

SOME NEW SPECIES OF ORIENTAL *BRACHYMERIA*
WESTWOOD (HYMENOPTERA : CHALCIDIDAE) IN THE
COLLECTIONS OF THE BISHOP MUSEUM, HONOLULU

K. J. Joseph, T. C. Narendran & P. J. Joy

Department of Zoology, University of Calicut, Kerala, India

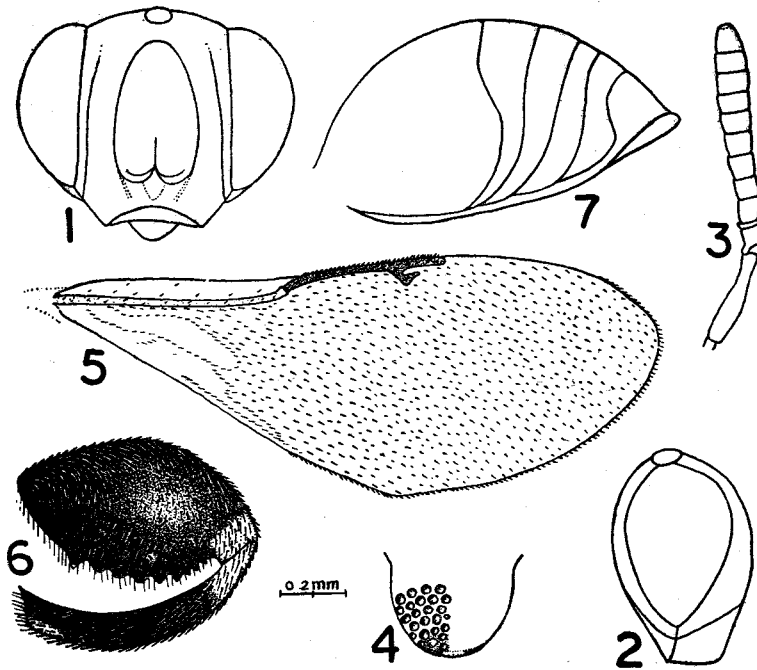
ABSTRACT. Two new species and a new subspecies of Oriental *Brachymeria* Westwood viz., *B. longiscaposa*, *B. auratopubescens* and *B. shansiensis vietnamensis* are described.

This paper contains descriptions of two new species and one new subspecies of Oriental *Brachymeria* Westwood from the collections of the Bishop Museum, Honolulu. The type specimens will be returned to the same Institution.

1. *Brachymeria longiscaposa*, sp.nov. (Fig. 1-7)

Female : Length 2.13 mm. Black; tegulae brownish-yellow. Coxae, trochanters and femora black except the distal ends of femora which are yellow; tibiae black with the base and apex yellow, tarsi pale yellow. Pubescence moderate and whitish.

Head : (Fig. 1) Width equal to that of thorax, about one and three-fourths its own length; vertex shallowly pitted with the interspaces and inside of pits rugose; scrobe deep, smooth and shiny, its maximum width a little less than two-thirds the interocular space; length of scrobe a little over one and a half its maximum width, not reaching the front ocellus; parascrobal space a little less than half the width of scrobe. Length of eye (Fig. 1) hardly a little over two and three-fourths its width; median ocellus equal to the diameter of lateral; the distance between median and lateral ocelli three-fifths the interocellar distance; space a little less than three times the interocellar distance; interocellar distance a little more than three times ocellocular distance. Width of clypeus about six times its median length; width of labrum a little over two times its median length; width of ocellar area a little over three-fourths the interocular space; interocellar distance one and two thirds the maximum diameter of lateral ocellus. Frons with distinct pre-orbital carinae (Fig.1); postorbital carinae present, (Fig. 2) reaching the genotemporal margin; inter-antennal projection long and narrow; lateral ridges of scrobe faintly produced in front of the antennal toruli; area below scrobe with a small smooth portion in the middle; height of malar space (Fig. 1) one-third the height of eye; front genal angle nearly rectangular, hind genal angle slightly obtuse. Antenna not stout (Fig.3); scape not exceeding the front ocellus, a little longer than segments four to seven combined, a little



Figs. 1-7. *Brachymeria longiscaposa*, sp. nov., ♀: 1, head; 2, head lateral view; 3, antenna; 4, scutellum dorsal view; 5, fore wing; 6, hind femur; 7, abdomen lateral view.

dilated near the base; pedicel length one and three-fourths its width; ring segment about five times as wide as long; fourth segment slightly longer than fifth; segment six and seven of equal length and longer than segment five; segment eight and nine subequal in length and shorter than seventh; width of funicular segments slightly increasing towards apex.

Thorax provided with rounded, reticulate, umbilicate and close pits (Fig. 4), the interspaces of pits being narrow with microsculpture; mesoscutum a little less than two times as wide as long. Scutellum with length subequal to its width, relatively low in lateral view and moderately declined posteriorly, apical part narrowly explanate, completely rounded. Fore wing (Fig. 5) about two and a half times as long as wide; marginal vein (Fig. 5) hardly a little over half the submarginal; postmarginal a little over one-third the marginal, and a little more than twice the stigmal. Hind coxa without tooth, punctures and pubescence on ventral side, dorsal side smooth. Hind femur (Fig. 6) with length a little less than two times its width, its outer side mat, moderately pubescent, outer ventral margin with a row of nine black teeth, inner side without a tooth, Hind tibia longer than hind femur.

Abdomen (Fig.7) rather pointed posteriorly, longer than pronotum, mesoscutum and scutellum combined, widest about the middle, about twice as long as wide. First tergite smooth and shiny; second tergite smooth and shiny with punctures and pubescence on sides and a single row of faint punctures on the basodorsal part which becomes more or less indistinct in the middle. Sixth tergite faintly pitted and rugose. Ovipositor sheath visible from above.

Male : Length 1.93 mm. Resembles the female in all respects except that the length of the abdomen is almost equal to or a little less than the length of its own thorax. Sixth tergite faintly pitted and rugose.

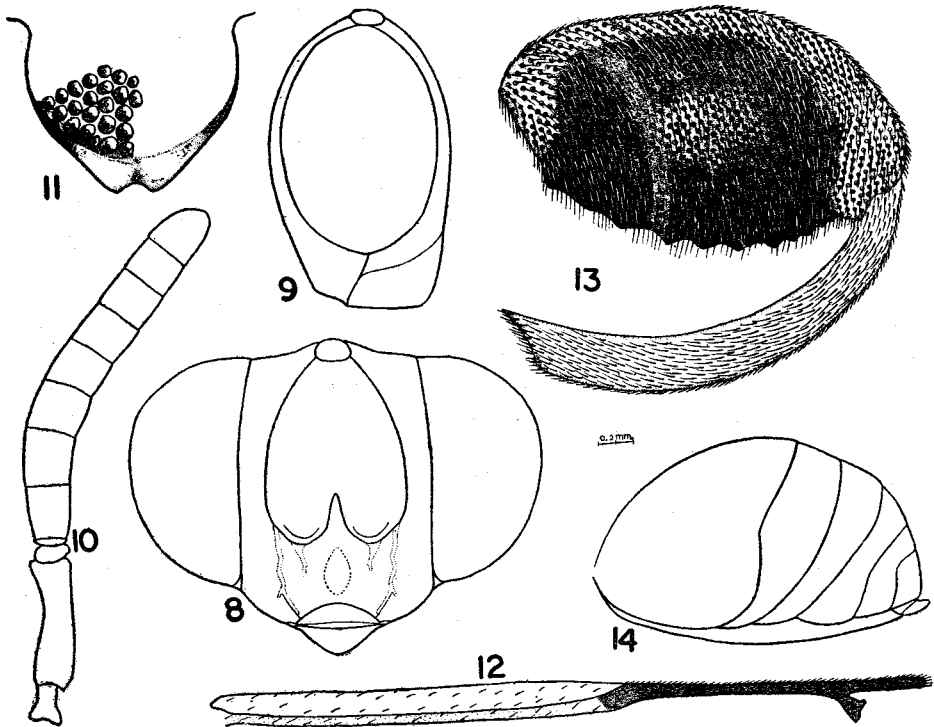
Holotype ♀, Coll. No.471 on pin, its antenna and fore wing on slide No.471a and hind leg on slide No. 471b, TAIWAN : Taipei, Coll. N.L.H. Krauss in May 1958. *Allotype* ♂, VIETNAM, Coll. No. C.U. 362, on pin, Coll. C.M. Yoshimoto, 8-19.vii.1960. *Paratype* 1♂, VIETNAM : Fyan (1200 m) Coll. No. C.U. 359 on pin, Coll. N.R. Spencer, between 11.vii-9.viii.1961.

Affinities : This species resembles *Brachymeria secundaria* (Ruschka) redescribed by Habu in 1960, in having : (i) almost similar coloration; (ii) rounded apex of scutellum; (iii) close punctures on the thorax; (iv) scrobe not reaching the front ocellus. But *B. secundaria* (Ruschka) can be easily distinguished from this new species in having : (i) no pre-orbital carina; (ii) scape slightly shorter than segments four to seven combined; (iii) difference in the nature of punctures on the second tergite (it is with dense microsculptures whereas in the new species the second tergite is almost entirely smooth); (iv) sixth tergite distinctly and densely punctate in *B. secundaria* (Ruschka) (whereas in this new species it is sparsely and faintly punctate).

B. hime Habu (1960) also resembles this new species in many respects but differs in having: (i) the scrobe reaching the front ocellus; (ii) second tergite with dense microsculptures on the dorsal side; (iii) scape not longer than segments four to six combined (whereas in this new species scape is longer than segments four to seven combined); (iv) area below scrobe uniformly punctate in *B. hime* (whereas in this new species there is a smooth median area below scrobe).

2. *Brachymeria auratopubescens*, sp.nov. (Figs. 8-14)

Female : Length 6.68-7 mm. Black; tegulae clear yellow with the basal margin dark reddish-brown. Fore and hind wings with brownish tinge; fore wing veins are blackish-brown, with the base of the submarginal vein brownish-yellow. In hind wing the basal one-third of the submarginal is yellowish-brown, rest of it and the marginal vein being brownish-black. Coxae and trochanters brownish-black; fore femora clear yellow with blackish-brown basal area; mid femora blackish-brown at basal two-thirds, with extreme base pale brown, apical one-third clear yellow. Hind femora with a median black area as in figure 13, the long yellow patches at the base and apex being united together



Figs. 8-14. *Brachymeria auratopubesces*, sp. nov. ♀: 8, head; 9, head lateral view; 10, antenna; 11, scutellum dorsal view; 12, fore wing venation; 13, hind femur; 14, abdomen lateral view.

dorsally. Tibiae wholly clear yellow, outer ventral carina of hind tibia blackish; tarsi yellow, claws and arolium dark. Pubescence on body and bristles on abdomen golden yellow and dens.

Head (Fig.8) width a little less than that of thorax, a little over one and one-fourth its own length; surface of head with moderate pits, interspaces of pits, and inside of pits rugose. Scrobe deep, fairly smooth and shiny, its maximum width a little more than four-fifths the interocular space, attaining the front ocellus; length of scrobe one and one-third its maximum width, parascrobal space a little less than one-fifth the width of scrobe. Length of eye (Fig. 8) about two and one-seventh its width; median ocellus a trifle larger than the lateral; the distance between median and lateral ocelli about half the interocellar distance; introcular space a little more than three times the introcellular distance. Width of clypeus one and two-thirds its median length; width of labrum a little less than one and a half its median length; width of ocellar area about three-fourths the interocular space; interocellar distance a little less than half the maximum

diameter of the lateral ocellus. Frons without pre-orbital carina; postorbital carina weak, reaching the genotemporal margin (Fig.9); area below scrobe with a median, small, smooth, raised portion (Fig.8); lateral ridges of scrobe produced (Fig.8) in front of the antennal toruli; inter-antennal projection proportionately short; height of malar space (Fig.8) a little less than one-third the height of eye; front genal angle slightly acute, hind genal angle slightly obtuse (Fig.9). Antenna (Fig.10) stout, scape not exceeding the front ocellus, a little longer than one and three-fourths the length of segments four to six combined, widest at basal one-third; ring segment a little more than three times as wide as long; width of funicular segments almost equal from segments five to ten; fourth segment slightly narrower but longer than fifth; sixth and seventh, subequal and longer than fifth; eighth, ninth and tenth subequal and longer than seventh; club length a little less than one and a half times the length of the tenth segment and a little more than its own width.

Thorax provided with reticulate, rounded, umbilicate and close pits (Fig. 11); interspaces of pits narrow and rugose. Width of mesoscutum a little less than twice its length, scutellum subequal in length and width, fairly high in profile, strongly and almost perpendicularly declined towards apex, with dense golden yellow bristles all around the margin; apical area explanate and emarginate (Fig. 11). Fore wing a little more than two and four-fifths as long as wide; marginal (Fig. 12) vein a little more than half the submarginal; postmarginal a little less than one-third the marginal and a little more than two and three-fourths the stigmal. Hind coxae distinctly and densely punctate and pubescent at ventral side, without protuberance on inner ventral side. Hind femora (Fig. 13) one and three-fourths as long as wide; its outer side distinctly and densely punctate and pubescent with the interspaces between the punctures smooth and shiny; inner side without a tooth and with less dense punctures and pubescence; outer ventral margin with a row of ten to eleven teeth.

Abdomen (Fig. 14) longer than pronotum, mesoscutum and scutellum combined, a little less than one and three-fourths its height, highest beyond the middle; first tergite smooth; second tergite with large, distinct, relatively dense, bristled punctures medially on the basal half, which are present all over laterally; rest of the apical half with fine microsculpture on the dorsal side; sixth tergite with eight or nine transverse rows of pits, each row with several pits, the interspaces of pits and inside of pits rugulose, the pits often invisible due to the dense golden yellow pubescence. Ovipositor sheath visible from dorsal side.

Holotype ♀, Coll. No. C.U. 451 on pin, its antenna and a fore wing on slide No. 451a and hind leg on slide No. 451b, PHILIPPINES: Balabac Is., Coll. H. Holtmann and W. Sanguita, 20.iv.1962. *Paratype* 1 ♀, Coll. No. C.U. 450 on pin, coll. data same as for the holotype.

Affinities : This species resembles *B. megaspila* described by Cameron in 1906 in the following characters : (i) almost similar coloration; (ii) absence of pre-orbital carina; (iii) closeness of punctures on the thorax; (iv) emarginate nature of the apex of scutellum. But this new species differs from *B. megaspila* in having : (i) golden yellow pubescence all over the body; (ii) interspaces between the punctures on thorax rugose (whereas in *B. megaspila* the interspaces between the punctures are not rugose); (iii) pits on the vertex shallow and not very well demarcated as in the case of *B. megaspila*; (iv) much bigger size than *B. megaspila*.

B. femorata (Panzer) redescribed by Habu in 1960, also shows resemblance to this new species but differs in having : (i) absence of golden yellow pubescence; (ii) antenna which is not stout; (iii) scape length equal to the length of segments four to six combined; (iv) hind femora with blackish coloration reaching the dorsal margin in most cases.

3. *Brachymeria shansiensis vietnamensis*, subsp. nov. (Figs. 15-21)

Female : Length 2.10 mm. Black; tegulae yellow with the basal one-third blackish-brown. Coxae, trochanters and femora black except the distal tips of femora which are yellow. Front and mid tibiae yellow with a small faint pale brownish patch on the median outer aspect; tarsi yellow. Hind tibiae yellow with the ventral region brownish, this brownish coloration extending slightly to the dorsal region in the middle (Fig. 21); tarsi yellow. Pubescence sparse and dirty white.

Head (Fig. 15) a little wider than the width of thorax, a little less than one and three-fourths as wide as long; surface of head with distinct pits and interspaces of pits and inside of pits rugose. Scrobe deep, smooth and shiny, its maximum width a little more than half the interocular space, attaining the front ocellus; length of scrobe one and two-thirds its maximum width; parascrobal space a little less than half the width of scrobe. Length of eye (Fig. 15) a little more than two and a half times its width; median ocellus larger than lateral; the distance between median and lateral ocelli a little more than one-third the interocellar distance; interocular space a little less than two times interocellar distance; interocellar distance about eight times ocellocular distance. Width of clypeus a little less than five times its median length; width of labrum a little more than two times its median length; width of ocellar area hardly a little more than three-fourths the maximum diameter of the lateral ocellus. Frons with faint pre-orbital carina which becomes indistinct near the malar ridge (Fig. 15); postorbital carina absent; area below scrobe with small pits and the interspaces of pits smooth and shiny in the median region; lateral ridges of scrobe not produced in front of the antennal toruli; inter-antennal projection short; height of malar space about one-third (Fig. 15) the height of eye; front genal angle slightly acute, hind genal angle slightly obtuse. Antenna (Fig. 17) not stout; scape not exceeding the front ocellus, longer than segments four to

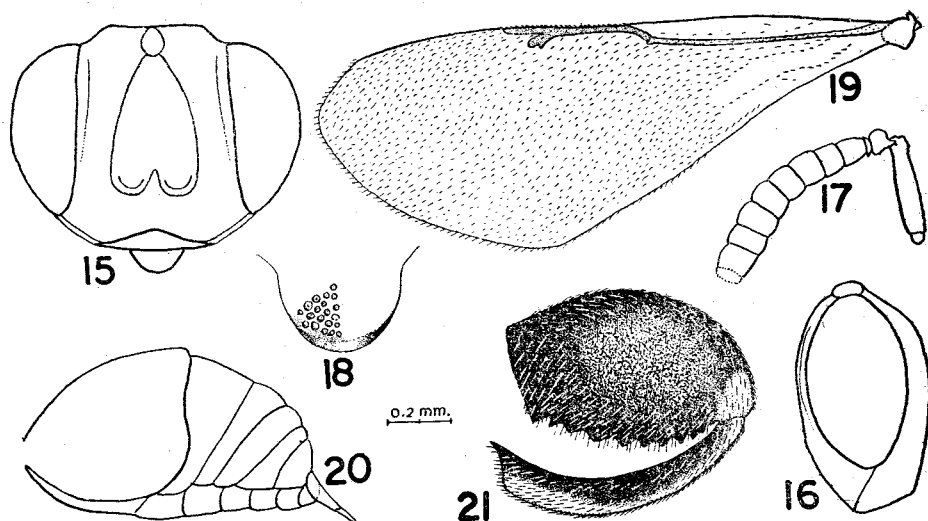


Fig. 15-21. *Brachymeria shansiensis vietnamensis*, subsp. nov., ♀ : 15, head; 16, head lateral view; 17, antenna; 18, scutellum dorsal view; 19, fore wing; 20, abdomen lateral view; 21, hind femur.

six combined and subequal to segments four, five, six and seven combined, contracted after the middle; pedicel as long as wide: ring segment about four times as wide as long; fourth segment longer than fifth and subequal to sixth segment; segments six to nine subequal in length; segment ten shorter than nine; segment four to ten gradually increasing in thickness.

Thorax provided with small, rounded, reticulate, umbilicate and close pits (Fig. 18); interspaces of pits narrow and rugose. Mesoscutum a little over one and two-thirds as wide as long; scutellum length subequal to its width, moderately high in lateral view, gently declined posteriorly, apical margin explanate and rounded off. Fore wing (Fig. 19) length a little more than two and a half times its width; pubescence sparse in the basal one-fourth and close in the rest of the wing membrane. Marginal vein about half the submarginal; post-marginal a little less than half the marginal, about twice the stigmal. Hind coxa on ventral side finely punctured, without tooth; hind femur (Fig. 21) one and four-fifths as long as wide, outer side reticulate and mat with faint almost invisible punctures; ventral margin with a row of eleven teeth (Fig. 21); inner side of hind femur without a tooth.

Abdomen (Fig. 20) length a little less than that of the pronotum, mesoscutum and scutellum combined and equal to three-fourths its own height, highest about the middle; first and second tergites finely and densely pitted with pubescence on the sides; sixth tergite with one or two rows of shallow pits, the interspaces between the pits being rugulose,

Holotype ♀, Coll. No. C.U. 710 on pin, its antenna and fore wing on slide No. 710a and hind femur on slide No. 710b, VIETNAM : N.W. of Phan Rang, Coll. C.M. Yoshimoto, 8-16.xi.1960.

Remarks : *B. shansiensis* described by Habu in 1961 can be distinguished from this new subspecies in having : (i) area below scrobe with smooth swollen portion in the middle (in the new subspecies no such character is found); (ii) hind tibia yellow with a median reddish-black band (in the new subspecies the coloration is different); (iii) the first tergite of the abdomen has a round fovea on each side (which is absent in the new subspecies).

ACKNOWLEDGMENTS. This research has been financed in part by a grant made by the United States Department of Agriculture under P.L. 480. We are greatly indebted to Dr. B.D. Burks of the U.S. National Museum, Washington, the sponsoring scientist of the Scheme, for his very keen interest and suggestions. We record here our grateful thanks to the Bishop Museum, Honolulu, for the loan of a collection of *Brachymeria* for our study.

REFERENCES

- CAMERON, P. 1906. On the Tenthredinidae and parasitic Hymenoptera collected in Baluchistan by Major C.G. Nurse. *J. Bombay Nat. Hist. Soc.* **17** : 94.
- HABU, A. 1960. A Revision of Chalcididae (Hymenoptera) of Japan with description of sixteen new species. *Bull. Nat. Inst. Agric. Sci. (C)* **11** : 132.206.
- HABU, A. 1961. Chalcididae And Leucospidae from Shansi, North China (Hymenoptera). *Mushi* **35** (11) : 80-82.