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**The *Ponana* (Homoptera, Cicadellidae) of Panama**by Dwight M. DeLong<sup>1</sup>, Henk Wolda<sup>2</sup> and Miguel Estribí<sup>2</sup>

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**ABSTRACT**

All species of *Ponana* now known to occur in Panama are treated. They include ten species previously described by DeLong and Freytag, several of which not previously found in Panama: *P. xola*, *P. guatama*, *P. xila*, *P. panama*, *P. chiapa*, *P. yura*, *P. xella*, *P. pana*, *P. bola* and *P. dulera*, and 7 new species: *P. clavella* n.sp., *P. irheae* n.sp., *P. boquetea* n.sp., *P. virga* n.sp., *P. amana* n.sp., *P. quadriproba* n.sp. and *P. ortha* n.sp.. Male genital structures of all species and color patterns of all species but *P. pana* are illustrated. A key is presented to separate these Panamanian species of *Ponana*.

**INTRODUCTION**

Ball (1920) proposed the name *Ponana* as a subgenus of *Gypona*. DeLong (1942) recognized *Ponana* as a genus and placed 21 species in *Ponana*. Oman (1949) treated the genus *Ponana* and Metcalf (1962) listed all known species. A few years later all known species were treated by DeLong and Freytag (1967). New species were described by DeLong and Kolbe (1967, 1974), DeLong (1977) and DeLong and Martinson (1973, 1980). In the course of ecological studies on Homoptera in Panama (Wolda 1978, 1980, 1983) a number of *Ponana* species were found. The present paper deals with all 17 species of *Ponana* now known from Panama, including 7 described as new. Male genital structures of all species and color patterns of all but one species are illustrated and a key is prepared to separate the Panamanian species. All types are in the DeLong collection in the Ohio State University. A map illustrates the localities mentioned in the paper.

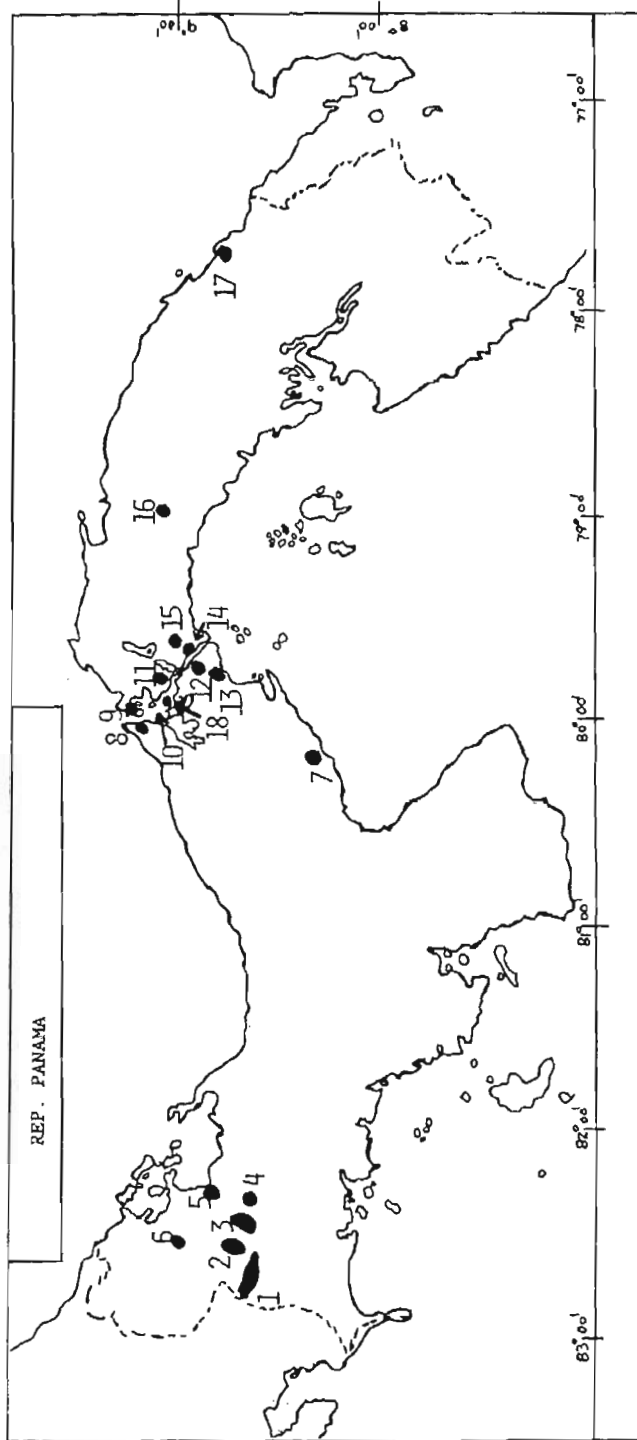


Plate 1 - Map of the Republic of Panama with the localities mentioned in the text. 1, 2, 3, 4: Highlands of Chiriqui province. 1. Volcán, Rio Sereno, Rio Colorado, Zambrano, Palo Santo. 2. Bambito, Cerro Punta. 3. Boquete, Potrerillos. 4. Fortuna. 5, 6, Bocas del Toro province lowlands. 5. Miramar. 6. Corriente Grande. 7. Rio Hato, Coelè province. 8. Mojinga swamp. 9. Fort Gulick. 10. Gatun Lake. 11. Pipeline Road. 12. Cocolì. 13. Arraiján. 14. Fort Clayton. 15. Las Cumbres. 16. Majé island in Bayano Lake. 17. Punta Escocés in San Blas Comarca. 18. Barro Colorado Island.

Color in these specimens refers to the color of the specimens at hand, which are dead and dry. It is likely that some referred to as yellow are in fact green when alive.

KEY TO THE PANAMANIAN SPECIES OF *PONANA*

|         |   |                   |
|---------|---|-------------------|
| 1       | Margin of crown usually with rather fine striae, clypeus without a median transverse carina between antennal sockets .....                | 2                 |
| 1'      | Margin of crown usually with coarse, deep striae, clypeus with a median transverse carina between antennal sockets .....                  | 16                |
| 2(1)    | Aedeagal shaft cleft, notched or excavated at apex .....  | 3                 |
| 2'      | Aedeagal shaft not cleft or notched at apex .....   | 12                |
| 3(2')   | Aedeagus with a V-shaped notch at the apex .....  | 4                 |
| 3'      | Aedeagus with notch at apex more U-shaped .....   | 6                 |
| 4(3)    | Aedeagal apex with a slight notch only .....  | <i>clavella</i>   |
| 4'      | Aedeagal apex with a notch wider and deeper .....   | 5                 |
| 5(4')   | Style with apical portion curving laterally .....   | <i>xola</i>       |
| 5'      | Style with apical portion bent laterally .....  | <i>gunama</i>     |
| 6(3')   | Aedeagal apical excavation broad, containing non-sclerotized tissue .....   | <i>irheoe</i>     |
| 6'      | Aedeagal apical excavation narrower, without non-sclerotized tissue .....   | 7                 |
| 7(6')   | Aedeagal apical excavation small and shallow .....  | 8                 |
| 7'      | Aedeagal apical excavation broader and deeper .....   | 9                 |
| 8(7)    | Apical portion of style narrow, pointed at apex .....   | <i>xllu</i>       |
| 8'      | Apical portion of style narrow but not pointed .....  | <i>pomana</i>     |
| 9(7')   | A prominent curved process arising near the tip of the aedeagus, just below the apical division and extending laterally and basally ..... | <i>boquelea</i>   |
| 9'      | Without curved apical process .....   | 10                |
| 10(9')  | With paraphyses distinctly longer than aedeagal shaft .....   | <i>chilapa</i>    |
| 10'     | With paraphyses about as long as aedeagal shaft .....   | 11                |
| 11(10') | With aedeagal apical tips arising on ventral apical margin .....  | <i>yura</i>       |
| 11'     | With aedeagal shaft tapered apically, aedeagal tips arising from medial portion .....   | <i>xello</i>      |
| 12(2')  | Aedeagal shaft with apical processes .....  | 13                |
| 12'     | Aedeagal shaft without apical processes .....   | 14                |
| 13(12)  | Aedeagal apical processes very short, extending laterocaudally .....  | <i>pana</i>       |
| 13'     | Aedeagal apical processes ¼ length of shaft, extending laterocaudally .....   | <i>virga</i>      |
| 14(12') | Paraphyses distinctly shorter than aedeagal shaft, apical portion of aedeagal shaft bent laterobasally .....                              | <i>amano</i>      |
| 14'     | Paraphyses as long as, or longer than aedeagal shaft, bearing short lateral processes or processes curves laterally .....                 | 15                |
| 15(14') | Aedeagal shaft bearing 2 short lateral processes bent slightly laterobasally .....  | <i>quadriloba</i> |
| 15'     | Aedeagal shaft without processes, bent laterally near apex .....  | <i>ortho</i>      |
| 16(1')  | Apex of aedeagal shaft roundedly excavated .....  | <i>bola</i>       |
| 16'     | Apex of aedeagal shaft bluntly pointed .....  | <i>dulera</i>     |

*Ponana* (P.) *clavella* n.sp.  
(figs. 1-2, 31-35)

Length of male 6 mm, female unknown. Crown 2/3 as long as wide at base between eyes. Ocelli close to the anterior margin of the vertex and nearer to the eyes than to the median line. Color: yellow, a series of 8 spots along anterior margin of pronotum, mostly behind eyes, with a larger spot close to the lateral margin. Forewings brownish sybhyaline, with most crossveins, as well as ir-

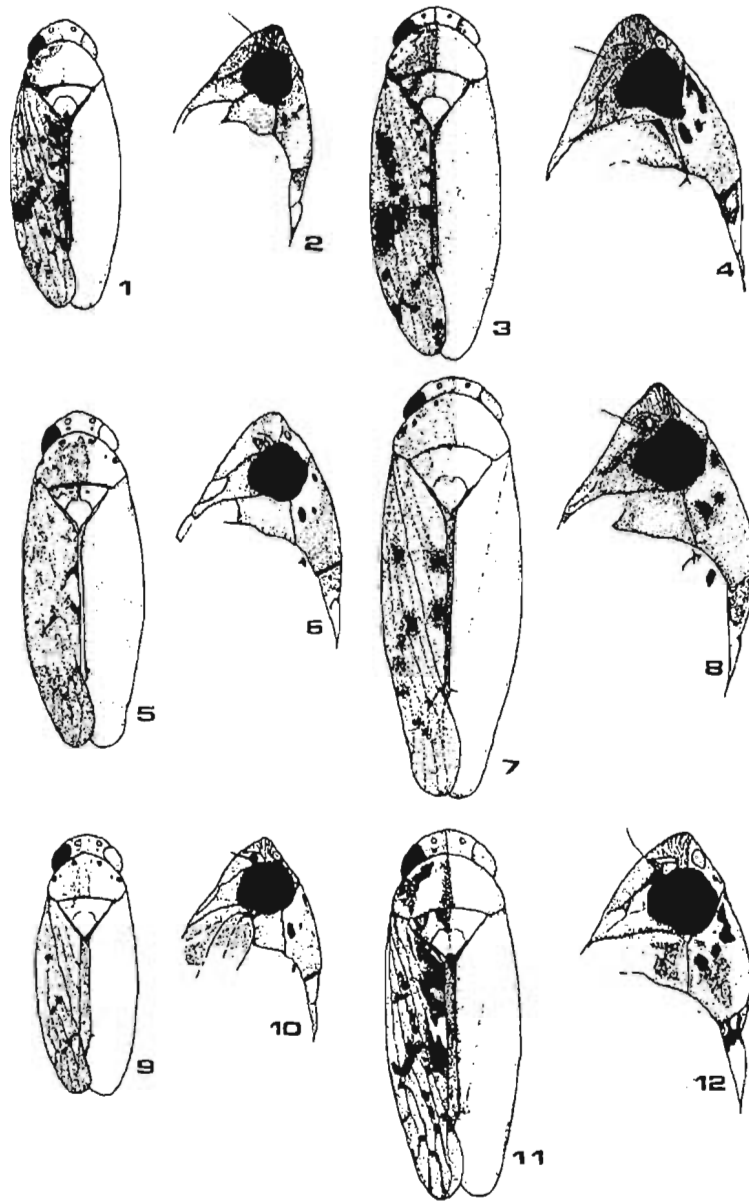


Plate II - Dorsal and lateral views of species of *Ponana*. Figs. 1-2 *P. clavella* n.sp., Figs. 3-4 *P. xola* DeL. & Frey., Figs. 5-6 *P. guatama* DeL. & Frey., Figs. 7-8 *P. irheae* n.sp., Figs. 9-10 *P. xila* DeL. & Frey., Figs. 11-12 *P. pamana* DeL. & Frey.

regular spots, brown. Clavus mostly yellow with brownish spots. Veins prominent.

Male genital plates twice as long as wide at middle, apices rounded. Style with blade narrowed on apical fourth, apex curving slightly dorsally. Aedeagal shaft slender, slightly notched apically and bearing a short apical spine which extends basolaterally. Paraphyses broad in lateral view, widest in middle, apices bluntly rounded. Pygofer narrowed apically, with a narrow, produced, blunt apex.

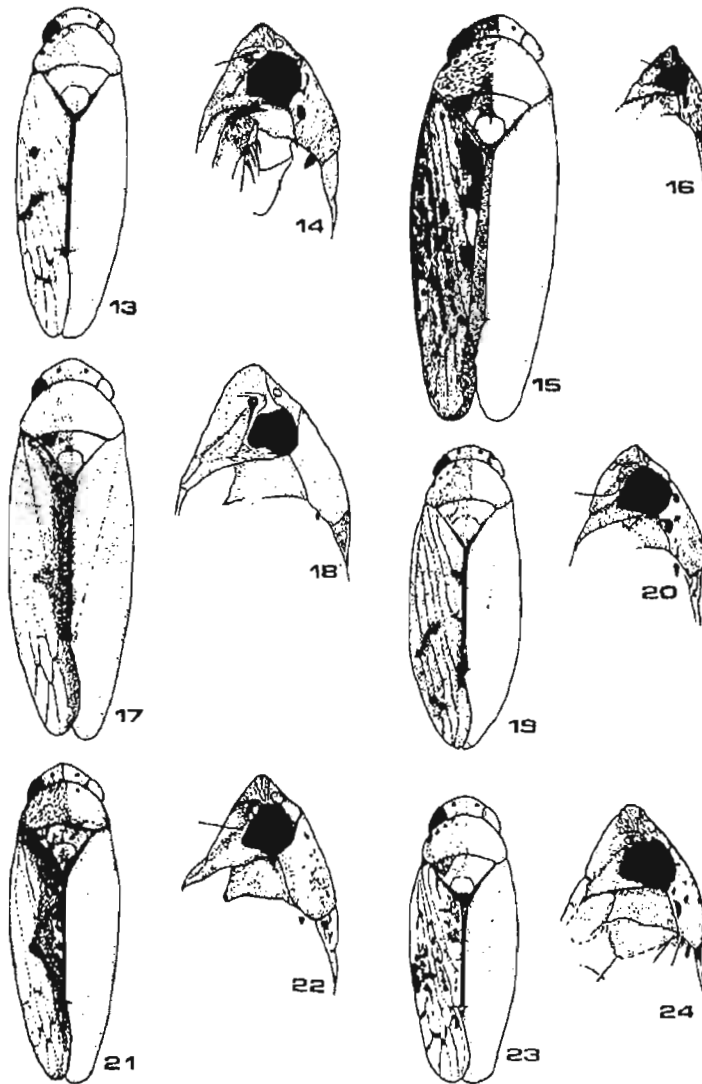


Plate III - Dorsal and lateral views of species of *Ponana*. Figs. 13-16 *P. boquetea* n.sp., Figs. 17-18 *P. chiapa* DeL. & Frey., Figs. 19-20 *P. yura* DeL. & Frey., Figs. 21-22 *P. xella* DeL. & Frey., Figs. 23-24 *P. amana* n.sp.

Holotype male, Panama, Canal Area, Pipeline Road. Canopy knockdown of *Luehea seemannii*, 5 IV 1976. H. Wolda coll (cf Wolda 1979).

*P. clavella* is placed in the subgenus *Ponana* and is related to *P. notula* (Fowler 1903, p. 313) from which it can be separated by the notched apex of the aedeagus and the straighter apical portion of the style. *P. clavella* is externally indistinguishable from *P. amana* n.sp., from which it can be separated by the male genitalia. (cf figs. 23–24, 81–83). A number of females were obtained, 6.5 mm length with the 7th sternum slightly broadly excavated on each side of a produced, broadly rounded, median lobe. However, it is unknown whether these females belong to *P. clavella* or *P. amana*.

***Ponana (P) xola* DeLong and Freytag**  
(figs. 3–4, 36–38)

Species as described from Mexico: Length of male 9 mm, female 9.5 mm. Crown broadly rounded, more than half as long as middle as wide between the

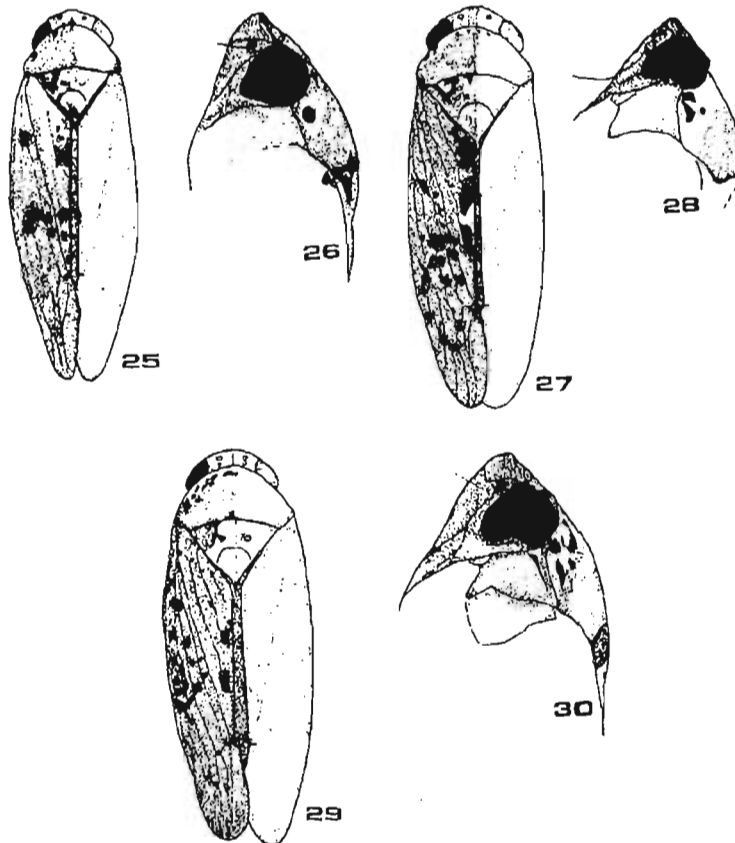


Plate IV – Dorsal and lateral views of species of *Ponana*. Figs. 25–26 *P. quadriproba* n.sp. Figs. 27–28 *P. ortha* n.sp., Figs. 29–30 *P. dulera* DeL. & Frey.

eyes at base. Color somewhat variable. Crown pale brown, pronotum pale brown, disc usually paler with numerous brown punctate spots. Usually with a dark spot on the lateral margin and a small round spot proximal to it behind the eyes, with paler brown markings along the anterior margin. Scutellum yellow to pale brown. Forewings pale brown with claval area along commissure marked with dark brown spots except a white spot on the middle of the clavus. A few brown spots on other portions of the wing, veins on apical half margined with brown. Costal area may be tinted with red.

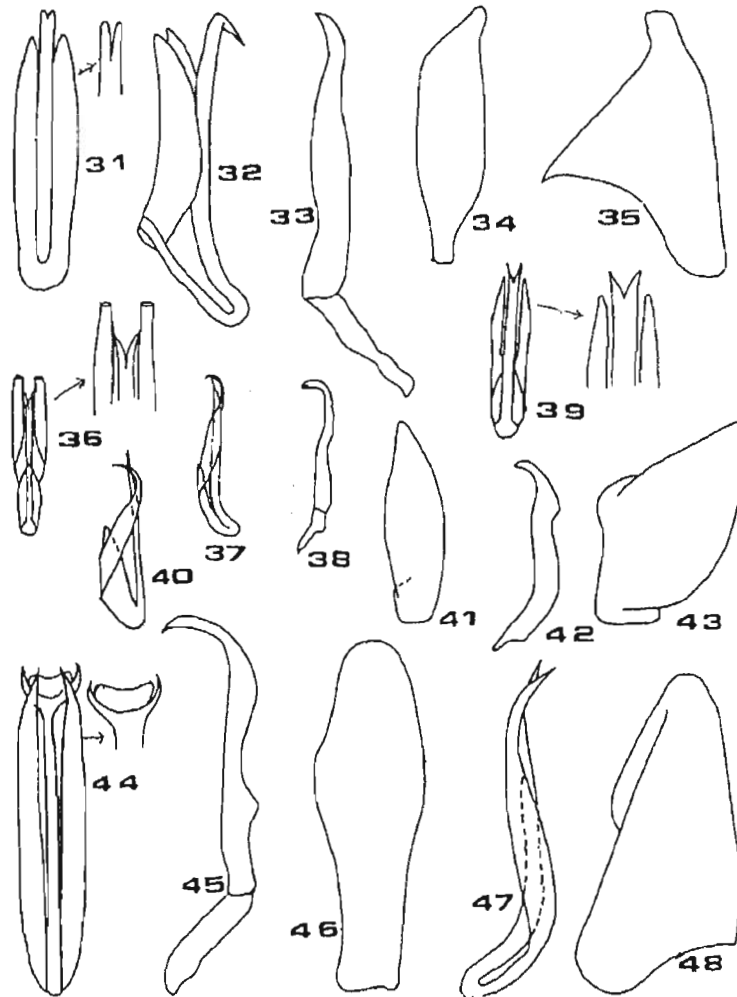


Plate V - Male genital structures. Figs. 31-35 *P. clavella* n.sp., 31. aedeagus ventrally, 32. aedeagus laterally, 33. style laterally, 34. plate ventrally, 35. pygofer laterally. Figs. 36-38 *P. xola* DeL. & Frey., 36. aedeagus ventrally, 37. aedeagus laterally, 38. style laterally, Figs. 39-43 *P. guatama* DeL. & Frey., 39. aedeagus ventrally, 40. aedeagus laterally, 41. plate ventrally, 42. style laterally, 43. pygofer laterally. Figs. 44-48, *P. irhae* n.sp., 44. aedeagus ventrally, 45. style laterally, 46. plate ventrally, 47. aedeagus laterally, 48. pygofer laterally.

Female 7th sternum with posterior margin slightly broadly excavated each side of a produced, broadly rounded, median lobe which is notched at the middle with a short, broad, V-shaped notch.

Male genital plates rather narrow, elongate, widest at about 2/3 their length, concavely narrowed on outer margin to form a blunt, rounded apex. Style rather narrow in lateral view, bent outwardly near apex, forming a short tip which is pointed and curved downward at apex. Aedeagal shaft with 2 terminal apical processes which are separated by a V-shaped notch, the apical half slender and extending to apex of paraphyses. Paraphyses in ventral view blunt at apex, in lateral view they appear tapered with long slender apices.

This species is originally described from southern Mexico. A number of *Ponana* specimens have however been found in Panama, i.e. in Miramar and Corriente Grande, in the lowlands of Bocas del Toro province in NW-Panama and on Barro Colorado Island. These have genitalia very similar to *P. xola* and also the color markings are the same. They are, however, much smaller. Males 7 1/2 – 8 mm and females 8 1/2 mm. These are considered to be *P. xola* at this moment.

***Ponana (P) guatama* DeLong and Freytag**  
(Figs. 5–6, 39–43)

Length of male 6.5 mm, female 7.5 mm. Crown broadly rounded, about 1 2/3 as wide between the eyes at the base as long in the middle. Color varying in intensity but with the same general color pattern. Crown dull yellow to bright orange, the central basal portion usually brownish. Pronotum with 4 black spots as in related species: a large spot on each side, just behind the eye, and 2 smaller spots just behind the anterior margin, one behind each ocellus. A horizontal band across the apical portion and 5 longitudinal stripes extending cephalad from this yellowish to bright orange or pink band. Scutellum variable in color but usually with apical angle pale. Forewing yellow to green with a few brown spots on disc and clavus. A pink marginal stripe along commissure on basal 2/3 of clavus.

Female 7th sternum with posterior margin broadly shallowly excavated each side of a median pronounced lobe, which is broadly, shallowly notched at the middle, about 1/3 the width of the segment and produced beyond the lateral angles. Male genital plates with the outer margin sloping and the inner margin curving to form a blunt narrow pointed apex next to the outer margin. Style slender, broadly, shallowly excavated on the inner margin at about the middle. Apical third narrowed, curved outwardly and tapered to pointed apices. Aedeagal shaft with a short V-shaped notch at apex, forming a pair of short stout divergent spines. Paraphyses slender, apices bluntly pointed.

The species was originally described from Guatemala. A male was collected in the Panama Canal Area and a female specimen is labelled "R.P. Narangai Panama in 1953.



**Ponana (P) irheae n.sp.**

(Figs. 7-8, 44-48)

Length of male 8 mm, female unknown. Crown more than twice as wide at base between eyes as long at the middle. Ocelli about equidistant between eyes and median line and nearer to anterior than to posterior margins. Color: pale brown with 4 large black spots on anterior margin of pronotum. Scutellum brown with darker brown basal angles. Forewings brownish subhyaline with 2 transverse rows of 4 small spots each, across clavus.

Male genital plates 3x as long as wide at middle. Apices narrowed, rounded. Style slender in lateral view, broadly concavely excavated on ventral margin, half its length. Apical fourth slender, curved dorsally, apex pointed on basal margin. Aedeagal shaft with a broad U-shaped apical notch at apex, most of cavity bearing a transparent membrane. Paraphyses with apices slender, pointed, extending ventrocaudally. Pygofer narrowed apically, rounded at apex, with an extended lobe-like structure on caudal portion of dorsal margin. Holotype male Panama, Chiriquí province, Fortuna, 1050 m, 6-V-1976. Paratype male same data except 6-XI-76. Both collected H. Wolda. For details about the locality see Adames (1977, McElravy et al. 1982).

*P. irheae* is placed in the subgenus *Ponana* and is related to *P. velora* DeLong and Freytag, from which it can be separated by the broader, more flattened, apex of the aedeagus with the cavity bearing a transparent membrane.

We take pleasure in naming this species for the Instituto de Recursos Hidráulicos y Electrificación (IRHE) without whose cooperation and assistance it would have been impossible to collect this material.

**Ponana (P) xila DeLong and Freytag**

(Figs. 9-10, 49-52)

Length of male 5.7 mm, female 6.7 mm. Crown broadly rounded, 2/3 as long at middle as wide between the eyes at base. Color: crown yellow unmarked. Pronotum dull yellow with 4 black spots across anterior portion. A larger angularly shaped spot is near the lateral margin behind each eye and a round spot is back of each ocellus. A very small spot is proximal to the large spot behind each eye. Scutellum pale with darker basal angles. Forewings pale brownish yellow with 2 transverse rows with 4 spots, each extending from disc of wing across clavus. Spots on each side of commissure on clavus smaller.

Female 7th sternum which posterior margin slightly excavated each side of a broad produced median lobe, more than half the width of segment and produced beyond the length of lateral angles.

Male genital plates elongate, more than 3 1/2x as long as wide, apex narrow, blunt, rounded. Style narrowed at 4/5 its length, apical fifth curved outwardly, tapered, apex sharply pointed. Aedeagal shaft narrowed with a pair of short, slender, separated apical processes. Paraphyses broadened at 2/3 their length, then abruptly tapered to slender pointed apices.

*P. xila* has been collected in Panama on the Pacific side of the Canal at Fort

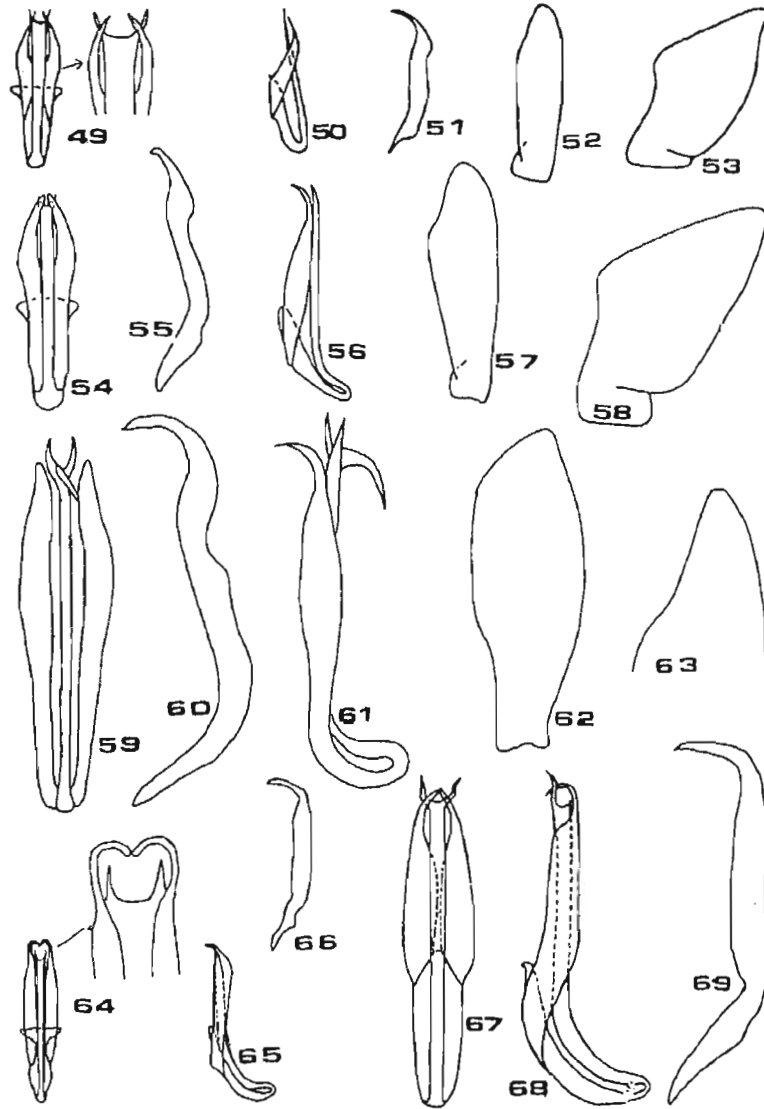


Plate VI – Male genital structures. Figs. 49–53 *P. xila* DeL. & Frey., 49. aedeagus ventrally, 50. aedeagus laterally, 51. style laterally, 52. plate ventrally, 53. pygofer laterally. Figs. 54–58 *P. pamana* DeL. & Frey., 54. aedeagus ventrally, 55. style laterally, 56. aedeagus laterally, 57. plate ventrally, 58. pygofer laterally. Figs. 59–63 *P. boquetea* n.sp., 59. aedeagus ventrally, 60. style laterally, 61. aedeagus laterally, 62. plate ventrally, 63. pygofer laterally, apical portion. Figs. 64–66 *P. chiapa* DeL. & Frey., 64. aedeagus ventrally, 65. aedeagus laterally, 66. style laterally. Figs. 67–69 *P. yura* DeL. & Frey., 67. aedeagus ventrally, 68. aedeagus laterally, 69. style laterally.

Clayton and at Madden Dam, and on the Atlantic side at Mojinga swamp, Minda dairy and Ft. Gulick.

**Ponana (P) pamana** DeLong and Freytag  
(Figs. 11-12, 54-58)

Length of male 7 mm, female 7.7 mm. Crown broadly rounded, about 1/3 wider between eyes at base than long at middle. Ocelli large, pale in color. Color: yellowish tinted with orange, brown and black. Crown with pale orange coloring. Pronotum yellow with black markings in a circle just behind each eye. Scutellum yellow with the apex and the basal angles darker. Forewings yellow, tinted with pale brown and with darker markings on claval area, heaviest on the anterior half. A large dark brown spot on the disc, on each side. Apical veins brown and a dark brown diagonal line extending anteriorly from the apex of the clavus.

Female 7th sternum with posterior margin shallowly, concavely, excavated on each side of a median produced lobe which is broadly, shallowly, concavely, notched at middle. The lobe is about 2/3 the width of the segment and is produced beyond the lateral angles.

Male genital plates long, widest at middle, inner margin concavely curving. Outer margins sloping to form a blunt, narrowed, rounded, apex. Style in ventral view broadly, concavely notched on inner margin. Apical third narrowed to form a rather short, outwardly curved fingerlike apex which is narrow and rather sharply pointed at the tip. Aedeagal shaft long and narrow, slightly enlarged just before the apex, with a short, spinelike process on the outer margin, at each side, at the tip. Paraphyses broadened just beyond the middle, then abruptly narrowed and tapered to form slender appressed apices.

*P. pamana* has been collected at "Palm Beach, Panama". In and near the Canal Area at Cocolí, Las Cumbres, Arraiján and Barro Colorado and in Potrerillos in the Chiriquí highlands in Western Panama. Also at Rio Hato in Coclé province.

**Ponana (P) boquetea** n.sp.  
(Figs. 13-16, 59-63)

Length of male 8.5 mm, female 9.5 mm. Crown more than half as long at middle as wide at the base between the eyes. Color of holotype (Figs. 13-14): Crown pale brown. Pronotum pale brown with 6 black spots in a row along the anterior margin. The central 4 are small, with a large spot behind each eye and close to the lateral margin. Scutellum reddish brown. Forewings brown with 3 transverse rows of 4 large black spots across clavus. A transverse row of 4 smaller spots along anteapical cells. Veins reddish brown. A number of color forms have been found at the same locality (cf figs. 15-16) but because they are inseparable on male genital characters they are at the moment considered color variations of *P. boquetea* n.sp.

Female 7th sternum with posterior margin produced each side of a median shallow notch.

Male genital plates 3x as long as wide at the middle. Apex broad, rounded. Style with blade broadly, concavely rounded on ventral margin at more than half its length. Apical sixth curved dorsally and pointed. Aedeagal shaft notched at apex and bearing a subapical basally curved sharply pointed process, 1/5 length of shaft. Paraphyses with apices slender, curved dorsally and pointed.

Holotype male: Panama, Chiriquí province, Boquete, 1350 m, 25-XI-1975. H. Wolda coll. Paratypes: 10 males same data except 25-VII-75, 7-IX-75, 29-IX-75, 30-VIII-75, 12-VII-76, 1-X-76, 7-X-76, 10-X-76, 13-I-77, 16-X-77, and 10 females, same data except 16-VIII-75, 19-VIII-75, 18-VIII-76, 5-XII-76, 25-XII-76, 13-I-77, 17-VI-77, 29-VI-77, 15-XII-77, 25-VIII-77.

*P. boquetea* is placed in the subgenus *Ponana* and is related to *P. chiapa* DeLong and Freytag, from which it can be separated by the basally curved spine on the ventral margin of the apical portion of the aedeagal shaft.

#### ***Ponana (P) chiapa* DeLong and Freytag**

(Figs. 17–18, 64–66)

Length of male 7.5 mm., female 8 mm. Crown broadly roundedly produced, more than twice as wide between eyes at base as long at middle. Color: crown yellow unmarked, pronotum yellow with 2 round black spots near anterior margin, one behind each ocellus. Scutellum with basal angles brown, apical angle white. Forewing yellow tinged with green, with a broad dark stripe extending from scutellum along inner margin of wings, when closed, to and covering all but first apical cell. The stripe begins along sides of scutellum, is gradually widened to disc of wing at about middle of clavus and continues broad to apex of wing. Female 7th sternum with posterior margin slightly and broadly concavely excavated on each side of a produced median lobe which is about 1/4 the width of the segment, slightly notched at middle and produced beyond lateral angles.

Male genital plates as long as aedeagus. Styles concavely narrowed on outer margin, then bent outwardly at a right angle to form a long narrow apical portion which is sharply pointed at the apex. Aedeagal shaft long and slender, slightly widened at apex with a spine-like process on each outer margin, directed caudally. Paraphyses rather constricted at 3/4 their length and tapered to slender apices.

The only known Panamanian record of this species is from 1938, collected by J.G. Sanders at Cerro Punta, 1400 m, in Western Panama.

#### ***Ponana (P) yura* DeLong and Freytag**

(Figs. 19–20, 67–69)

Length of male 7 mm, female 8 mm. Crown broadly rounded, twice as wide between the eyes at base as long at the middle. Color yellow with a few dark markings. Crown yellow unmarked. Pronotum yellow with 4 black spots, one on lateral margin just behind each eye, and a pair along the anterior margin, one behind each ocellus. Forewings yellow, central and apical costal areas

hyaline. Faint color markings, both light and dark along commissure of basal 2/3 of clavus.

Female 7th sternum with posterior margin broadly, shallowly excavated each side of a median produced lobe which is shallowly, broadly, notched at the apex. The lobe is about 1/3 the width of the segment and not produced to the length of the lateral angles.

Male genital plates rather broad, widest at middle, convexly curved on outer margin. Apices broad, almost truncate. Style broadly excavated at about middle on inner margin. Apical fourth bent outwardly and tapered to a pointed apex. Aedeagal shaft slender, elongate, abruptly broadened at apex to form a broad truncate tip which is at least 5x the width of the shaft. Paraphyses elongate, rather slender, tapered to pointed apices which curve inwardly. *P. yura* is originally described from Chiapas, Mexico. A female of what probably is this species has been collected in Boquete, Panama, 17-VI-1977. coll. H. Wolda.

***Ponana (P) xella* DeLong and Freytag**

(Figs. 21-22, 70-72)

Length of holotype (Mexican) male 8.5 mm, Mexican female unknown. Crown broadly rounded, almost twice as wide between eyes at base as long at middle. Color: Crown golden yellow. Pronotum dull yellow with numerous minute brown punctate spots on disc and distal half. A row of 4 brown spots across anterior portion, a spot behind each eye and a spot near anterior margin behind each ocellus. Scutellum brownish yellow with basal angles darker and a large pale yellow spot at apex. Forewings appearing pale brown with darker spots on claval margin along apical portion of scutellum and paler spots posteriorly on clavus. A larger brown spot on disc, smaller brown spots on apical portion of wing and on apical cross veins.

Male genital plates more than twice as long as broad at middle. Apices broad, truncate. Style strongly narrowed at four-fifth its length. Apical fifth narrow, curved outwardly, sharply pointed. Aedeagal shaft with 2 short, slender, separated apical processes. Paraphyses broadened at middle. Apices narrowed, curved inwardly. Pygofer constricted just before the apex which is narrow and bluntly pointed.

*P. xella* is originally described from Mexico. In the Western Highlands of Panama, Chiriquí province, however, a species is commonly found which is at the moment identified as this species. It is smaller. Males 6.5 mm, female 7 mm. Female 7th sternum with a slight, broad excavation on each side of a slightly produced median lobe. Specimens of this species have been found in Boquete, Volcán, Zambrano, Palo Santo, Fortuna, Rio Sereno, Bambito, Rio Colorado, all above 1000 m.

**Ponana (P) pana** DeLong and Freytag  
(Figs. 73-77)

Length of male 6.3 mm, female 7.5 mm. Crown broadly rounded in front, almost twice as wide at base between eyes as long at middle. Color: greenish

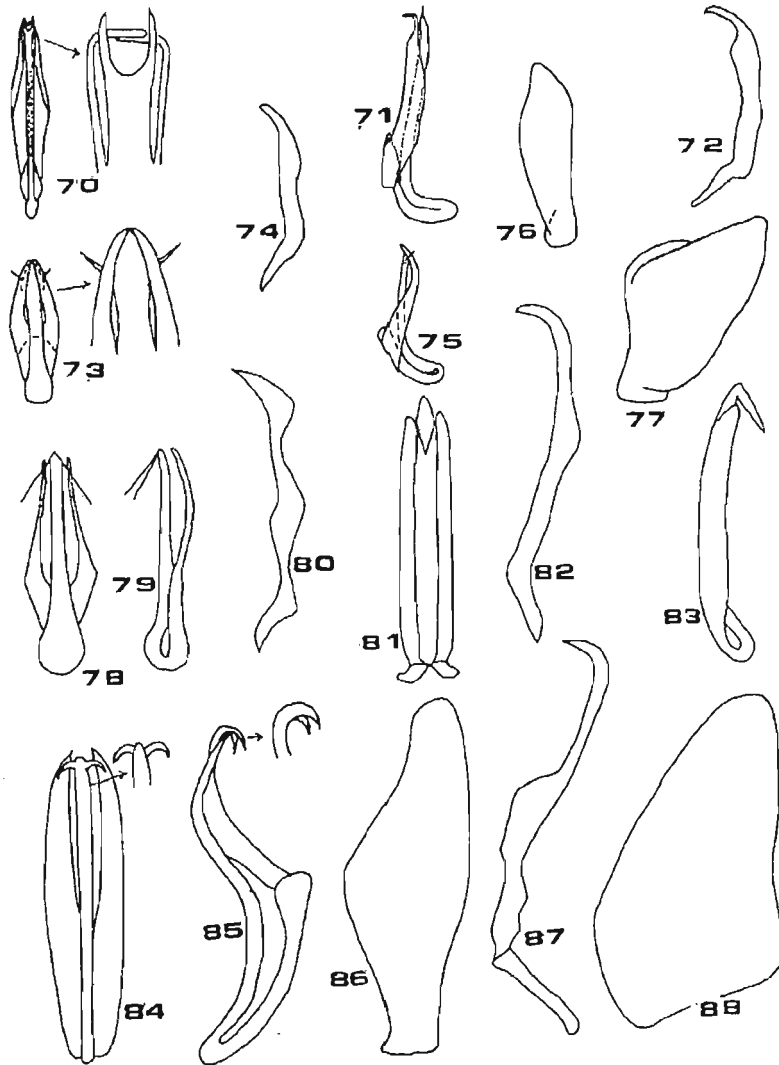


Plate VII - Male genital structures. Figs. 70-72 *P. xella* DeL. & Frey. 70. aedeagus ventrally, 71. aedeagus laterally, 72. style laterally. Figs. 73-77 *P. pana* DeL. & Frey. 73. aedeagus ventrally, 74. aedeagus laterally, 75. style laterally, 76. plate ventrally, 77. pygofer laterally. Figs. 78-80 *P. viri* n.sp., 78. aedeagus ventrally, 79. aedeagus laterally, 80. style laterally. Figs. 81-83 *P. amana* n.sp. 81. aedeagus ventrally, 82. style laterally, 83. aedeagus laterally. Figs. 84-88 *P. quadriproba* n.sp. 84. aedeagus ventrally, 85. aedeagus laterally, 86. plate ventrally, 87. style laterally, 88. pygofer laterally.

yellow, crown unmarked, pronotum with a series of 4 black spots, a larger one on lateral margin just behind each eye, and 2 smaller spots close to the anterior margin, one behind each ocellus. Scutellum yellowish, the basal angle paler. Forewings yellowish, appearing pale brownish with abdomen beneath, with 2 rows of minute spots across folded wings, one row just behind scutellum and another row crossing just beyond middle of clavus.

Female 7th sternum with posterior margin almost truncate. There is a slight broad excavation on each side of a median scarcely produced lobe, slightly excavated at center, which is about the same length as the lateral angles. Male genital plates slightly concave on outer margin just before apex, convexly curv-

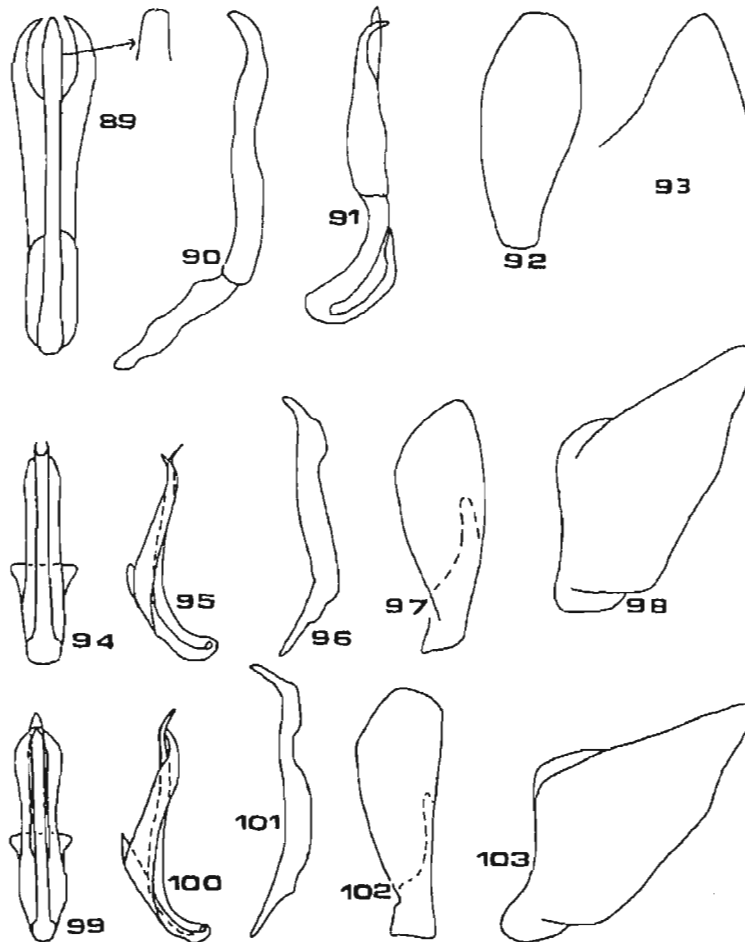


Plate VIII — Male genital structures. Figs. 89–93 *P. ortha* n.sp., 89. aedeagus ventrally, 90. style laterally, 91. aedeagus laterally, 92. plate ventrally, 93. pygofer laterally, apical portion. Figs. 94–98 *P. bola* DeL. & Frey., 94. aedeagus ventrally, 95. aedeagus laterally, 96. style laterally, 97. plate ventrally, 98. pygofer laterally. Figs. 99–103 *P. dulera* DeL. & Frey., 99. aedeagus ventrally, 100. aedeagus laterally, 101. style laterally, 102. plate ventrally, 103. pygofer laterally.

ed on inner margin. Style in ventral view rather broad, broadly, shallowly notched on inner margin before middle. Apical fifth curved laterally, rather broad and abruptly narrowed to pointed apices. Aedeagal shaft gradually broadened to apex which bears a median terminal process and 2 prominent diverging processes which extend diagonally from the middle of the apex. Paraphyses broadened at the middle, then tapered to slender converging apices.

*P. pana* has been collected in Panama at Gatun Lake and on Barro Colorado Island, in the Panama Canal Area.

***Ponana (P) virga* n.sp.**  
(Figs. 78-80, 106-107)

Length of male 7 mm, female unknown. Crown broadly rounded, almost twice as wide between the eyes at base as long at the middle. Color: Crown dark brown. Pronotum with 3 large black spots on anterior margin, on each side, behind the eye, but these are not prominent in view of the dark brown color. Scutellum dark brown. Forewings dark brown, costal marginal area paler brownish.

Male genital plates 3.5x as long as wide at the middle; apices rounded. Style narrowed at half its length, then broadened apically, forming a triangular, foot-shaped portion, broadened on the ventral margin and sharply pointed dorsally. Aedeagal shaft long, slender, bearing a pair of apical processes which extend basad to 1/4 the length of the shaft. Paraphyses narrowed at half their length and forming rod-shaped apical portions which extend to the length of the shaft. Pygofer rounded apically.

Holotype male: Panama, Majé Island (Bayano), 18-VI-1967. A. Adames coll. *P. virga* is placed in the subgenus *Ponana* and is related to, *P. atea* DeLong and Freitag from which it can be separated by the rod-shaped apical portion of the paraphyses.

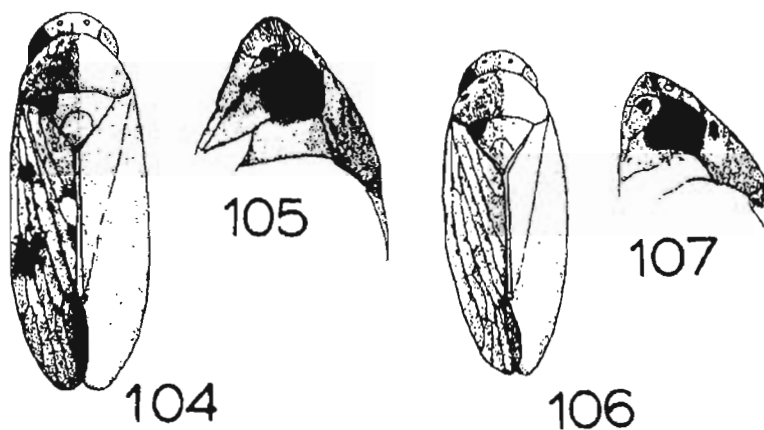


Plate IX - Dorsal and lateral views of species of *Ponana*. Figs. 104-105 *P. bola* DeLong and Freitag. Figs. 106-107 *P. virga* n.sp.



**Ponana (P) amana** n.sp.  
(Figs. 23-24, 81-83)

Length of male 6.5 mm, female unknown. Crown 1.5x as wide between the eyes at base as long at the middle. Ocelli closer to anterior than to posterior margin. Color: crown pale brownish, ocelli red. Pronotum pale brownish with darker brownish coloration and irregular dark brown spots behind the eyes. Scutellum pale brown with basal angles and apex dark brown. Forewings pale brownish with dark brown spots on clavus, middle of costa and apical cross veins. Veins pale brownish.

Male genital plates 3x as long as wide at middle, apices rounded. Style roundly enlarged at 2/3 its length. Apical 7th narrow, broadly curved dorsally. Aedeagal shaft slender, apical 7th angularly bent basolaterally at apex, Paraphyses extending from near base almost to apex, Pygofer rounded apically.

Holotype male: Panama, Barro Colorado Island, Canal Area, 8-X-1979. H. Wolda coll.

*P. amana* is placed in the subgenus *Ponana* and is related to *P. notula* (Fowler 1903 p. 313) from which it can be separated by the single instead of the double bent apical process of the aedeagal shaft. It is also very closely related to *P. clavella* n.sp. from which it can only with certainty be separated by the male genitalia. See description *P. clavella* for remark on females.

**Ponana (P) quadriproba** n.sp.  
(Figs. 25-26, 84-88)

Length of male 7.5 mm, female 8 mm. Crown 2/3 as long at middle as basal width between the eyes. Ocelli close to anterior margin of crown. Color pale yellow. Pronotum with 4 large round black spots close to the anterior margin. Scutellum with dark brown basal angles. Forewings yellowish subhyaline with 2 rows, one of 4 and one of 5, brown spots across the clavus at 1/3 and 2/3 the length of the clavus. Veins of apical cells dark brown. Female 7th sternum with posterior margin gently sloping caudally and slightly notched at middle.

Male genital plates 3x as long as wide at middle. Apices narrowed, rounded. Style slightly concave on median portion of ventral margin. Apical fifth slender, curved dorsally, bluntly pointed. Aedeagal shaft bearing a pair of short apical spines which extend basally. Paraphyses with apices curved basally at apex and pointed. Pygofer narrowed and rounded apically.

Holotype male: Panama, Chiriquí province, Fortuna 1050 m, 9-XII-1977. Paratypes males same data except 4-VI-77, 9-VII-77, 30-VI-78 (2x), 12-VI-79. Paratype females same data except 10-X-76, 8-X-77, 31-X-77, 12-V-79. Also paratype females Corriente Grande, Bocas del Toro province, 100 m. 29-I-80, 23-III-80. All coll. H. Wolda.

*P. quadriproba* is placed in the subgenus *Ponana* and is related to *P. cincta* DeLong and Freytag, from which it can be separated by the longer apical processes of the aedeagus and the longer paraphyses.

**Ponana (P) ortha** n.sp.

(Figs. 27-28, 89-93)

Length of male 8 mm, female 8.5 mm. Crown roundly produced, almost twice as wide at base between eyes as long at middle. Ocelli nearer to eyes than to median line. Color: Crown yellow. Pronotum yellow with 4 round black spots near the anterior margin, one behind each ocellus and one behind outer margin of each eye, and an elongate black spot along lateral margin, behind the outer margin of each eye. Scutellum dull yellow with brownish basal angles. Forewings brownish yellow with numerous dark brown spots. A row of spots along commissure and a row along the claval vein. A white spot at the middle of the clavus on the commissure. Numerous black spots on corium and costal area.

Female 7th sternum with slight broad excavation on each side of a slightly produced, broadly rounded median lobe which is slightly notched at the middle.

Male genital plates 2.5x median width, apices broadly rounded. Style almost straight, slightly narrowed on apical fifth, which is scarcely bent laterally. Aedeagal shaft straight with apex appearing truncate, blunt. Paraphyses narrowed apically and slightly curved dorsally.

Holotype male: Panama, Chiriquí province, District Renacimiento, Santa Clara, 1300 m, 28-29-V-1976. Coll. Engleman & Thurman. Female paratype: same data.

*P. ortha* is placed in the subgenus *Ponana* and is related to *P. pamana* DeLong and Freytag, from which it can be separated by the single portion of the apex of the aedeagus and the apical portion of the style which is broader and more truncate.

**Ponana (Neoponana) bola** DeLong and Freytag

(Figs. 94-98, 104-105)

Length of male 8 mm, female 8.5 mm. Crown broadly, convexly rounded more than half as long at middle as wide at base between eyes. Color: dull brownish yellow with a pale brownish spot on base behind each ocellus. Pronotum with spots and vermiculate markings just behind the anterior margin. Forewings with a white spot at the middle of the clavus on wing margin with a brown spot on each side. Base of clavus with dark brown spots, a large brown spot at middle of costal margin and small brownish spots on corium. Female 7th sternum with produced rounded lateral angles between which the posterior margin is broadly shallowly excavated either side of a broad produced median lobe, which is more than half the width of the segment. Produced to the length of the lateral angles and is broadly, shallowly, notched at apex.

Male genital plates broadened at 2/3 their length, then rapidly tapered to blunt apices. Styles rather broad, deeply, concavely, notched at 2/3 their length, then broadened on inner margins and tapered to a pointed apex. Aedeagal shaft slender and tapered to a slightly wider apex which is composed of 2 slightly separated pieces which converge at the tip. Paraphyses broad:

near the base, then narrowed and slender to near the apex where they are slightly broadened and blunt at the apex. Pygofer blunt at apex.

*P. bola* is originally described from the Panama Canal Area, from the Tres Rios plantation and Trinidad River area round Gatun Lake and from Mojinga Swamp towards the Atlantic end of the Canal.

**Ponana (*Neopolana*) *dulera* DeLong and Freytag**  
(Figs. 20–30, 99–103)

Length of male 8.5 mm, female 9 mm. Crown broadly, convexly, rounded, more than half as long at middle as wide between the eyes at base. Color: dull yellow to pale brown. Crown with a small black spot at base, back of each ocellus. Pronotum with small black spots and vermiculate markings just back of the anterior margin. Forewings with reddish veins. A pale spot near the middle of the clavus on the wing margin. Several pale spots along the costa. A few dark brown spots on the corium and apical cross veins. Female 7th sternum deeply excavated on either side of a broad, rounded, median lobe which is half the width of the segment and is produced to the length of the lateral angles.

Male genital plate broadest at 2/3 its length, then tapered to a blunt, rounded, apex. Style rather broad, elongate, deeply concavely excavated on the ventral margin at about 2/3 its length, then broadened again, bent outwardly and tapered to a blunt apex. Aedeagal shaft long, slender, exceeding the paraphyses in length and with a blunt apex. Paraphyses rather broad at base, narrowed a little at the middle, broadened again just before the apex and rounded to appressed, blunt, apices. Pygofer with ventral apical angles bluntly pointed.

*P. dulera* has been originally described from Panama, from Barro Colorado Island, the Tres Rios Plantation and Mojinga swamp, all in the Canal Area towards the Atlantic side. It has also been collected in Las Cumbres, just East of the Canal and from Punta Escocés in the San Blas, in Northeastern Panama.

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