

RP-112

FOUR NEW SPECIES OF *BRACHYMERIA* WESTWOOD  
(HYMENOPTERA : CHALCIDIDAE) FROM THE  
CALICUT REGION

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ABSTRACT. Four new species of *Brachymeria* Westwood, viz., *Brachymeria coxodentata*, *B. punctifrons*, *B. scrobatae* and *B. medicina* are described from Calicut, India. A key for their identification is given.

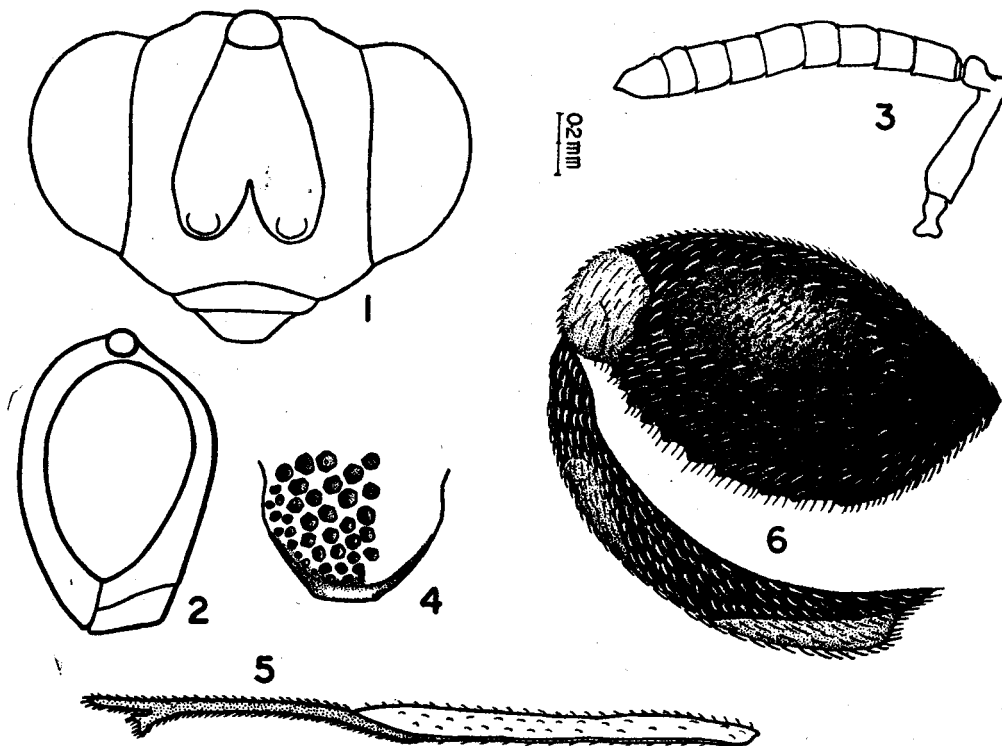
This paper contains the descriptions of four new species of *Brachymeria* Westwood, collected from different places in the Calicut Region. The type specimens are with the authors for the time being.

1. *Brachymeria coxodentata*, sp. nov. (Figs. 1-6)

*Male*: Length 3.3 to 3.4 mm. Black; tagulae pale yellowish-brown. Tip of the fore femur, tibia and tarsi dull yellow with a brownish patch on the inner side near the base of the fore tibia. Mid femur at its tip, tibia and tarsi dull yellow except for a blackish-brown patch near the base of the tibia on the inner side. Hind coxa black, femora black, except the tip where it is pale blackish-yellow; hind tibia mostly black except for two pale blackish-yellow patches subbasally and distally; tarsi dull yellow. Pubescence whitish and sparse.

*Head* (Fig. 1) a little wider than the maximum width of the thorax and a little over one and one-third as wide as its own length; surface of the head pitted with the interspaces minutely rugose; surface of the scrobe smooth and shiny, length about one and one-third its maximum width; parascrobal space a little less than one-third as wide as the width of scrobe; scrobe deep occupying about two-thirds of the width of interocular space, attaining the front ocellus; length of eye two and one-fifth times its width; median and the lateral ocelli of equal diameter; the distance between median and lateral ocelli is equal to half the interocellar distance; interocular distance is equal to thrice the interocellar distance. Width of clypeus about four and two-thirds as wide as its median length; width of labrum about two and a half times its median length; width of ocellar area a little over two-thirds the width of interocular space; interocellar space about one and a half times as wide as the

maximum diameter of the lateral ocellus; pre-orbital carina absent (Fig.2); postorbital carina present reaching the geno-temporal margin and as in figure; the lateral ridges of scrobe not represented in front beyond the antennal toruli; height of malar space about one-third the height of eye; the front genal and hind genal angles almost rectangular and as in figure. Antenna (Fig. 3) rather thin; scape not exceeding the front ocellus, distinctly longer than the combined length of segments four to six, contracted in the middle part; pedicel a little longer than wide; ring segment a little over five times as wide as long; fourth segment distinctly longer than wide; fifth and sixth segments of equal length; sixth a little wider than fifth; fifth and sixth segments slightly shorter than fourth segment; seventh segment a little shorter than sixth segment; eighth as long as segment six; ninth segment as long as segment seven; tenth segment a little longer than segment ninth; eighth segment is the widest of the funicular segments; club hardly a little over twice as long as its maximum width.



Figs. 1-6. *Brachymeria coxodentata*, sp. nov. ♂: 1, head; 2, head lateral view; 3, antenna; 4, scutellum dorsal view; 5, fore wing venation; 6, hind femur and tibia (tibia partly disarticulated).

*Thorax* provided with distinct, umbilicate, reticulate, round and close pits with seta arising in each pit; the interspaces rugose and narrow, except in the median portions of scutellum (Fig. 4) where interspaces are half the diameter of the punctures; mesoscutum a little less than twice as wide as long; parapsidal furrows distinct; scutellum about one and one-third as wide as long, moderately high in lateral view, gently declined posteriorly, apical margin explanate and entire with moderate pubescence and as in figure. Fore wings thrice as long as wide; pubescence sparse in the basal one-fourth and close in the rest of wing membrane; marginal vein (Fig. 5) about three-fifths the submarginal vein; postmarginal vein about one-third the marginal vein and about two and one-third times as long as stigmal vein. Hind coxa distinctly punctate with sparse pubescence and with an inner tooth; hind femora (Fig. 6) about one and three-fourths as long as wide, outer and inner sides rugose with close pubescence, outer ventral margin with ten teeth as in figure; hind tibia little longer than hind femur.

*Abdomen* about as long as the combined length of pronotum, mesoscutum and scutellum, highest after the middle, about one and a half times as long as its own height; first tergite smooth and shiny, second tergite shagreened with sparse pubescence on the basolateral regions; sixth tergite closely pitted and well pubescent with five to six rows of close pits, eleven to twelve pits in each row.

*Holotype* ♂, Coll. No. 172, on pin and its antenna, wings and femur on slides Nos. 11, 12 and 13 respectively; *Paratype* 1♂, Coll. No. 171, on pin; INDIA : Mavoor Road, Calicut, Kerala, Coll. Joseph, Lal and John, No. 172 on 6.viii.1967 and No. 171 on 30.vii.1967.

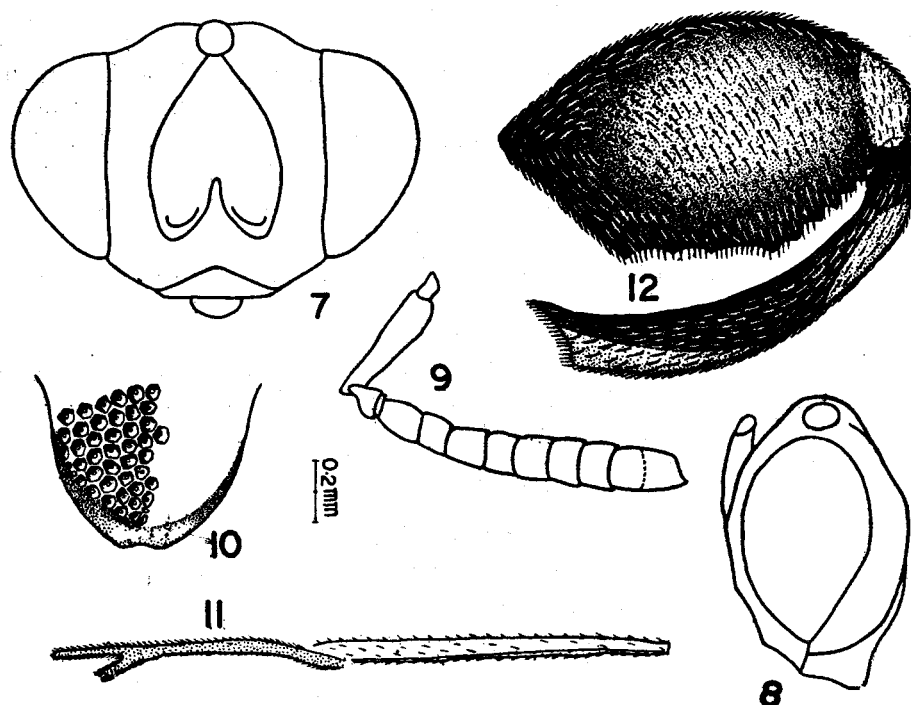
*Distribution* : India : Calicut, Kerala.

*Affinities* : This new species resembles *Brachymeria euplocae* Westwood in the following characters : (i) presence of coxal tooth; (ii) hind femora with ten black ventral teeth; (iii) nature of the sculpture on the thorax. It differs from *Brachymeria euplocae* Westwood in the following characters : (i) much smaller size; (ii) difference in coloration of all tibiae; (iii) difference in size, shape and arrangement of femoral teeth; (iv) tegulae pale yellowish-brown in the new species whereas in *Brachymeria euplocae* Westwood it is bright yellow; (v) different proportions of the veins of the fore wing; (vi) antenna rather thin in the new species.

## 2. *Brachymeria punctifrons*, sp. nov. (Figs. 7-12)

*Male* : Length 3.2 mm. Black with tegulae pale yellowish-brown. Tip of the fore femur, the tibia and the tarsi dull yellow with a brownish patch on the inner side near the base of the fore tibia. Mid femur at its tip, the tibia and tarsi dull yellow except for blackish-brown patch near the base of the tibia on the inner side which extends dorsally in a paler tone. Hind coxa black;

femora black except the tip where it is pale blackish-yellow; tibia mostly black except for a pale blackish-yellow patch in the basal half and another pale blackish-yellow area in the distal region; tarsi dull yellow. Pubescence whitish and sparse.



Figs. 7-12. *Brachymeria punctifrons*, sp. nov. ♂ : 7, head; 8, head in lateral view; 9, antenna; 10, scutellum in dorsal view; 11, fore wing venation; 12, hind femur and tibia (tibia partly disarticulated).

**Head** (Fig. 7) a little wider than the maximum width of the thorax and hardly a little more than one and one-third as wide as its own length; surface of the head pitted with interspaces minutely rugose. Surface of the scrobe smooth and shiny; length of scrobe about one and a half its maximum width; parascrobal space about one-third as wide as the width of the scrobe; scrobe deep, occupying a little over half of the width of interocular space, attaining the front ocellus. Length of eye a little over two times its width. Median and lateral ocelli of equal diameter; the distance between median and lateral ocelli is equal to half the interocellar distance; interocular space hardly a little less than thrice the interocellar distance. Clypeus four times as wide as its median length. Width of labrum two and half times length. Width of ocellar area about two-thirds the width of interocular space; interocellar distance one and

five-sevenths as wide as the maximum diameter of the lateral ocellus. Frons with pre-orbital carina absent, postorbital carina present reaching the geno-temporal margin (Fig. 8); inter-antennal projection well developed; the lateral ridges of scrobe cavity not represented in front beyond the antennal toruli. Height of malar space about one-third the height of the eye. The front genal angle and hind genal angle almost rectangular and as in figure. Antenna (Fig. 9) rather thin. Scape not exceeding the front ocellus, distinctly longer than the combined length of segments four to six, contracted in the middle part; pedicel a little longer than wide; ring segment a little over six times as wide as long; fourth segment a little longer than wide; fifth shorter than fourth; sixth segment a little longer and wider than fifth; seventh a little shorter than sixth; eighth as long as sixth. Ninth longer than seventh; tenth shorter than ninth; eighth, ninth and tenth equally wide and are the widest of the funicular segments. Club a little more than twice as long as segment ten, about one and two-thirds as its own maximum width.

*Thorax* provided with distinct, umbilicate, reticulate, rounded and close pits with the interspaces rugose and narrow (Fig. 10); seta arising from each pit; mesoscutum twice as wide as long; parapsidal furrows distinct; scutellum a little wider than long, moderately high in lateral view, gently sloping posteriorly with the apical margin explanate, weakly emarginate in the middle and as in figure, with moderate pubescence. Fore wings a little less than thrice as long as wide; pubescence sparse in the basal one-fourth and close in the rest of the wing membrane; marginal vein (Fig. 11) about half the submarginal vein; postmarginal vein a little over one-third the marginal vein, two and one-third as long as stigmal vein. Hind coxa distinctly punctate with sparse pubescence; hind femora (Fig. 12) a little less than twice as long as wide; outer and inner sides rugose with close pubescence; ventral margin with ten teeth; hind tibia shorter than femur.

*Abdomen* about as long as the combined length of pronotum, mesoscutum and scutellum, highest in the middle, a little less than one and a half times as long as its own height; first tergite smooth and shiny; second tergite shagreened with close pubescence extending on a large area basolaterally; sixth tergite closely pitted with sparse pubescence and four rows of close pits, each row having about ten to twelve pits.

*Holotype* ♂, Coll. No. 174 on pin, its antenna, fore wing and hind leg on slides, Nos. 14, 15a. and 15b respectively; INDIA : Mavoor Road, Calicut, Kerala, Coll. Joseph and Lal, 6.viii.1967.

*Distribution* : India : Calicut, Kerala.

*Affinities* : This species resembles *Brachymeria thracis* Craw. in the following characters : (i) hind leg coloration; (ii) nature of punctures on the thorax; (iii) presence of postorbital carina; (iv) punctate nature of the face below the insertion of the antennae. But it is easily distinguishable from *B. thracis* on account of the following characters : (i) absence of pre-orbital carina in the new species;

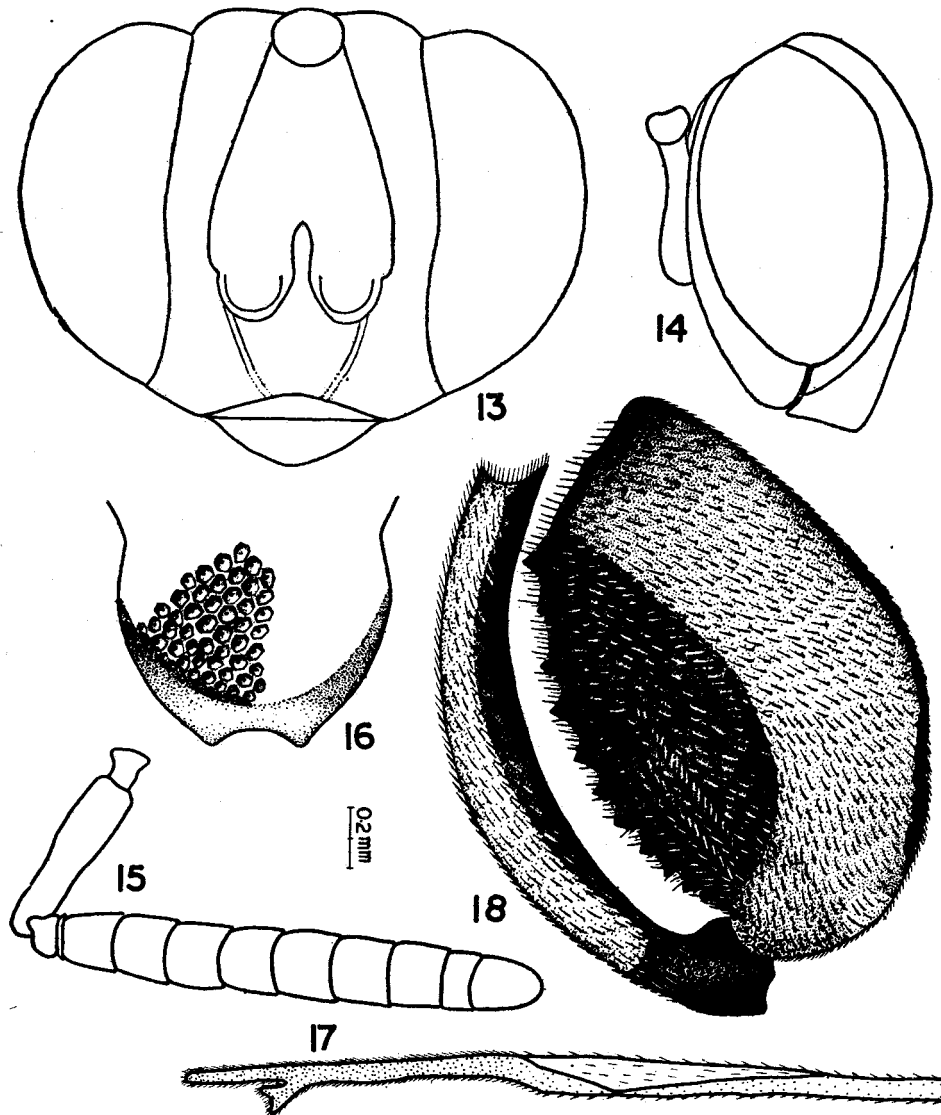
(ii) coloration of fore and mid legs; (iii) tegulae pale yellowish-brown in the new species but yellowish in *B. thracis*; (iv) apex of antenna greatly thickened in *B. thracis*; (v) outer and inner aspects of hind femur rugose and not punctate as in *B. thracis*.

3. *Brachymeria scrobatae*, sp. nov. (Figs. 13-18)

*Female* : Length 4.48 to 4.6 mm. Black; tegulae yellowish-brown with the basal one-third brownish-black. Distal half of fore femora, fore tibia and fore tarsi, distal margin of the mid femur, mid tibia and mid tarsi yellowish. Hind trochanter blackish-brown. The major portion of the hind femur reddish-brown; the distal portion with a small pale yellowish-red patch; basal margin with a blackish patch extending to about one-third the outer aspect of the femora. Basal one-fifth of the hind tibia blackish, this black coloration extending to the distal end along the ventral margin; rest of the tibia, particularly along the dorso-lateral margin dull yellowish-black. Last tarsal segment blackish in the basal half and yellowish in the distal half. Lateral portions of the abdominal tergites pale blackish-brown. Pubescence on head and body dirty white.

*Head* (Fig. 13) slightly broader than the maximum width of the thorax, one and one-fourth as wide as long. The surface of the head distinctly pitted, the interspaces of the pits carinate and finely rugose. Surface of the scrobe cavity smooth and shiny, a little less than one and a half times as long as its maximum width; parascrobal space about one-fourth as wide as the width of the scrobe cavity. Scrobe deep occupying two-thirds the interocular space, attaining the front ocellus. Length of the eye about two and a half times its width; median ocellus slightly larger than the lateral ocellus; the distance between lateral and median ocellus is equal to half of the interocellar distance; interocular space about two and one-fourth interocellar distance; width of clypeus about five times its length. Width of labrum one and two-thirds its length. Width of ocellar area four-fifths as wide as interocular space; interocellar distance two and one-fourth as wide as the maximum diameter of the lateral ocellus. Frons without pre-orbital carina; postorbital carina (Fig. 14) present, reaching the geno-temporal margin. Inter-antennal projection long and acuminate. Lateral ridges (Fig. 13) of scrobe continued forwards beyond the antennal toruli and almost reaches clypeus. Height of malar space about one-sixth the height of the eye. The front genal angle nearly rectangular; hind genal angle slightly obtuse. Antenna (Fig. 15) not thick; longer than the thorax. Scape not exceeding the front ocellus, slightly longer than the combined length of the segments four to six; slightly contracted after the middle. Pedicel a little wider than long. Ring segment very short. Fourth segment hardly a little wider than long. Segments five, six and seven of equal length; sixth, seventh and ninth segments widest; segment eight a little

longer than segment five. Segment nine a little longer than segment eight; segment ten as long and as wide as segment five. Segments six, seven and nine of equal width; a little longer than segment five. Segment eight slightly wider than segment seven. Segment ten and club of equal width; club hardly a little



Figs. 13-18. *Brachymeria scrobatae*, sp. nov. ♀ (All figures to same scale): 13, head; 14, head lateral view; 15, antenna; 16, scutellum dorsal view; 17, fore wing venation; 18, hind femur and tibia (tibia partly disarticulated).

less than twice as long as segment ten; about one and three-fifths as long as its maximum width.

*Thorax* : The whole of the pronotum; mesoscutum, scapulae and scutellum (Fig. 16) provided with almost reticulate and close pits; interspaces of pits carinate, and with microscopic rugosities. Mesoscutum a little over one and a half times as wide as long; parapsidal furrows distinct. Scutellum distinctly less than one and a half times as wide as long; moderately high in lateral view and gently declined posteriorly; apical part explanate and reflexed, distinctly emarginate, bilobed and densely covered with pubescence. Fore wings two and a half times as long as wide; pubescence sparse in the basal one-fourth and close in the rest of the wing membrane. Marginal vein (Fig. 17) about half as long as submarginal vein; postmarginal vein about half as long as marginal vein, three times as long as stigmal vein. Hind coxa punctate and pubescent on ventral side. Hind femora (Fig. 18) about one and five-sevenths as long as wide; outer side with microscopic punctae and pubescence, inner side with larger pubescence; ventral margin with eleven to twelve black teeth as in figure. Hind tibia hardly a little longer than the hind femur.

*Abdomen* a little shorter than the combined length of pronotum, mesoscutum and scutellum, highest after the middle; about one and one-fourth as long as its own height. First tergite smooth and shiny. Second tergite with scattered pits and small pubescence in the basal median half; in the same half towards the lateral regions the pits become more prominent, closer and provided with longer pubescence; the distal half of second tergite rather smooth with distinct microsculptures. Sixth tergite with large number of closely arranged pits and with close pubescence.

*Male* : Differs from the female in the following characters : (i) length : 4.5 to 4.7 mm; (ii) the blackish patch in the basal margin in the outer aspect of the hind femur is extensive and comprises the major coloration, while the reddish-brown colour on the dorsal portion is reduced; (iii) lateral portions of the abdominal tergites more blackish-brown of the female; (iv) width of head equal to that of thorax; (v) antenna thicker than that of the female; (vi) antennal segments 5, 7, 8 and 9 of equal length; segments 6 and 9 of equal length; segment 10 slightly less wide than segment 9; club slightly less wide than segment 10.

*Holotype* ♀, Coll. No. 164 on pin and its antenna, fore wing and hind leg on slides Nos. 1, 2 a and 2b respectively, INDIA : Kovur, Calicut, Kerala, Coll. Joseph, 29.x.1967. *Allotype* ♂, Coll. No. 165 on pin and its antenna, fore wing and hind femur on slides No. 3, 4 and 5 respectively, same date as for holotype except 22.x.1967. *Paratypes* 1 ♀, Coll. No. 163 on pin, Kovur, Calicut, 29.x.1967 and 1 ♂, No. 166, Devagiri, Calicut, 23.vii.1967.

*Affinities* : This species resembles *Brachymeria responsator* Walk., in the following characters: (i) coloration of the legs; (ii) scutellum bidentate; (iii) punctures on the thorax close and the interspaces narrow; (iv) pubescence



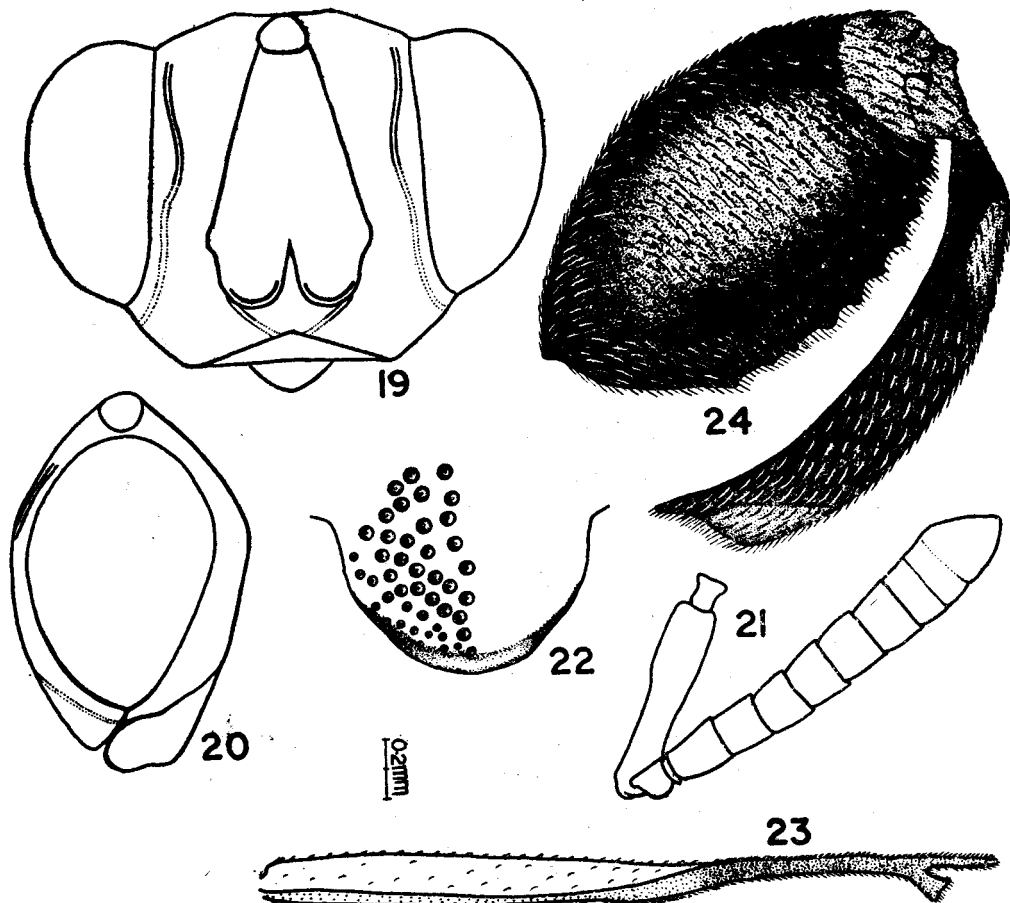
silvery-white. But it is easily distinguishable on account of the following characters in *B. responsator* : (i) tegulae yellowish; (ii) antenna shorter than thorax; (iii) in the place of the basal blackish patch extending from the basal margin on the outer aspect of hind femur of the new species, the hind femur of *Brachymeria responsator* shows a large rounded black spot in the distal one-third; (iv) hind femora with thirteen teeth. These teeth are different in size, shape and arrangement from those of the new species.

This species also resembles *Brachymeria femorata* Panz. in many characters but differs from it in the following characters: (i) lateral ridges of scrobe cavity not produced in front of the antennal toruli in *B. femorata*; (ii) tibia is wholly clear yellow in *B. femorata*; (iii) postorbital carina better developed in the new species; (iv) abdomen highest near middle in *B. femorata*; (v) different proportions of the fore wing veins in *B. femorata*.

#### 4. *Brachymeria medicina*, sp. nov. (Figs. 19-24)

*Female* : Length 4 mm. Black; tegula pale brownish-yellow with its basal margin brownish. Tip of the fore femur yellowish-brown; tibia mostly yellowish-brown on its internal aspect; this coloration on the external aspect is limited to narrow areas basally and at the tip, the rest being blackish. Mid femur with its tip brownish-yellow; tibia brownish-yellow at its base and at the tip, the intervening area being black mostly confined to the external aspect. Tip of the hind femur yellowish-brown on its outer aspect; rest of the femur blackish. Hind tibia mostly black with a small subbasal yellowish-brown patch and a similarly coloured distal patch. Tarsi brownish-yellow. Dorsal region of the thorax with sparse white pubescence, lateral regions with close white pubescence.

*Head* (Fig. 19) a little wider than thorax, one and one-third as wide as long; surface of the head with large pits which are reticulate and close; interspaces narrow and rugose. Surface of the scrobe cavity smooth and shiny; length of scrobe cavity about one and a half times its own width; parascrobal space a little less than half the width of the scrobe; scrobe deep occupying slightly less than three-fifths the width of the interocular space, attaining the front ocellus. Length of eye two and one-fourth its width; median ocellus slightly larger than lateral ocellus; the distance between the lateral and median ocelli is a little less than one-third the interocellar distance. Interocular space about three times the interocellar distance. Clypeus a little less than seven times as wide as long and almost triangular as in Fig. 19. Labrum two and two-thirds as wide as its median length. Width of ocellar area three-fourths the width of interocular space; interocellar distance one and three-fourths the maximum diameter of the lateral ocellus. Frons with more or less faint preorbital carina (Figs. 19 and 20) which are widely abbreviated and do not reach the fronto-genal suture; postorbital carina present and reaching the geno-temporal margin (Fig. 20). Interantennal projection well developed. Lateral ridges of scrobe



Figs. 19-24. *Brachymeria medicina*, sp. nov. ♀ (All figures to same scale): 19, head; 20, head lateral view; 21, antenna; 22, scutellum dorsal view; 23, fore wing venation; 24, hind femur and tibia (tibia partly disarticulated).

cavity produced in front and as in Fig. 19. Height of malar space about one-third the height of the eye. Front genal angle acute and rounded; hind genal angle obtuse and rounded off. Antenna (Fig. 21) rather thick; scape not exceeding the front ocellus; scape distinctly longer than the combined length of segments four to six; contracted a little after the middle part. Pedicel a little longer than wide; ring segment three and a half times as wide as long; fourth segment distinctly longer than wide; fifth shorter than fourth; segments six to nine of equal length; segments four to eleven gradually increasing in width; club a little less than two and a half times as long as the length of the tenth segment, about one and half times as long as its maximum width.

*Thorax* generally rugose with distinct umbilicate pits which are rounded and small; interspaces mostly broader than the diameter of the pits. Mesoscutum about one and two-thirds as wide as long; parapsidal furrows distinct. Scutellum (Fig. 22) a little shorter than wide; moderately high in lateral view, gently declined posteriorly; apical margin explanate, rounded off in the middle and with very little pubescence. Fore wings about two and three-fourths as long as wide; pubescence sparse in the basal one-fourth and close in the rest of the wing membrane; marginal vein (Fig. 23) a little over half the submarginal; postmarginal a little less than one-third the marginal, about two times as long as stigmal. Hind coxa punctate and with dense pubescence; hind femora (Fig. 24) one and two-thirds as long as wide; outer side with small punctures and pubescence, inner side with closer pubescence; the ventral margin with twelve teeth disposed as in figure; hind tibia longer than hind femur.

*Abdomen* a little longer than the combined length of pronotum, mesoscutum and scutellum, highest in the middle, one and two-fifths as long as its height; first tergite smooth and shiny, not extending beyond the middle; second tergite shagreened and shiny with a basal transverse row of small pubescence which extends to several rows in the lateral areas; sixth tergite generally rugose and closely pubescent provided with about six rows of large pits, the inside of these pits also being rugose.

*Holotype* ♀, Coll. No. 175 on pin, and its antenna, fore wing and hind leg on slides Nos. 18, 19a and 19b respectively; INDIA : Medical College Campus, Calicut, Kerala, Coll. Joseph & Lal, 23.ii.1968.

*Affinities* : This species resembles *Brachymeria minuta* Linnaeus in the following characters : (i) coloration of legs; and (ii) the number of teeth of hind femora. It differs from *Brachymeria minuta* Linnaeus in having : (i) the scutellum rounded off at the apex; (ii) pre-orbital carina more or less faint and widely abbreviated and not reaching the malar ridge; (iii) head wider than the thorax; (iv) scape distinctly longer than the combined length of segments four to six; (v) different proportions for the postmarginal : marginal and the postmarginal : stigmal.

#### KEY TO SPECIES

1. Lateral ridges of scrobe produced in front of the antennal toruli . . . . . 2  
    Lateral ridges of scrobe not produced in front of the antennal toruli . . . . . 3
2. Punctures on thorax close and interspaces narrow. Hind femora red with a blackish patch on the ventral margin with a yellowish coloration at the tip; apex of scutellum bidentate . . . . . *B. scrobatae*  
    Punctures on thorax not close; interspaces mostly broader than the diameter of the punctures. Hind femora black, with only a yellowish coloration at the tip. Apex of scutellum rounded off . . . . . *B. medicina*
3. Hind coxa with a tooth; apex of scutellum entire . . . . . *B. coxodentata*  
    Hind coxa without a tooth; apex of scutellum weakly emarginate . . . . . *B. punctifronta*

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