment.

Fig. 12. *Ceratobaeus unifasciatus*, sp. nov. ♀ : A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and metatarsus enlarged; G, middle leg; H, hind leg; I, abdomen.

Abdomen : Petiole and second abdominal tergite completely striate, third tergite with widely separated shallow minute punctae; viewed dorsolaterally (Fig. 12 I) length to width 100 : 45; abdominal petiole length to width about 100 : 45; third tergite largest, about 3.27 times the second; abdomen 0.45 of body; ovipositor well exerted beyond the tip of abdomen; petiole reaching to the tip of scutellum.

Fig. 13. *Odontacolus marattensis*, sp. nov. ♀: A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and metatarsus enlarged; G, middle leg; H, hind leg; I, abdomen.

Holotype ♀, on slide, 5.24. INDIA : MAHARASHTRA : Thana Hill, Krishna-giri-Bombay, Coll. Mani & party, 17-21.iv.1972.

This species is apparently related to but differs from *C. fasciatus* Dodd¹ in the body not being golden yellow and in the wing with only one transverse band behind stigmal vein. It also differs from *C. peninsularis* Mani & Mukerjee in the general body colour, wings not being hyaline but infuscated, absence of basal vein, head being smooth, eyes finely and densely pubescent, proportions of antennal segments, mesonotum and metanotum being closely umbilicately punctate and in the abdomen not being smooth but with first and second tergites completely striated and third tergite with widely separated minute shallow punctae.

12. *Odontacolus marattensis*, sp. nov. (Fig. 13 A-I)

Female : length of body 1.80 mm; length of fore wing 1.22 mm; length of hind wing 1.14 mm; length of abdomen excluding ovipositor 0.92 mm. General colour of body dark brown; eyes and ocelli black; mandibles yellowish-brown except reddish teeth; antenna yellowish-brown except brownish-black club with copery reflections; legs yellowish-brown; wings obscurely brown, veins brown; abdomen dark brown.

Head : finely longitudinally striate; vertex hairy; eyes finely and densely pubescent; antennal sockets very close to the clypeal border; mandibles bidentate. Head viewed in front (Fig. 13C) length to width 84 : 100; eye length to head length 47 : 100; lateral ocelli contiguous with the eye border; interocellar space 8.42 times ocellar diameter; front ocellar space 3.50 times the diameter of median ocellus. *Antenna* (Fig. 13D) : Segments 7, 1.1.0.4.1. Scape slender, 5.00 times longer than thick; pedicel 1.90 times longer than thick, 0.29 of scape; first funicular segment longest, 1.19 times longer than thick, about 0.75 of pedicel; second and third funicular segments subequal, each about 0.50 of the first, about 1.58 times thicker than long; fourth funicular segment slightly longer than the third, 1.33 times thicker than long; club greatly swollen, 2.16 times longer than thick, subequal to the preceding four funicular segments, pedicel and about 0.30 of scape combined.

Thorax : Minutely closely punctate; parapsidal furrows absent; pronotum hairy; mesonotum to scutellum 100 : 80. *Fore wing* (Fig. 13 A) length to width 100 : 31; venation *sm* : *m* : *pm* : *st* 833 : 100 : 400 : 233; *sm* with 5 bristles, *m* and *pm* with 8 bristles. *Hind wing* (Fig. 13B) to fore wing 93 : 100; length to width 100 : 20; marginal fringe to wing width 43 : 100. *Fore leg* (Fig. 13 E, F) : Coxa 1.25 times longer than thick; femur 4.85 times longer than thick, 2.83 times coxa; tibia thickened apically, 4.33 times longer than thick, 0.76 of femur, tibial spur bifurcate, tibial spur to metatarsus 79 : 100; tarsus 1.19 times tibia; metatarsus 0.53 of tibia and about 0.45 of tarsus; second segment about 0.28 of metatarsus; third and fourth segment subequal to the second; fifth segment

1. Dodd, 1914, *Trans. R. Soc. S. Austral.*, : 62.

1.50 times the preceding tarsal segment. *Middle leg* (Fig. 13G) : Coxa 1.55 times longer than thick; femur 5.14 times longer than thick, 2.57 times coxa; tibia equal to femur, about 8.18 times longer than thick; tarsus 0.72 of tibia; metatarsus about 0.26 of tarsus; second segment 0.71 of metatarsus; third segment 0.80 of the second; fourth segment 0.90 of the third; fifth segment about 1.50 times the third funicular segment. *Hind leg* (Fig. 13H) : Coxa 1.50 times longer than thick; femur 5.00 times longer than thick, 2.22 times coxa; tibia gradually thickens towards apex, about 8.57 times longer than thick, 1.20 times femur, tibial spur 0.16 of metatarsus; tarsus equal to tibia; metatarsus 0.45 of tibia or tarsus; second segment 0.36 of metatarsus; third segment 0.75 of the second; fourth segment 0.83 of the third; fifth segment equal to the third tarsal segment.

Abdomen : 0.51 of the body length; viewed dorsally (Fig. 13 I) length to width 100 : 53; third tergite largest, 1.36 times the second; petiole viewed dorsally length to width at base 83 : 100; tubercle transversely striate; petiole, second and third tergite longitudinally striate; ovipositor long, exerted.

Holotype ♀, on slide, 4.2. INDIA : MAHARASHTRA : Lingmala Waterfall : Mahabaleshwar, Coll. M.S. Mani & party, 12-13.ix.1971.

This species comes close to *O. longiceps* Kieff., in the first three abdominal tergites being striate. It differs also from *O. australicus* Dodd² and in larger size, different coloration, different proportions of antennal segments, *st* much shorter than *pm*.

13. *Tetrabaeus bhowaliensis*, sp. nov. (Fig. 14 A-I)

Female : Length of body 1.98 mm; length of fore wing 1.38 mm; length of hind wing 1.28 mm; length of abdomen 0.84 mm. General colour of body brown; head brown with a conspicuous, curved transverse dark brown band extending from lower orbital borders below the antennal sockets; eyes black; ocelli dark brown; mandibles yellowish-brown with brown teeth; antenna blackish-brown except the yellowish-brown scape; legs yellowish-brown; fore wings banded and infumated brown apically as in figure; hind wings hyaline, veins brown; abdomen brown with obscure dark brown to black bands on second tergite as in figure.

Head finely transversely reticulate; eyes almost bare; vertex with a few short hairs; mandibles bidentate; antennal sockets below the lower orbital border, close to the clypeus. Head viewed in front (Fig. 14C) length to width 78 : 100; eye length to head length 60 : 100; lateral ocelli contiguous with the eye border; interocellar space 7.75 times the ocellar diameter; front ocellar space 3.25 times the ocellar diameter. *Antenna* (Fig. 14 D) : Segments 7, 1.1.0.4.1. Scape slender and apically slightly reduced, 4.66 times longer than thick; pedicel 2.27 times

1. Kieffer, 1910, *Bull. Soc. Ent. France*, p. 294.

2. Dodd, 1914, *Trans. R. Soc. S. Austral.*, 38 : 72.

longer than thick, 0.35 of scape; first funicular segment longest. 1.57 times longer than thick, 0.60 of pedicel; 2-4 funicular segments transverse, subequal, each about 0.45 of the first; club greatly swollen, 2.06 times longer than thick, subequal to the preceding 4 funicular segments and pedicel combined; club with 3 obscure oblique sutures.

Thorax : Mesonotum finely longitudinally rugulosely striate; scutellum irregularly rugulose; propodeum transversely rugulose; parapsidal furrows absent; mesonotum to scutellum 100 : 75. *Fore wing* (Fig. 14A) subpetiolate; length to width 100 : 33; subcosta distally stout, not reaching wing margin. *Hind wing*

Fig. 14. *Tetrabaeus bhowaliensis*, sp. nov. ♀ : A, fore wing; B, hind wing; C, head in front view; D, antenna; E, fore leg; F, tip of fore tibia and metatarsus enlarged; G, middle leg; H, hind leg; I, abdomen.

(Fig. 14B) to fore wing 93 : 100, subpetiolate, length to width 100 : 20; marginal fringe to the wing width 54 : 100. *Fore leg* (Fig. 14E, F) : Coxa 1.20 times longer than thick; femur 4.58 times longer than thick; tibia 4.82 times longer than thick, 0.81 of femur, tibial spur trifurcate, 0.37 of tibia, tibial spur to metatarsus 66 : 100; tarsus 1.25 times tibia; metatarsus about 0.55 of tibia and 0.44 of tarsus; second segment 0.33 of metatarsus; third segment 0.80 of the second; fourth segment shortest, 0.75 of the third; fifth segment about 2.00 times the preceding tarsal segment. *Middle leg* (Fig. 14G) : Coxa 1.30 times longer than thick; femur 5.14 times longer than thick, 2.76 times coxa; tibia equal to femur, 7.20 times longer than thick, tibial spur 0.40 of metatarsus; tarsus equal to tibia or femur; metatarsus 0.33 of tarsus; second segment 0.66 of metatarsus; third segment 0.75 of the second; fourth segment shortest, 0.66 of the third; fifth segment equal to the third tarsal segment. *Hind leg* (Fig. 14 H) : Coxa 1.41 times longer than thick; femur 5.50 times longer than thick, 2.58 times coxa; tibia 9.65 times longer than thick, 1.27 times femur, tibial spur 0.25 of metatarsus; tarsus 0.89 of tibia; metatarsus 0.44 of tarsus; second segment 0.45 of metatarsus; third segment 0.70 of the second; fourth segment shortest, 0.57 of the third; fifth segment 1.50 times the preceding tarsal segment.

Abdomen : Smooth except striations on petiole and on tubercle; second tergite largest; viewed laterally length to width (Fig. 14 I) about 100 : 50; petiole length to thickness 100 : 50; abdomen 0.42 of the body length; ovipositor very slightly exerted; abdomen to second tergite 100 : 40.

Holotype ♀, on slide, 11.1. INDIA : U.P. : Bhowali (Kumaon Survey), Coll. M.S. Mani & party, 18-20.vi.1974.

This species differs from *Tetrabaeus americanus* (Brues)¹ in the larger size of body, the body not being black but brown, the head being finely transversely reticulate, lateral ocelli being contiguous with the eye border, different antennal coloration, thorax being longitudinally rugose, parapsidal furrows absent, fore wings banded and infumated brown apically and legs being yellowish-brown.

1. Brues, 1908. *Bull. Wisconsin Soc.*, 6 : 156.