

Descriptions of new species of oriental Mymaridae and Aphelinidae (Hymenoptera: Chalcidoidea)

B R SUBBA RAO

Commonwealth Institute of Entomology, c/o British Museum (Natural History), Cromwell Road, London SW7 5BD, UK

Abstract. A new genus and species, *Kubja longipes* from Sabah, *Hispaniella tertia* sp. nov. from Pakistan; *Parallelaptera teleonemiae* sp. nov.; *Eretmocerus breviclavus* sp. nov.; *Encarsia longifasciata* sp. nov.; *Azotus bharathius* sp. nov.; *Azotus fumipennis* sp. nov., all from India and of economic importance, are described.

Keywords. Mymaridae; Aphelinidae; *Kubja longipes*.

1. Introduction

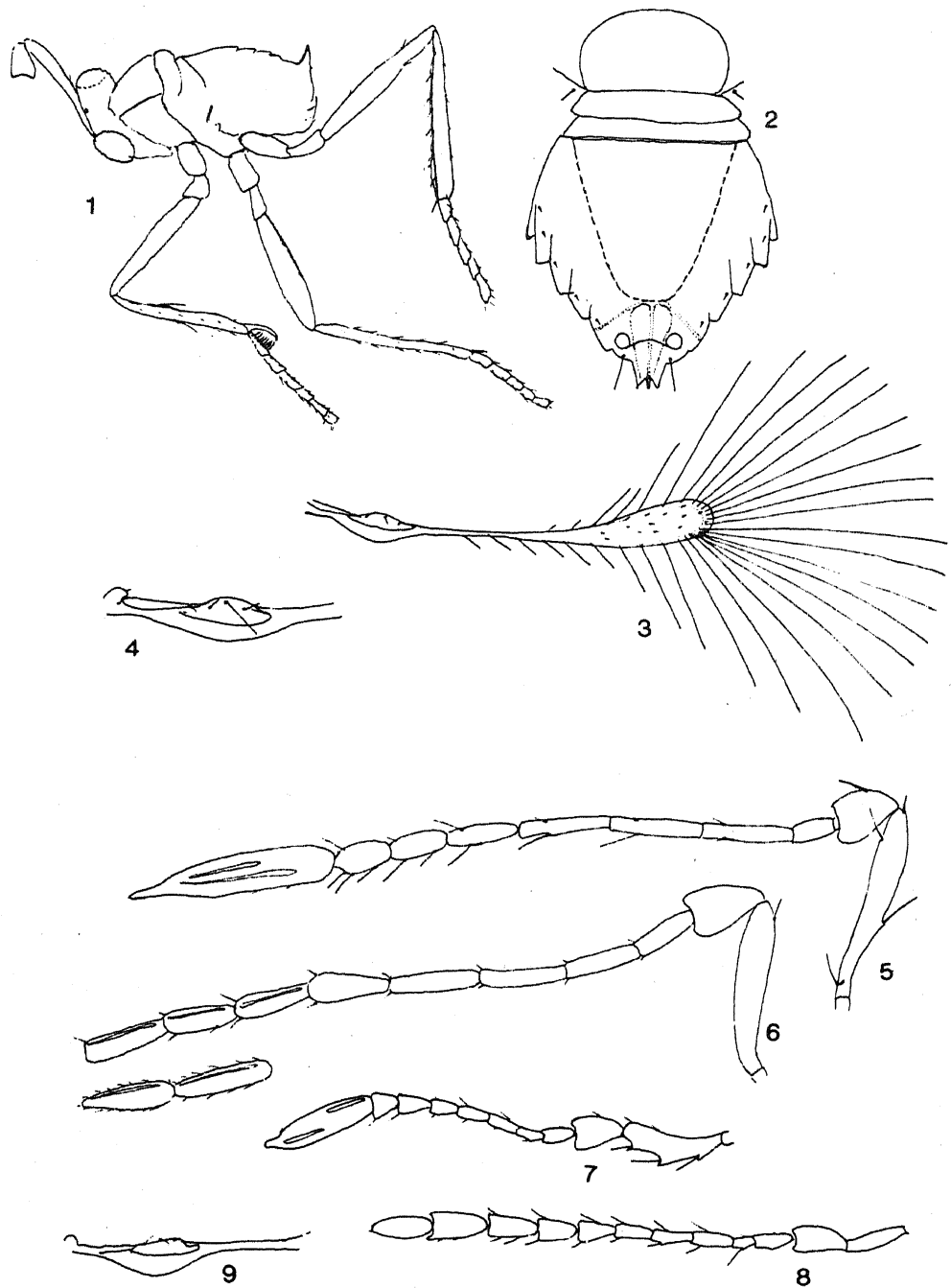
Species belonging to families Mymaridae and Aphelinidae (Hymenoptera: Chalcidoidea) are some of the smallest known beneficial parasitoids that develop in the eggs or other immature stages of insect pests harmful to agriculture and horticulture. Many species of these microscopic wasps have been successfully utilised in the biological control of insect pests. New species described from India appear to be widespread within the subcontinent and prove to be of great importance in the natural control of insect pests that they attack. Integrated pest management is the key word in the control of insect pests and it is hoped the parasitoids described in the following pages are further investigated as to their bionomics and use of insecticides and other cultural practices to be developed to preserve these beneficial ones. The holotype and paratypes of the new species described are deposited in the collections of the British Museum (Natural History).

2. Description of new taxa

2.1 Mymaridae. *Kubja* gen. nov.

2.1a *Kubja** *longipes* sp. nov: Antenna in female 10-segmented with the club unjointed; in male 12-segmented; scape in female very long, teeth not prominent, yet not smooth, one apparent protruberance giving origin to a long seta present, club when mounted laterally the apex appears like a beak. Mandible three-dentate. Antenna originating very high on the face, the apex of torulus almost touching transversofrontal trabecula. Thorax short, almost quadrate, mesophragma penetrating deep into the abdomen reaching the fifth abdominal segment. Ovipositor very short, originating at the 5th abdominal segment. Forewings spatulate, marginal fringe very long; tarsi 5-jointed. Pleurites of the abdomen distinctly separated from their tergites.

* Etymology: In Sanskrit *Kubja* means dwarf or stumpy.



Figures 1-9. 1-6. *Kubja longipes* gen. sp. nov. 1. female as seen laterally; 2. part of thorax and gaster, dorsal views; 3. forewing; 4. venation highly magnified; 5. antenna female; 6. antenna male. 7-9. *Dicopus minutissimus* Enoch; 7. antenna female; 8. antenna male; 9. venation highly magnified.

Kubja gen. nov. belongs to the subfamily Alaptinae, tribe Alaptini and runs to couplet 5 of key to genera of tribe Alaptini (Annecke and Doutt 1961) and differs from *Dicopus* Enoch in the shape and length of antennal scape, squat thorax, long legs and extremely short ovipositor. The new genus also runs to couplet 7 of key to higher categories and oriental genera of Mymaridae (Subba Rao and Hayat 1983) and differs from *Litus* Haliday in having 7-segmented funicle and scutellum smooth.

Female: Length 0.15 mm. General colour dark brown, all coxae concolorous with thorax, antennae, legs except coxae pale yellow; wings delicately infumate.

Head viewed in front broader than high (40:34), vertex with the occipital border sharp and making an angle, the apex of the angle reaching beyond the level of the lateral ocelli. Vertex delimited by transversofrontal trabecula anteriorly, the divided orbital trabeculae laterally and the posterior ocular trabecula which is clearly divided into two and making an inverted *V* conforming to the shape of the posterior occipital border. Ocelli in a wide angled triangle, the base 2.6 times as long as a side, lateral ocellus separated from the ocular border by its own diameter; vertex and face with few long setae. Antennae originating high on the face close to the transversofrontal trabecula (median carina), toruli wide apart, almost touching the suborbital carinae; scape very long, longer than the height of the head (40:34), slightly dilated in the apical two-thirds and with one minute dorsal tooth giving origin to a long seta; pedicel much broader than scape (10:6), funicle segment 1 the shortest and segments 2 and 3 longest and equal, clava solid with its apex shaped somewhat like a beak; measurements of the antennal components as follows: scape 40; pedicel 12: F1 8; F2 18; F3 18: F4 17; F5 13; F6 12; F7 11; clava 42; funicle with sparse moderately long setae, F2 to F5 each with its apical two thirds area somewhat constricted and giving origin to two setae; longitudinal sensoria absent on all funicle segments, clava with two sensoriae.

Thorax in dorsal view slightly more than twice broader than long (60:28); prothorax not clearly visible dorsally, undivided; mesoscutum convex, transversely delicately striate, nearly twice as broad as long; scutellum narrow, ribbon like, slightly over 4 times as broad as long, without setae; propodeum also narrow, narrower than scutellum, without any setae. Forewings as in the figure, spatulate (oar shaped) with the base slightly broader; wing span as compared to thorax 135:24; disc with about 15 to 17 minute setae in two rows; marginal fringe very long, about 25, the longest about 6 times as long as wing disc breadth (84:14); venation to 30 (as measured against the wing span) into the wing base, both proximal and discal macrochaeta very minute, hardly reaching beyond venation, hypochaeta comparatively long, reaching just beyond the lower border of the marginal vein; hind wing in the apical two thirds almost parallel sided, marginal fringe long, numbering about 18–20, the longest nearly 9 times as long as wing disc breadth. Legs very long and without any apparent teeth on the fore legs.

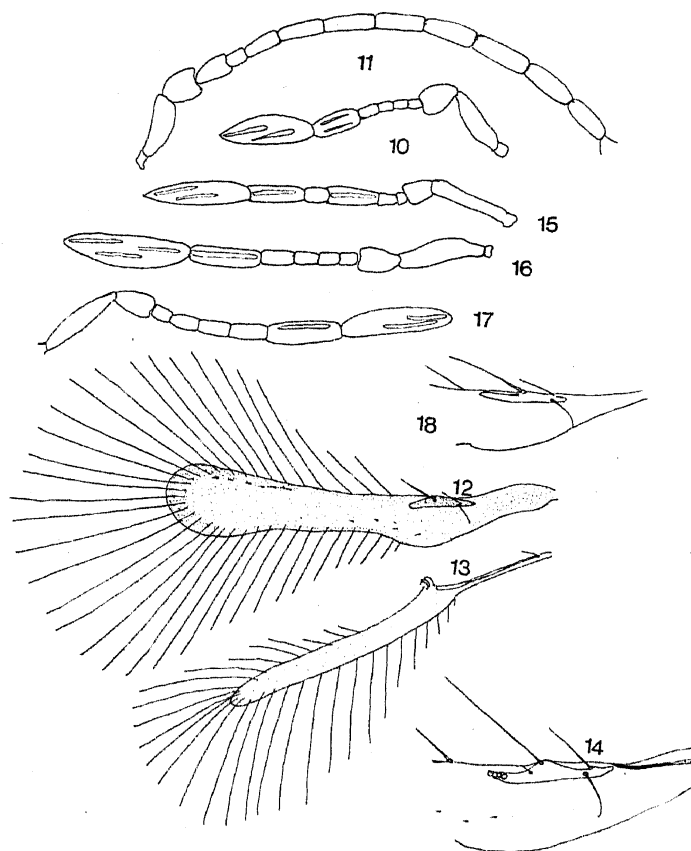
Abdomen viewed dorsally broader than thorax, slightly longer than the combined length of head and thorax; tergites 2 to 6 each with a pair of lateral setae, otherwise tergites smooth and unsculptured; ovipositor very small, the sheaths slightly exerted.

Male: Essentially similar to female. Antennal scape without any protruberance; funicle segments beyond 4 with longitudinal sensoria.

Material studied: Holotype female Malaysia, Tawau, Sabah, ex unidentified host on Cocoa flowers, 23.1.1983 (G.T. Linn coll.); paratypes 1 female 1 male same data. The holotype and two paratypes together mounted on a slide in 'Gumchloral'. The holotype is the one specimen dorsoventrally mounted with the wings fully stretched horizontally; the paratypes are mounted laterally.

2.1b Parallelaptera teleonemiae sp. nov. Female. General colour brown, with the following parts lighter; antennae and tarsi. Length 0.4 to 0.45 mm.

Head in frontal view across the eye wider than high (50:40), slightly narrower than the thorax when measured across the tegulae (50:54); eyes large, widely apart, lateral,



Figures 10–18. 10–14. *Parallelaptera teleonemiae* sp. nov. 10. antenna female; 11. antenna male; 12. forewing female; 13. hindwing male; 14. venation highly magnified; 15. *Parallelaptera funiculi* Annecke & Doult antenna female; 16. *Parallelaptera panis* Enock antenna female; 17–18. *Parallelaptera rex* (Girault), 17. antenna female; 18. venation highly magnified (all figures drawn from either holo- or paratype).

without hairs; transversofrontal trabecula entire; orbital trabecula not entire, broken into 10–11 parts, originating near the antennal toruli and extending dorsally reaching the lateral ocellus. Ocelli in an equilateral triangle, the sides being 45° , lateral ocellus separated from the orbit by about its own diameter. Vertex and face comparatively smooth, without any apparent sculpturing; mandibles absent. Antenna inserted above the lower level of the eyes, wide apart, nearer the eyes than to each other; scape, pedicel, five-jointed funicle segments and the club measure in the following ratio: 22:10:4:5:4:7:15:30; scape narrow, slightly wider at the basal one third, pedicel at apex twice as wide as scape, funicle segments 1 to 3 narrow and equally broad and long, segment 4 slightly broader and longer than the preceding ones, segment 5 about twice as broad as the fourth and 2.4 times long, clava twice as long as the fifth segment; only the last funicle segment and the clava are provided with longitudinal sensoria.

Thorax slightly longer than gaster (65:62), pronotum entire, furnished with 3 and 3 dorsal setae, the middle seta on either side the smallest, mesoscutum slightly broader than long (25:22), notaular grooves straight and deep with a moderately long seta on the dorso-lateral aspect of the mesoscutum. Axillar seta 1 and longer than mesoscutellar seta. Scutellum longer than wide (29:24); metanotum visible, with a single minute seta on either side. Propodeal setae extremely small, 2 and seen only when carefully studied

under very high magnification ($\times 250$); mesophragma barely projecting into the abdominal cavity and the apex rounded.

Forewings typical of the genus, almost parallel sided; length to breadth (120:19); venation reaching to about one third the length; with one row of 8 discal setae running parallel to the upper border and a second row of 4 or 5 setae arising beneath the venation near the lower border; marginal vein well developed; hypochaeta extremely close to proximal macrochaeta, but distad and beneath it; distal macrochaeta almost twice the length of proximal one; marginal fringe very long, 6 times as long as the maximum breadth of the wing. Hind wing hyaline, marginal fringe about 7 times as long as the breadth of the hind wing.

Fore legs with coxae and femora, middle legs with coxae large, hind legs with coxae small and rounded.

Abdomen slightly shorter than thorax (65:70), ovipositor originating from near the base of abdomen and the ovipositor sheath slightly exerted.

Male: Essentially similar to female except for the sexual characters associated with the antenna.

Material studied: Holotype female India, Karnataka, Bangalore ex *Teleonemia scrupulosa* Stål on *Lantana camera*. 30.xii.1980 (M. Yacoob Coll.). Paratypes 1 female-2 male Bangalore, ex *Dictyla* sp., 9.i.1980 (M. Yacoob Coll.); 4 female Madras, ex *Phenotropis cleopatrae* on *Tephrosia purpurea*, 1.v.1980 (M. Yacoob coll.); 6 male 1 female Madras, ex *Urentius euonymus* Distant on *Sida malvestrum*, 7.v.1980 (M. Yacoob coll.).

Parallelaptera teleonemiae sp. nov. can be separated from the other three known species as shown in the key to species of *Parallelaptera*.

Key to species of Parallelaptera Enock, females

- | | | |
|---|--|---|
| 1 | Funicle segments progressively longer than the preceding one | 2 |
| | Funicle segments not progressively longer than the preceding one but of different lengths | 3 |
| 2 | Funicle segments 1-3 subequal, yet progressively longer than the preceding one. Thorax slightly longer than gaster; forewing disc comparatively narrow, the longest marginal fringe four times the wing disc width (102:24); distal macrochaeta just 1.45 times longer than proximal macrochaeta <i>panis</i> Enock (1909) Europe | |
| | First funicle segment the shortest, subsequent segments clearly progressively longer than the preceding one. Thorax as long as gaster; forewing disc comparatively wide, the longest marginal fringe only 2.5 times as long as the wing disc width (100:40); distal macrochaeta two times as long as the proximal macrochaeta <i>rex</i> (Girault) (1911) U.S.A. | |
| 3 | Funicle with the first segment shortest, second and fourth segments short and subequal, third and fifth segments very long and subequal. Forewing hyaline; longest marginal fringe about 2.5 times the wing disc width; distal macrochaeta twice as long as the proximal macrochaeta <i>funiculi</i> Annecke and Doutt (1961) South Africa | |
| | Funicle with first four segments very short, subequal, yet appear to be equal in length, fifth segment large and much wider than preceding | |

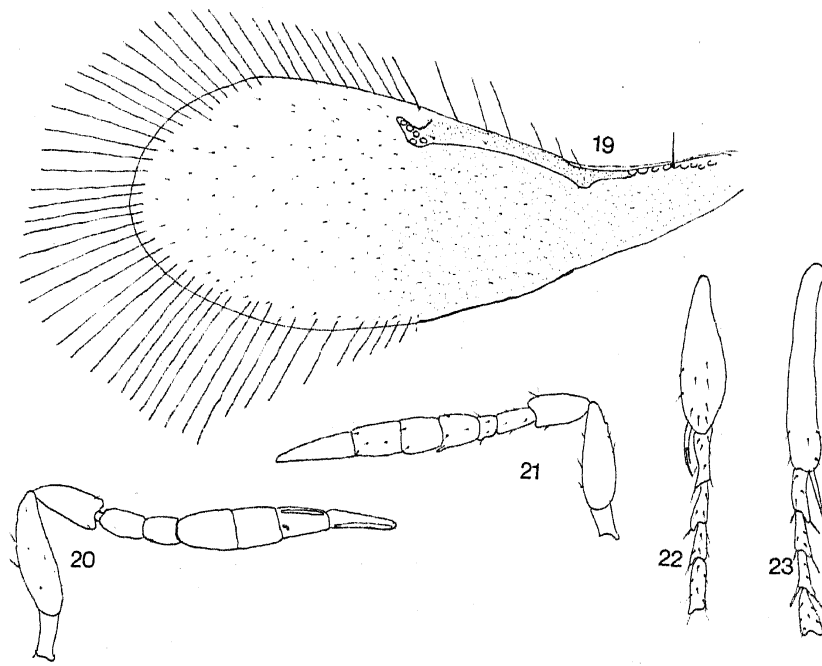
segments. Forewing slightly infumate; longest marginal fringe slightly more than 3.3 times the wing disc width; distal macrochaeta one and two thirds as long as the proximal macrochaeta *teleonemiae* sp. nov. India

2.2 Aphelinidae

2.2a *Hispaniella tertia* sp. nov. *Female*: General colour dark brown, with the following parts light brown to yellow; antennae and all tarsi; all femora and tibiae partially dark and light coloured.

Head viewed frontally wider than long (4:3.5), mandibles three-dentate, two sharp teeth and a somewhat blunt third tooth; labial palpi unsegmented and maxillary palpi two segmented. Ocelli in an obtuse angled triangle, the lateral ocelli about twice their own diameter away from the ocular border. Antennae inserted very low on the head, almost near the mouth border, 8 segmented; scape cylindrical, radicle very long, slightly less than half the length of the scape (25:12), pedicel long, a little longer than half the scape, two funicle segments subequal, the first longer than the second, clava 4 jointed, about 2.7 times as long as the combined lengths of the funicle segments (80:30), basal joint much broader than funicle and subsequent joints progressively narrower and the apical joint ending almost spine-like. Longitudinal sensoria almost obliterated or if present, hardly visible even under very high magnification and seen on the distal two joints.

Thorax hardly longer than broad when measured across the tegulae (85:80); scutum longer than scutellum (50:30), notaular grooves well impressed; scutum and scutellum with 2 pairs of short setae; scutum sculptured with various pentagonal or hexagonal fine reticulations against the almost smooth scutellum, notum and propodeum. Forewings about 2.5 times as long as broad and faintly infuscated in the basal half. Discal setae very short and sparsely distributed and appear more like spicules than setae. Marginal



Figures 19-23. *Hispaniella tertia* sp. nov. 19. forewing female; 20. antenna female; 21. antenna male; 22. foretibia and tarsi; 23. middle tibia and tarsi.

vein very slightly shorter than submarginal, stigmal vein short and curved; marginal vein with 6 long cilia, submarginal with 1; marginal fringe long, the longest on the distal lower border slightly longer than half the wing width; marginal fringe of the hind wing longer than the breadth of the wing, the disc with two rows of very short spicule-like cilia in the distal half.

Legs normal to aphelinid species except that the tibiae are slightly dilated; middle tibial spur as long as the basitarsus. Gaster slightly longer than thorax, ovipositor sheath slightly exerted.

Male Essentially similar to female except for the antenna.

Material studied: Holotype female, Pakistan, Quetta, ex *Lepidosaphes baluchistanus* 2.i.1970 (CIBC, Pakistan), On *Prunus amygdalus*. Paratypes 1 male and 1 female same data. The holotype and the male paratype are mounted on the same slide.

Hispaniella tertia sp. nov. differs from the other two known species as shown in the key to species.

I have named the oriental species as the third known valid species of the world; the other two are *Hispaniella lauri* (Mercet) and *Hispaniella howardi* Dozier. Hill (1970) described a species under *Hispaniella* from Uganda, Africa. I have taken this opportunity to study the types of *H. africana* Hill and the following are my observations. It is clear from my studies that Hill (1970) made a very serious observational error, the whole mounted specimen and the dissected and mounted in 'Gum Damar' on slides show the legs of *africana* with five-segmented tarsi. This character alone precludes the species from placement under *Hispaniella*. Further, the species belongs to *Encarsia* and is placed in synonymy with *Encarsia lounsburyi* (Berlese and Paoli).

Encarsia lounsburyi (Berlese and Paoli)

Prospaltella lounsburyi Berlese and Paoli 1916 *Redia* 11 305

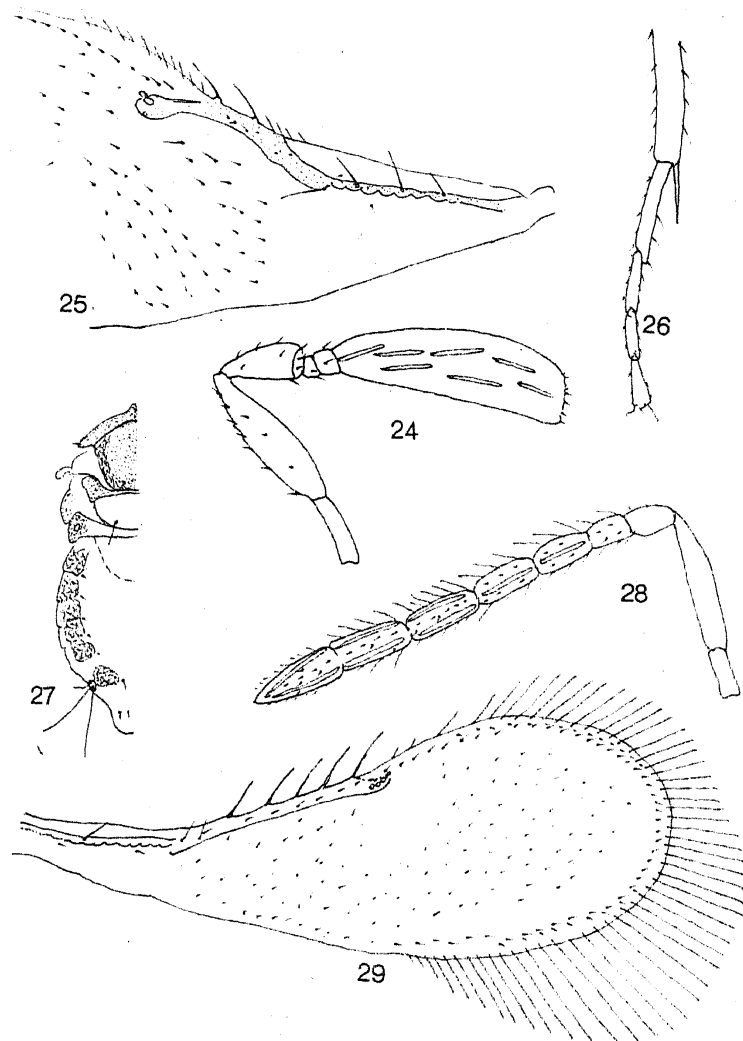
Aspidiotiphagus lounsburyi Berlese and Paoli 1916 *Redia* 12 12

Hispaniella africana Hill 1970 *Bull. entomol. Res.* 60 97 Syn. nov.

Key to species of Hispaniella Mercet, females

- 1 Longest marginal fringe on the lower margin of the forewing as long as wing width disc. Pedicel distinctly wider than scape. Area beneath stigmal vein bare *howardi* Dozier, 1937 Haiti
- Longest marginal fringe on the lower margin of the forewing conspicuously shorter than the wing disc width; other characters differing 2
- 2 Longest marginal fringe about two-thirds the wing disc width. Scape cylindrical, seventh antennal segment the longest, eighth segment not very narrow compared to seventh; middle tibial spur as long as basitarsus *lauri* (Mercet), (1911) Europe, Caucasus
- Longest marginal fringe slightly over half the wing disc width. Scape distinctly expanded in the basal half, fifth and sixth antennal segments largest, eighth segment very narrow and nipple-like; middle tibial spur longer than basitarsus *tertia* sp. nov. Pakistan

2.2b *Eretmocerus breviclavus* sp. nov. *Female:* Length 0.6 to 0.62 mm Head orange



Figures 24-26. *Eretmocerus breviclavus* sp. nov. 19. forewing female; 24. antenna female; 25. forewing female; 26. middle tibia and tarsi. 27-29. *Encarsia longifasciata* sp. nov. 27. thorax and gaster showing longitudinally orientated pigmented areas; 28. antenna female; 29. forewing male.

yellow, rest of the body pale yellow; antennae and legs pale; eyes red; collar of pronotum and propodeum dusky brown.

Head broader than height (23:17), frontovertex 4 times as wide as the eye width; ocelli in an obtuse-angled triangle, POL 3 times as long as OOL; malar space with a delicate subocular suture which does not reach the eye; antennae originating well below the lower margin of eyes, almost near the clypeus, the toruli wide apart, about 1.7 times the length of a torulus; scrobes short, very shallow; mandible distinctly 3-dentate, though the inner tooth very short and somewhat rounded.

Thorax with mesoscutum bearing 3 pairs of setae and the scutellum with 2 pairs of setae; scutum very finely areolate reticulate sculptured, scutellum with very fine striations; mesophragma extending into the abdominal cavity about one-third the length. Forewings hyaline, 2.5 times as long as wide, the longest of the marginal fringe slightly less than one-eighth the wing disc; stigmal vein subequal in length to marginal vein, speculum mesally bordered by 1 to 3 rows of long setae (15-17), marginal and

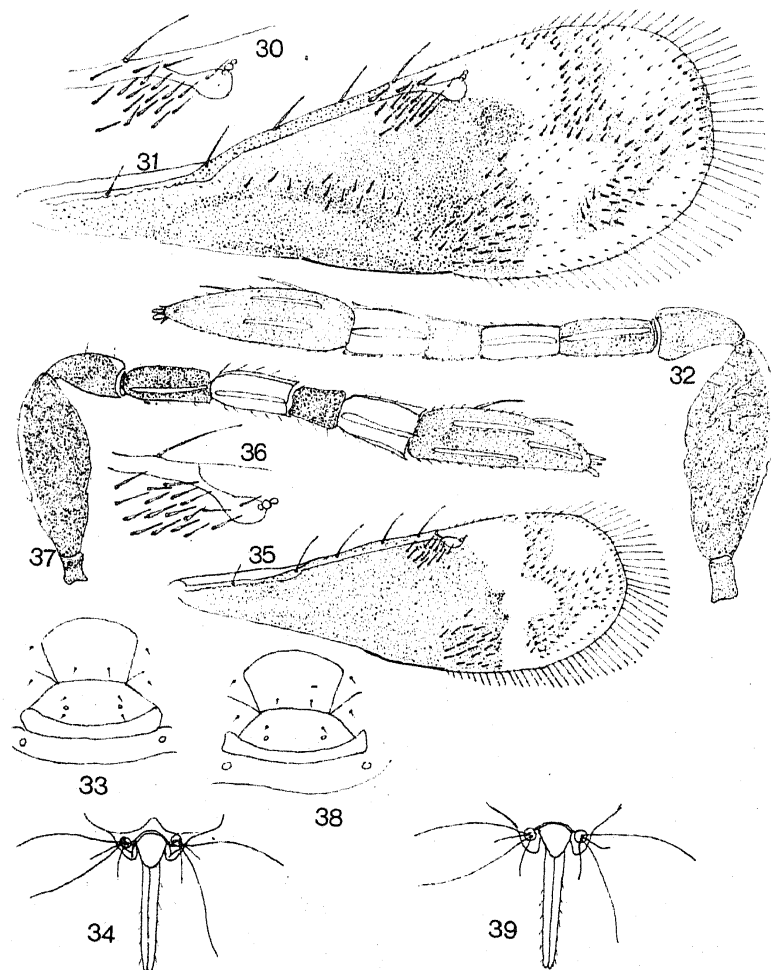
submarginal veins with 3 dorsal setae each, costal cell almost bare except for 3 small apical setae and a minute seta near the third dorsal seta of the submarginal vein. Hind wing 7 times as long as broad, marginal fringe slightly longer than wing disc width. Legs normal to species of *Eretmocerus*; middle tibial spur half as long as basitarsus.

Gaster slightly longer than thorax (50:40), ovipositor as seen in cleared slide-mounted specimens originating from the third segment and the ovipositor sheath well exerted, longer than middle tibia (60:40).

Male: Essentially similar to female in every respect except for the antennae.

Material studied: Holotype female, India, Karnataka, Bangalore, ex blackfly on curry leaves, 20.vi.1983 (Clement Peter coll.). Paratypes 6 females, 2 males, same data.

Eretmocerus breviclavus sp. nov. runs in Compere's key (Compere 1936) to couplet No. 9 and also to Hayat (1972) who adapted Compere's key to include the 3 new species he described from India to couplet No. 11. *breviclavus* sp. nov. differs from both



Figures 30-39. 30-34. *Azotus bharathius* sp. nov. 30. forewing female; 31. stigmal vein magnified; 32. antenna female; 33. arrangement of setae on mesoscutum and scutellum; 34. the last tergite and ovipositor sheath. 35-39. *Azotus fumipennis* sp. nov. 35. forewing female; 36. stigmal vein magnified; 37. antenna female; 38. arrangement of setae on mesoscutum and scutellum; 39. last tergite and ovipositor sheath.

longipes Compere and *portoricensis* Dozier in the very short truncate clava and the number and arrangement of cilia based bordering the speculum.

2.2c *Encarsia longifasciata* sp. nov. Female: Length 0.55 to 0.75 mm Head, pronotum, scutum except for a narrow strip on the lateral aspects, axillae and a small patch laterally on all gastral tergites except the seventh dark brown, scutellum, metanotum, most of propodeum and gaster pale; antennae and legs pallid; wings hyaline; eyes dark red.

Head 2.5 times as broad as high, ocelli in an equilateral triangle, POL almost equal to ool and the lateral ocelli about 3 times their own diameter away from the occipital border. Eyes with short setae. Antenna with scape cylindrical 5 times as long as broad, radicle long, slightly less than half the length of scape (16:40), pedicel slightly longer than funicle segment 1 (14:12); funicle 4-segmented, all longer than broad, 4th funicle segment the longest; clava 2 jointed, slightly longer than the combined lengths of funicle segments 3 and 4 (50:44), the ratio of the components of the antenna as follows: scape excluding radicle 40, pedicel 14, F1, 12; F2, 18; F3, 20; F4, 24; clava 50; F1 to 3 with a single linear sensilla, F4 and clava with 2 linear sensillae each.

Thorax shorter than gaster (58:75); mesoscutum mesally almost smooth, laterally delicately areolate reticulate, scutellum and propodeum almost smooth; scutum with one pair of distal setae, parapsides and axillae with 1 + 1 setae, scutellum with a pair of extremely minute setae in the middle which can easily be overlooked and a pair of distal long and strong setae.

Forewing 3 times as long as broad, submarginal vein very much shorter than marginal vein (40:60), with two minute setae, marginal vein with 7 long setae, stigmal vein narrow, long; costal cell with a row of very minute setae; discal ciliation sparse, a hairless area beneath and proximal to stigmal vein, a continuous line of dark ciliation running parallel to the wing border enclosing a hairless area all round (figure, 29), marginal fringe long, the longest about five-eighths of wing disc (40:68); hind wing narrow, with one complete row of discal cilia running parallel to the dorsal border and a short row of cilia running parallel to ventral border, marginal fringe shorter than the wing disc (28:18). Legs normal to the species group, middle and hind basitarsi as long as subsequent three tarsal joints combined, middle tibial spur slightly over half as long as basitarsus.

Gaster long, twice as long as thorax, ovipositor originating from the fourth segment, longer than hind tibia, not exerted; gastral tergites 1 to 6 laterally with a dark pigmented patch which is areolate reticulate, also tergites 1 to 4 with a pair of lateral long setae and tergites 5 and 7 with 4 setae and tergite 5 with 2 setae situated mesally.

Male: not known.

Material studied: Holotype female India, Karnataka, Bangalore, ex blackfly on *Murraya* sp. 20.6.1983 (Clement Peter coll.). Paratype 1 female same data, the holo and paratypes are mounted on the same slide and the holotype marked.

A great number of species of *Encarsia* have been described from all over the world and there is no key available to separate the species. Viggiani (1979, 1981) grouped the known species to 15 groups and gave some important characters by which the groups could be recognised. *Encarsia longifasciata* sp. nov. falls under *coryli* group and differs from the two other species of *coryli* group, *coryli* Viggiani and *japonica* Viggiani by the

strikingly pigmented and sculptured tergites and by the sparse discal cilia and the long marginal fringe.

2.2d Azotus bharathius sp. nov. Female: Length 0.95 to 1.1 mm Body mostly dark blackish brown; pronotum metallic green, head between and beneath eyes silvery white, cheeks with a dark brown band between the silvery white strip below the eye and cheek, frontovertex white with a brown patch surrounding the ocellar area; scape including radicle, pedicel basally, funicle segments 1 to 3 and clava dark brown; scape with a narrow dorsal strip, pedicel apically and funicle segments 2 and 4 white. Hind coxae and femora mostly dark brown, fore and middle coxae partially yellow, all tibiae basally dark, apical half are more yellow. Eyes brick red. Forewing from base to the area beneath stigmal vein evenly dark infumate, followed by a hyaline area, intercepted by a stigmoid dark infumate band and distally two hyaline areas separated by a faint smokey patch; hind wing faintly infumate.

Head with ocelli in an isosceles triangle, POL slightly longer than OOL; frontovertex about one half of head width; eyes longer than malar space, malar suture not evident; mandible clearly 3-dentate and a truncation; scrobes deep. Antenna with the scape expended apically, pedicel slightly less than half the scape, funicle segment 1 the longest, second slightly shorter, fourth shorter than second, third funicle segment the shortest, clava slightly longer than scape; the ratio of their measurements are as follows: scape 52; pedicel, 24; funicle 1, 28; F2, 26; F3, 14; F4, 24; clava 55.

Thorax distinctly transversely orientated reticulate sculptured; propodeum and first gastral tergite with areolate reticulate sculpture. Mesoscutum with a pair of minute setae and scutellum with two pairs of setae. Forewing as in the figure (figure 30). Gaster nearly two times as long as thorax (90:46), ovipositor sheaths well exerted, about one-third the length of gaster.

Male: Essentially similar to female except for the antennae and wings.

Material studied: Holotype female India, Uttar Pradesh, Lucknow, ex *Aspidiotus glomeratus* (= *Melanaspis glomerata* Green), Indian Sugarcane Research Institute, 1974 Paratypes 3 females, 8 males, same data.

Azotus bharathius sp. nov. is very close to *Azotus williamsi* Annecke and Insley in Annecke and Insley's (1970) key to Ethiopian species of *Azotus* and cannot be placed in Hayat's (1979) key to Indian species. *A. bharathius sp. nov.* differs from *A. williamsi* in having a number of strong discal setae beneath the marginal vein; the new species also differs from the European species *elegantulus* Silvestri in not having a hyaline area beneath the marginal vein but having a hyaline vertical strip in front of stigmal vein.

2.2e Azotus fumipennis sp. nov.: This species is almost similar to *bharathius sp. nov.* except for the following characters: ratio of funicle segments and clava; scutellum with only one pair of setae; forewing from base to the end of stigmal vein strongly infumate, the peg-like setae present below the marginal vein in *bharathius* absent.

Material studied: Holotype female India, Uttar Pradesh, Lucknow, ex scale insects 20.x.1980 (H. Nigam coll.); Paratypes 14 females same data; 4 females ex scale insects on sugarcane, 15.iii.1980 (T. N. Srivastava coll.); 7 females 1 male Tamilnadu, Gangavati, ex *Melanaspis glomerata* Green, on sugarcane, 15.iv.1981 (S. K. Dutta coll.); 4 females 3 males Coimbatore, ex scale insects on sugarcane, 1982; 1 female Andhra Pradesh, ex

Melanaspis glomerata Green, Jan. 1982; 1 female Karnataka, Hospet, ex *Melanaspis glomerata* Green, 5.i.1982 (G. L. Patter coll.).

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