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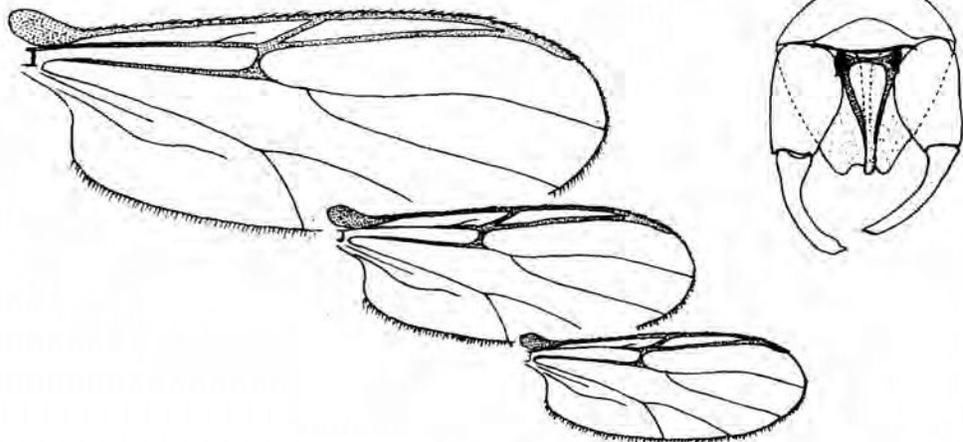
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BIOLOGIA ACUATICA

Nº 11

A REVISION OF THE NEOTROPICAL SPECIES
OF *PARABEZZIA* (DIPTERA: CERATOPOGONIDAE)

G. R. Spinelli
W. L. Grogan Jr.



LA PLATA
1987

The current systematic knowledge about the genus *Parabezzia* indicates that most of its species are represented in the Neotropics. More than twenty years elapsed since they were included in a general revision of the genus made by the North American entomologist Willis W. Wirth. Nevertheless, Neotropical species of the genus were never revised as a whole.

This first comprehensive systematic study of Neotropical *Parabezzia* includes descriptions, diagnosis and keys, which adequately offer a complete view of this taxon and besides enriches it with the description of nine new species, being at present the list composed by twenty three species.

I am confident, this paper will be of wide use not only among specialists, but also as an important help to those ecologists dealing with aquatic insects communities.

Juan A. Schnack

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BIBLIOTECA

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(DIPTERA CERATOPOGONIDAE)

by

Gustavo R. Spinelli and William L. Grogan Jr.

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SUMMARY

A REVISION OF THE NEOTROPICAL SPECIES OF *PARABEZZIA* (DIPTERA: CERATOPOGONIDAE)

The twenty-three species of *Parabezzia* known to inhabit the Neotropical region are revised; fourteen species are fully described and illustrated, and a diagnosis is provided for each of the other nine species. Nine species are new: *balseiroi*, *brasiliensis*, *cayoensis*, *clastrieri*, *hondurensis*, *inaequalis*, *pallida*, *pseudunguis*, and *raccurti*. A diagnosis and description are given for the genus, and a key is presented for the recognition of each species.

RESUMEN

REVISION DE LAS ESPECIES NEOTROPICALES DEL GENERO *PARABEZZIA* (DIPTERA: CERATOPOGONIDAE)

Se realiza la revisión de las veintitrés especies pertenecientes al género *Parabezzia* de la región Neotropical, catorce de las cuales se describen e ilustran, mientras que se proporcionan las diagnósias de las nueve restantes. Nueve especies son nuevas para la Ciencia: *balseiroi*, *brasiliensis*, *cayoensis*, *clastrieri*, *hondurensis*, *inaequalis*, *pallida*, *pseudunguis*, y *raccurti*. Se presenta la diagnósia y la descripción genérica, así como una clave para el reconocimiento de las especies.

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INTRODUCTION

Parabezzia is a small genus of biting midges known primarily from the New World, with 4 species from Africa

and 1 from Sri Lanka presently known from outside this region. Malloch (1915) proposed the genus and included the type-species *P. petiolata* Malloch from Illinois, *Ceratopogon inermis* Coquillett from Arizona, and a 3rd species, *Ceratopogon elegantulus* Johannsen, now placed in *Stilobezzia* Kieffer. Wirth (1952b) reviewed the genus and considered *Diaphanobezzia* Ingram and Macfie from Argentina as a synonym of *Parabezzia*. Wirth (1965) revised the genus, described 11 new species from North America, Panama, Puerto Rico and Jamaica, and proposed the new genus *Afrohelea* for *Parabezzia capensis* de Meillon and Hardy from South Africa. Grogan and Wirth (1977) reviewed the Nearctic species, described 7 new species which they included in 3 species group, and discussed phylogenetic relationships within the genus. Clastrier and Raccourt (1979) described 4 new species from Haiti from reared females. Wirth and Grogan (in prep.) recognize *Diaphanobezzia* Ingram and Macfie as a separate, distinct genus from *Parabezzia*.

In the present paper we describe 9 new species, provide a key for adults, and recognize 4 species groups. Grogan and Wirth (1977) found that females of most species are distinctive, their claws being more or less characteristic of each species. They discovered the males, which in most ceratopogonid genera have genitalia distinctive for each species, are all very similar in *Parabezzia*, with only slight differences being noted in their aedeagi. They also found that the costal fringe of the male wing was more or less diagnostic for each species. For example, in some species there is a normal fringe, while in others the fringe is much reduced or nearly absent with a few large setae present anterad of the radial cell. In the present study, we found that the costal fringe character was not nearly as reliable for the diagnosis for males of the Neotropical region. However, the aedeagus proved to be extremely diagnostic for the species of which males are known from this region.

In addition, the claws of some of the Neotropical species have only a single talon on some of their legs, another character not present in the Nearctic fauna.

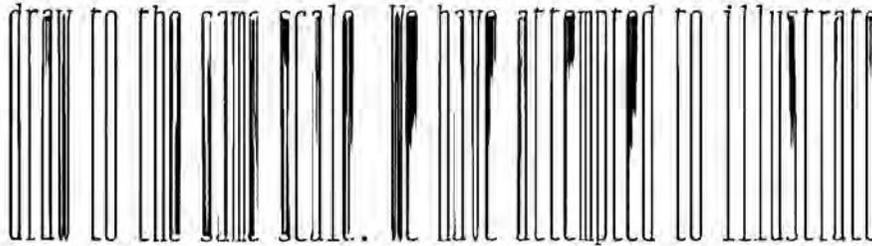
MATERIALS AND METHODS

This study is based primarily on the collections of the National Museum of Natural History (USNM) in Washington, where the types of the new species are deposited, unless otherwise noted. Paratypes as available will be deposited in the collections of the Museo de La Plata (MLP).

For general terminology of Ceratopogonidae see Wirth (1952a) and Downes and Wirth (1981). Measurements and other data are based on specimens mounted on slides in the manner of Wirth and Marston (1968), and are presented in the following manner: mean (minimum-maximum value, n= number of measurements).

The following special terms are used in the descriptions of females: wing length is measured from the basal arculus to the wing tip. Three costal sections are measured: I from the basal arculus to the tip of vein R1, II from the tip of R1 to the tip of radial sector (Rs), and III from the tip of Rs to the end of the thickened costa between the tips of Rs and vein M1. Vein Rs is measured from its proximal juncture with the r-m crossvein distad to the wing margin. Antennal proportions (AP) are the relative proportions of the flagellomeres; antennal ratio (AR) is the value obtained by dividing the combined lengths of the proximal 8 flagellomeres into the combined lengths of the distal 5 flagellomeres. Palpal proportions (PP) are the relative proportions of the palpal segments, which are reduced to 4 segments in *Parabezzia*. The first 2 are indistinctly segmented and the last 2 are fused, so that the proportions are measured in 3 sections: the combined lengths of the 1st and 2nd; the 3rd which bears the hyaline sensilla; and the fused 4th and 5th. Palpal ratio (PR) is the length of the 3rd palpal segment divided by its greatest breadth. Claw proportions (CP) are the relative proportions of the longest claw on each leg in the order: fore, mid, and hind.

Drawings have been made to show the most diagnostic features of each species. The claws of females are perhaps their most important character, and they have been



types whenever possible.

Genus *Parabezzia* Malloch

Parabezzia Malloch, 1915: 358. Type-species, *Parabezzia petiolata* Malloch, by original designation.

References: Wirth, 1965: 215 (revision; diagnosis; synonymy); Grogan and Wirth, 1977: 49 (revision of North American species); Clastrier and Raccurt, 1979: 165 (generic characters; Haitian species).

Diagnosis.- A genus of small, shining, fairly stout biting midges that can be distinguished from all other ceratopogonid genera by the following combination of characters: wing of female broad, bare, with 1 long radial cell, the costa extending past end of R4+5 and ending near tip; palpus with 4th and 5th segments fused; female claws lacking basal inner tooth; eyes moderately separated, bare; male coxae with long spinelike setae; and male genitalia with parameres fused and reduced to a slender hyaline rod or absent, aedeagus triangular with basal arms directed dorsally.

Fittkauhelea can be distinguished from *Parabezzia* by the female claws with basal inner teeth; eyes broadly separated, pubescent; fore tibia swollen distally; male fore coxa without strong spinelike setae; and male parameres absent.

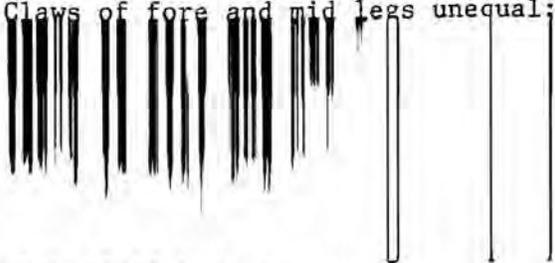
Diaphanobezzia differs from *Parabezzia* by the eyes broadly separated (bare or pubescent); wing membrane without microtrichia; halter sac-like, without constriction before knob; female claws with basal inner teeth; spermathecae with distinct necks; and male parameres separate.

Description.- Moderately small, stout, nearly bare midges. Eyes moderately separated, bare. Antenna moderately long and slender; in female distal 5 flagellomeres more elongated than preceding 8, cylindrical; male fla-

gellum with well developed plume, distal 3 flagellomeres elongated, proximal flagellomeres separate, not fused. Palpus 4-segmented, slender, without sensory pit. Scutum broadly convex, without anterior spine or tubercle; humeral pits absent. Legs slender, unarmed; male fore and mid coxae with dense long spinelike bristles; 4th tarsomeres cordiform; 5th tarsomeres stout and laterally compressed, sometimes swollen or tuberculate ventrally; female claws long and curved, equal or unequal without basal inner teeth, rarely only a single talon present; male claws small and equal. Wing broad in female, narrower in male, surface with very small microtrichia, especially in male; macrotrichia absent; 1 radial cell, elongate in female with costa prolonged to or near wing tip, reaching half-way between apices of veins R4+5 and M1, male costa ending at 0.6 of wing length; r-m crossvein slightly oblique, tip placed slightly distad of base of R1; media petiolate, the petiole about as long as r-m crossvein; costa often with a beadlike or scalelike swelling at base near level of basal arculus. Two large spermathecae. Male genitalia short and broad, tergum rounded distally; aedeagus large and triangular; parameres fused into a small, pointed, triangular hyaline sclerite often hidden in ventral view by aedeagus.

Key to the Neotropical species of *Parabeszia*
(primarily for females)

1. Costa with basal swelling (*alexanderi* group)..... 2
- Costa lacking basal swelling..... 6
2. Basal costal swelling semi-detached; costal section III reaching tip of vein M1.....*blantoni* Wirth
- Basal costal swelling non-detached; costal section III separate from vein M1..... 3
3. Legs dark brown; r-m crossvein nearly perpendicular*costalis* Wirth
- Legs yellowish, at least in part; r-m crossvein at an oblique angle..... 4
4. All femora yellowish; AR 1.22.....*spangleri* Wirth
- At least basal 1/2 of mid and hind femora dark brown; AR 0.79-0.97..... 5

5. Claws of fore and mid legs equal; scutellum with 8-10 bristles.....*balseiroi* n. sp.
- Claws of fore and mid legs unequal; scutellum
- 
- with 10-15 bristles.....*alexanderi* Wirth
6. Costal fringe very dense, the setae arising from base, center and margin of the costa (*brunnea* group)..... 7
- Costal fringe not very dense, the setae arising from center or margin of the costa..... 10
7. Fifth tarsomeres of mid and hind legs with ventral tubercles and claws with a single talon.....*brunnea* Wirth
- Fifth tarsomeres of mid and hind legs without ventral tubercles and claws with a pair of talons..... 8
8. Fifth tarsomere of fore leg without prominent ventral swelling; wing very darkly brownish infuscated; hind tarsal ratio 3.60.....*fuscipennis* Wirth
- Fifth tarsomere of fore leg with prominent ventral swelling; wing slightly infuscated; hind tarsal ratio 2.40-2.48..... 9
9. Claws of fore leg slightly unequal; scutellum with 4 bristles; 3 presutural and 3 posterolateral setae.....*arenosa* Clastrier and Raccurt
- Claws of fore legs very unequal; scutellum with 6 bristles; 3-4 presutural and 4-5 posterolateral setae.....*caribbeana* Clastrier and Raccurt
10. Costal fringe long, distally the setae arising from margin of vein (*uncinata* group)..... 11
- Costal fringe short, distal portion very short, the setae far apart and arising from near center of vein (*unguis* group)..... 17
11. Claws equal on all legs..... 12
- Claws unequal at least on one leg..... 14
12. Yellowish species; wing whitish hyaline, veins pale.....*pallida* n. sp.
- Brownish species; wing slightly infuscated, veins brown..... 13
13. Scutum with 2 presutural and 4 posterolateral setae; 2 setae on costa proximad of basal arculus..

-*wirthi* Clastrier and Raccurt
 --- Scutum with 3-4 presutural and 5-6 posterolateral
 setae; 1 seta on costa proximad of basal arculus
*haitiensis* Clastrier and Raccurt
 14. Radial cell very narrow; 5th tarsomeres with pro-
 minent ventral swelling on at least one leg..... 15
 --- Radial cell broad; 5th tarsomeres without promi-
 nent ventral swelling..... 16
 15. Fifth tarsomere of fore leg with prominent ventral
 swelling; 1 seta on costa proximad of basal arcu-
 lus; spermathecae without minute hyaline perfora-
 tions.....*cayoensis* n. sp.
 --- Fifth tarsomeres of fore and hind legs with pro-
 minent ventral swelling; 2 setae on costa proxi-
 mad of basal arculus; spermathecae with minute
 hyaline perforations.....*brasiliensis* n. sp.
 16. Longest talon of hind claws extremely long, about
 5 times as long as shorter talon; costal section
 III very short, 0.15 as long as II; aedeagus with-
 out posterolateral expansions; distal portion of
 parameres absent.....*inaequalis* n. sp.
 --- Longest talon of hind claws short, about twice as
 long as shorter talon; costal section III long,
 0.4 as long as II and extending nearly to vein M₁;
 aedeagus with posterolateral expansions; distal
 portion of parameres broad.....*raccurti* n. sp.
 17. Costal section III 0.6 as long as II..... 18
 --- Costal section III 0.3 or less as long as II..... 19
 18. Costal fringe complete to wing tip....*unguis* Wirth
 --- Costal fringe nearly absent on costal sections II-
 III.....*pseudunguis* n. sp.
 19. Fifth tarsomeres with ventral swelling, especially
 prominent on fore leg.....*jamaicensis* Wirth
 --- Fifth tarsomeres without prominent ventral swel-
 ling..... 20
 20. Legs yellowish brown; femora brownish on fore and
 mid legs, brownish black on hind leg; tarsomeres
 1-4 yellowish.....*panamensis* Wirth
 --- Legs brown, proximal 3 tarsomeres pale..... 21
 21. Distal costal fringe with setae shorter than width
 of costa.....*clastrieri* n. sp.

- Distal costal fringe with setae about the width
of costa or longer..... 22
22. Costal section III 0.25 as long as II; claws equal

on fore and hind legs; halter pale.....
.....*neungui's* Grogan and Wirth

- Costal section III 0.30 as long as II; claws un-
equal on fore and hind legs; halter dark brown....
.....*hondurensis* n. sp.

Alexanderi Group

Characterized by both sexes having wings with basal costal swelling.

Parabezzia alexanderi Wirth

(Fig. 1)

Parabezzia alexanderi Wirth, 1965: 219 (female; Massachusetts); Grogan and Wirth, 1977: 56 (female, male; pupa; Massachusetts to Florida).

Diagnosis.- A large species; wing of both sexes with large, rounded, dark, basal costal swelling; legs yellow, proximal 1/2 of mid and hind femora brown.

Female.- Wing length 1.16 (1.02-1.32, n=6) mm; breadth 0.45 (0.41-0.52, n=6) mm.

Head: Brown. Antennal pedicel dark brown; flagellum (fig. 1a) moderately stout, bases of proximal 8 flagellomeres pale; AP 15-9-9-9-9-9-9-9-12-13-14-14-21; AR 0.92 (0.90-0.97, n=6). Palpus pale; PP 13-16-11; PR 4.18 (3.75-4.67, n=6). Mandible with 8-10 teeth on inner margin; outer margin with 3-5 small widely spaced teeth.

Thorax: Scutum, scutellum, postscutellum dark brown; scutellum with 10-15 bristles. Legs yellow; coxae, trochanters, proximal 1/2 of mid and hind femora brown; 5th tarsomeres (fig. 1b) with unequal claws on fore and mid legs, subequal on hind leg; mid 5th tarsomere very large with prominent ventral swelling and very long slender claws; CP 17-33-11. Wing (fig. 1c) hyaline, veins light brown; costa with large, rounded, dark, basal swelling, fringe long and dense; costal sections I-II-III in pro-

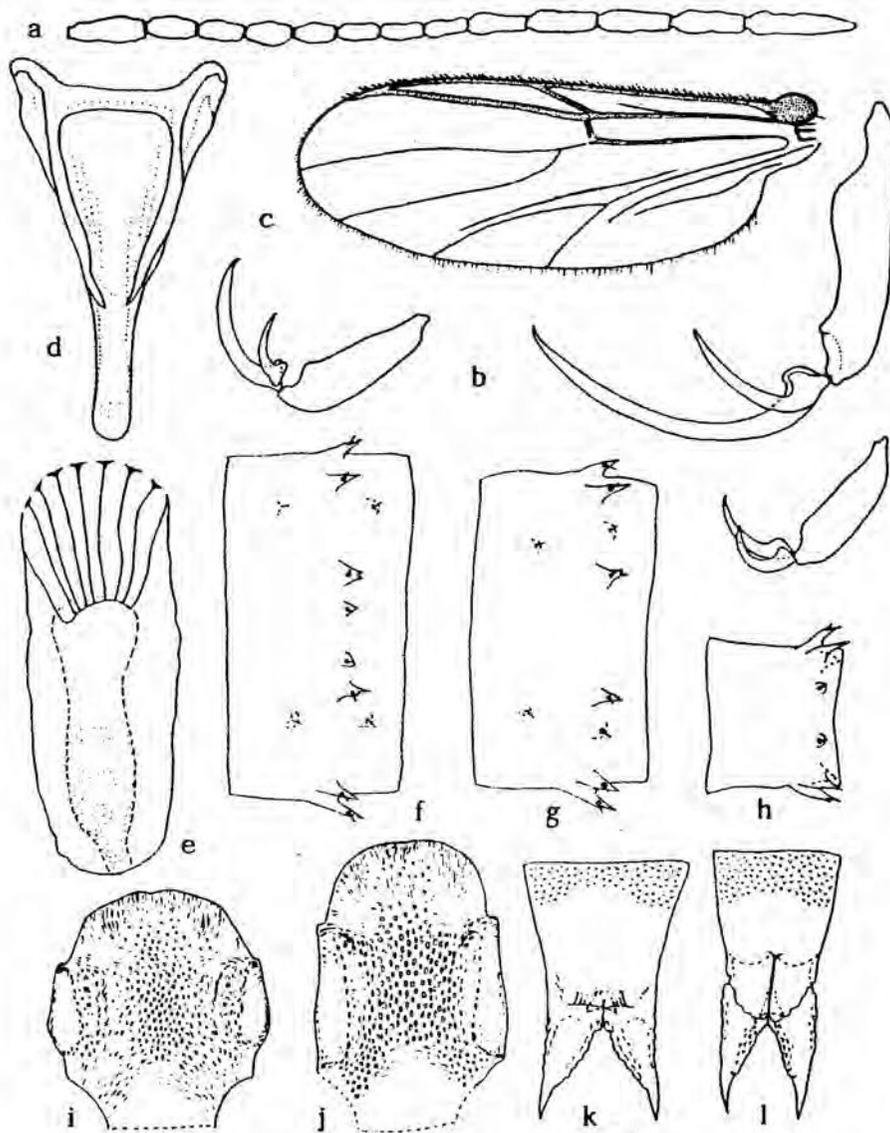
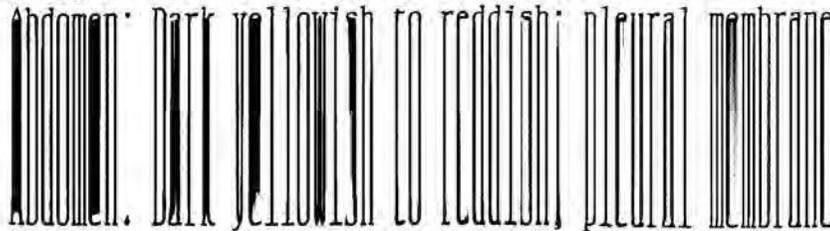


Fig. 1. *Parabezzia alexanderi*: a-c, female; d, male; e-l, pupa; a, flagellum; b, 5th tarsomeres; c, wing; d, aedeagus; e, respiratory organ; f, 3rd abdominal segment; g, 4th abdominal segment; h, 8th abdominal segment; i, female operculum; j, male operculum; k, female terminal segment; l, male terminal segment.

portion of 75-41-22, Rs 56; Rs extending 0.80-0.88 of wing length. Halter stem pale; knob white.



dark reddish to purple. Spermathecae ovoid, subequal with short necks.

Male.- Smaller, similar to female with the usual sexual differences. Proximal 10 flagellomeres brown; plume dark brown. Abdomen brown to reddish brown. Aedeagus (fig. 1d) about twice as long as broad; basal arms poorly developed; distal margins lacking lateral expansions; distal portion about 1/3 of total length.

Pupa.- Dark brown; venter of abdomen grayish brown. Respiratory organ (fig. 1e) about 2.5 times longer than broad; base slightly tapered; distal portion with a double row of 6-9 spiracular papillae. Third abdominal segment (fig. 1f) with a pair of long lateral setiferous tubercles; venter with 2 short bifurcate setiferous sublateral tubercles and 2 short setiferous mesal tubercles; dorsum with 2 pairs of low rounded setiferous lateral tubercles. Fourth abdominal segment (fig. 1g) similar to 3rd except venter lacking mesal tubercles. Eighth abdominal segment (fig. 1h) similar to 4th except dorsum lacking tubercles, and mesal tubercles of venter smaller. Female operculum (fig. 1i) about as long as wide; anterior margin rounded; anterior portion with longitudinal wrinkles; mesal portion with small rounded tubercles, lateral margins with broad raised areas each with 2 minute, mesal setae; posterior portion with transverse wrinkles, margin attached, truncated. Male operculum (fig. 1j) similar to female except as follows: about 1.5 times longer than broad; lateral raised areas of mesal portion longer, setae on anterior edge. Female terminal segment (fig. 1k) about 1.5 times longer than broad; anterior portion with small pointed tubercles; apicolateral processes slightly divergent, surface with sculptured effect, tips not heavily sclerotized. Male terminal segment (fig. 1l) similar to female except as follows: about twice as long as broad; apicolateral processes moderately appressed; ventral processes tightly appressed, wrinkled.

Distribution.- Argentina (province of Misiones), Belize, El Salvador, Mexico, USA (Massachusetts to Florida).

Specimens examined.- Argentina, Misiones, Posadas, 14-XI-1970, C. Porter and L. Stange, 1 female, light trap (collection "Fundación Miguel Lillo", Tucumán); Belize, Nattiveville, Western Highway, 7/8-VII-1968, W.L. Haase, 3 females, 1 male, black light; El Salvador, Cuscatlan, San Pedro Perulapan, XI-1966, F.S. Blanton, 1 female; Mexico, Veracruz, Los Tuxtlas, Río Palma, 5-V-1981, C. and O. Flint, 1 female.

Discussion.- The Nearctic specimens differ from the Neotropical specimens in the coloration of the distal portion of mid and hind femora, which are brown.

Parabezzia balseiroi n. sp.
(Figs. 2-3)

Diagnosis.- A large species of the *alexanderi* group, most closely related to *P. alexanderi*, but differing from that species by the following combination of characters: wing of both sexes hyaline, veins light brown; legs yellow; proximal 1/2 of mid and hind femora dark brown; claws equal on fore and mid legs, slightly unequal on hind leg.

Female.- Wing length 1.28 (1.23-1.34, n=7) mm; breadth 0.48 (0.46-0.52, n=7) mm.

Head: Dark brown; eyes moderately separated above. Antenna (fig. 2a) with bases of proximal 8 flagellomeres pale; AP 16-10-10-10-10-11-11-12-13-14-14-16-18; AR 0.83 (0.79-0.89, n=7). Palpus pale brown; PP 13-16-11; PR 4.05 (3.80-4.50, n=7). Mandible with 9 teeth on inner margin; outer margin with 3-5 small widely spaced teeth.

Thorax: Scutum, scutellum, postscutellum dark brown; scutellum with 8-10 bristles, in addition to numerous small hairs. Legs yellow; coxae, trochanters of mid and hind legs, proximal 1/2 of mid and hind femora dark brown; hind tarsal ratio 2.30 (2.20-2.45, n=7); 5th tarsomeres (fig. 2b) with equal claws on fore and mid legs, slightly unequal on hind leg; mid 5th tarsomere very lar-

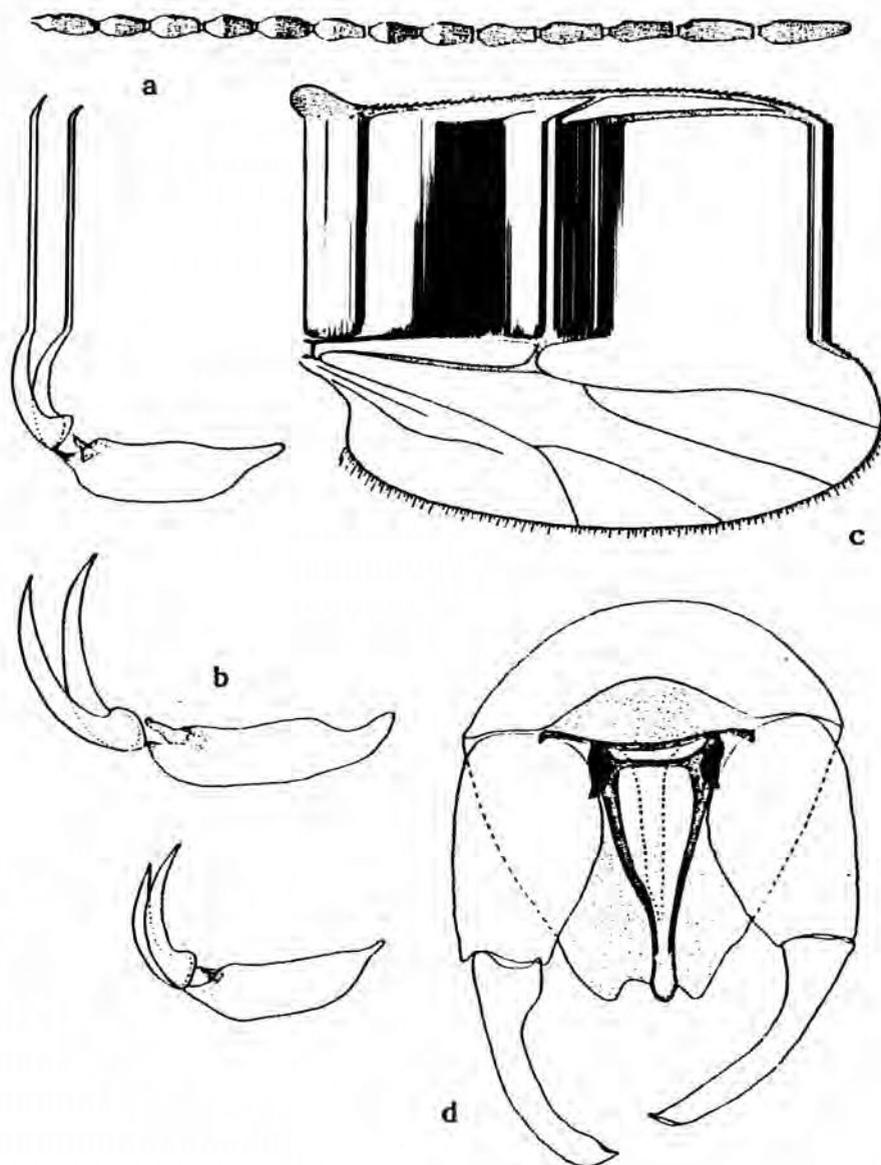


Fig. 2. *Parabezzia balseiroi*, adult: a-c, female; d, male; a, flagellum; b, 5th tarsomeres; c, wing; d, genitalia.

ge, with a low ventral swelling and very long slender claws; CP 16-24-15. Wing (fig. 2c) hyaline, veins light brown; costa with very large, rounded, brown, basal swelling, fringe long and dense; costal sections I-II-III in proportion of 45-25-12, Rs 32; Rs extending 0.78 (0.75-0.81, n=7) of wing length. Halter brownish.

Abdomen: Reddish-brown. Spermathecae slightly unequal, ovoid, with very short necks.

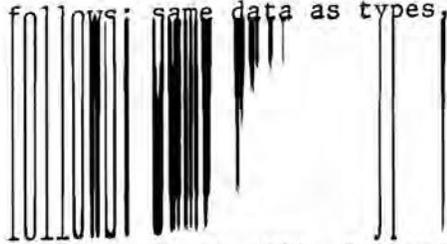
Male.- Similar to female with the usual sexual differences. Lengths of distal 4 flagellomeres in proportion of 20-28-20-26; plume brown.

Genitalia (fig. 2d): Ninth sternum about 4.2 times broader than long, with a shallow caudomedian excavation, membrane spiculate; 9th tergum tapering gradually distally into conical shape, cerci short, ventral surface spiculate distally. Gonocoxite stout, about 1.5 longer than broad; gonostylus slightly longer than gonocoxite, broad basally with curved pointed tip. Aedeagus nearly 2 times longer than broad; basal arms short and heavily sclerotized, distal margins lacking lateral expansions; distal portion about 1/4 of total length. Parameres fused; basal arms well sclerotized, distal portion hyaline.

Pupa.- Dark brown. Respiratory organ (fig. 3a) about 2.5 times longer than broad; distal portion with a double row of 8 spiracular papillae. Third abdominal segment (fig. 3b) with a pair of lateral setiferous tubercles; venter with 2 short somewhat bifurcate setiferous sublateral tubercles and 2 short setiferous mesal tubercles; dorsum with 2 pairs of low rounded setiferous lateral tubercles, as well as 3 mesal smaller tubercles. Fourth abdominal segment (fig. 3c) similar to 3rd except venter lacking mesal tubercles. Eighth abdominal segment (fig. 3d) similar to 4th except dorsum with only one pair of setiferous lateral tubercles, and lacking the small tubercles. Female operculum (fig. 3e) about as long as wide; anterior margin rounded; anterior portion with longitudinal wrinkles; mesal portion with small rounded tubercles, lateral margins with broad raised areas each with 2 small *a.m.* tubercles with tiny setae; posterior portion with transverse wrinkles, margin attached, truncated. Male operculum (fig. 3f) similar to female except as follows: about 1.5 times longer than broad; lateral raised areas of mesal portion longer, setae on anterior edge. Female and male terminal segments as figured.

Distribution.- Argentina (province of Entre Ríos).

Types.- Holotype female and allotype male, Argentina, Entre Ríos, Santa Ana, 23-IX-1984, E. Balseiro-G. Spinelli, as pupa (MLP). Paratypes, 10 females, 15 males, as follows: same data as types, 3 females, 5 males; same data



ta except 9-XI-1984, 7 females, 10 males.

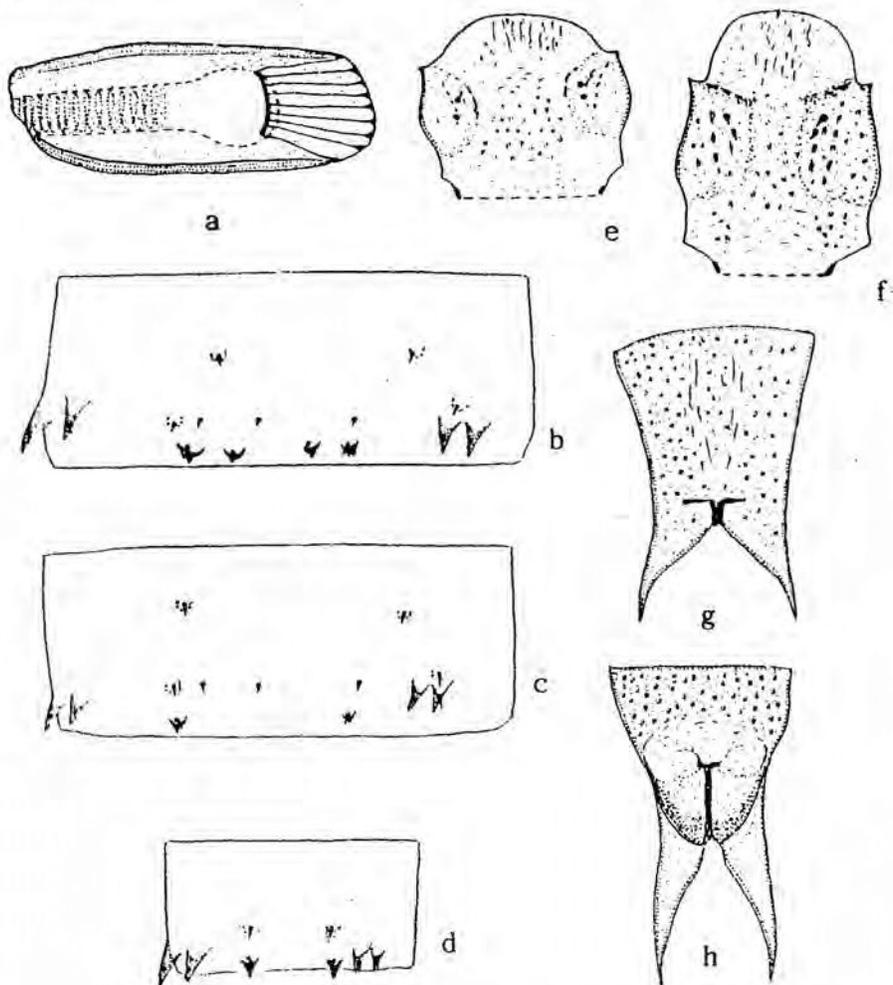


Fig. 3. *Parabezzia balseiroi*, pupa: a, respiratory organ; b, 3rd abdominal segment; c, 4th abdominal segment; d, 8th abdominal segment; e, female operculum; f, male operculum; g, female terminal segment; h, male terminal segment.

Discussion.- This species is similar to *P. alexandri*, from which it can be distinguished by the equal claws of fore and mid legs, by the claws proportions, and by the reduced number of scutellar bristles. The pupa differs in the number of dorsal abdominal tubercles.

The pupae were found on the margin of a small pond associated with filamentous algae.

Parabezzia blantoni Wirth

Parabezzia blantoni Wirth, 1965: 220 (female; Panama);
Wirth, 1974: 42 (in Neotropical catalogue).

Diagnosis.- A medium-sized species; female wing smoky grayish brown, darker anteriorly and along radial veins; basal costal swelling semi-detached; costal section III reaching tip of vein M1; legs dark brown, fore femur and tibia paler brown, mid and hind tibia and tarsi yellowish.

Distribution.- Panama.

Comment.- The original description gave all details necessary for comparison with Neotropical species reported here.

Parabezzia costalis Wirth

(Fig. 4)

Parabezzia costalis Wirth, 1965: 221 (female, male; Panama); Wirth, 1974: 42 (in Neotropical catalogue).

Diagnosis.- A large species; wing hyaline, veins dark brown; r-m crossvein nearly perpendicular; legs dark brown, tarsi slightly paler; 5th tarsomeres of fore and mid legs very large with prominent ventral swelling.

Female.- Wing length 1.30 mm (n=2); breadth 0.57 mm (n=2).

Head: Dark brown; eyes narrowly separated above. Antenna (fig. 4a) entirely dark brown; AP 23-15-15-15-16-16-16-16-26-30-30-33-36; AR 1.17. Palpus dark brown; PP 16-20-18; PR 4.40. Mandible with 9-10 teeth on inner margin; outer margin with 6 small widely spaced teeth.

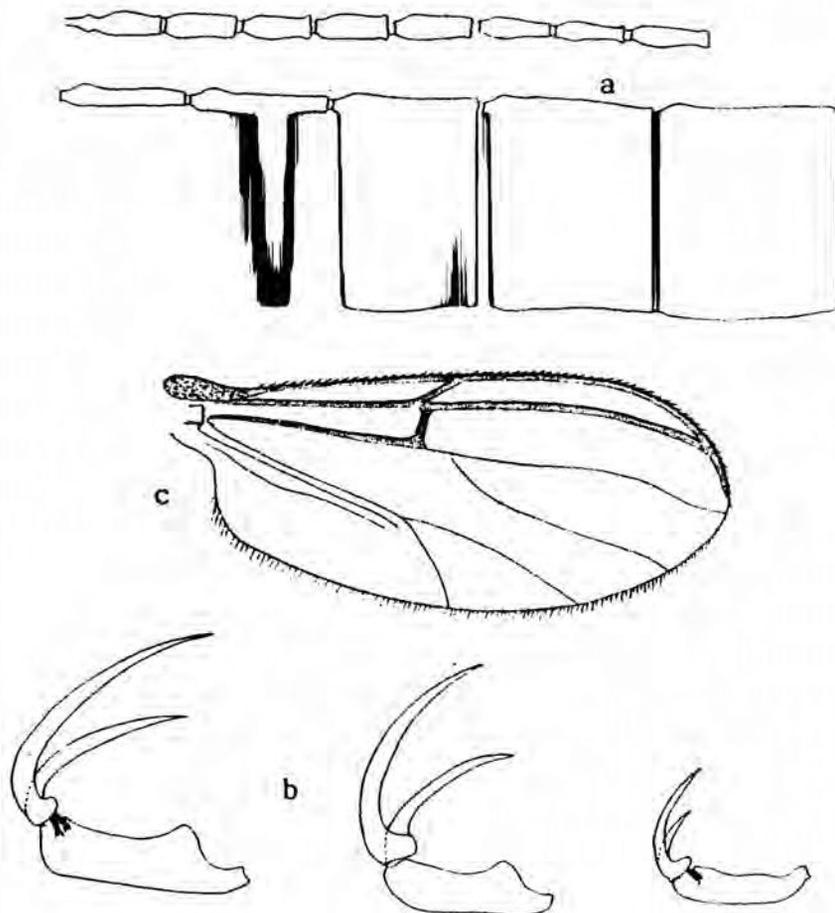


Fig. 4. *Parabezzia costalis*, female: a, flagellum; b, 5th tarsomeres; c, wing.

Thorax: Dark brown; scutum with 7-8 fine presutural and 5 stronger posterolateral setae; scutellum with about 15 bristles. Legs dark brown, tarsi slightly paler; hind tarsal ratio 3.20 (3.10-3.30, n=2); 5th tarsomeres of fore and mid legs very large with prominent ventral swelling; claws (fig. 4b) unequal on all legs, long and slender on fore and mid legs, small on hind leg; CP 55-45-22. Wing (fig. 4c) hyaline, veins dark brown; r-m crossvein nearly perpendicular; costa with large, rounded, brown, basal swelling, fringe short; costal sections I-II-III in proportion of 42-39-10, Rs 42; Rs extending 0.95 (n=2) of wing length. Halter slightly infuscated at base, knob whitish.

Abdomen: Dark brown. Spermathecae very unequal, ovoid with very short necks.

Male.- The original description of the male gave all details necessary for comparison with the known males of other species.

Distribution.- Panama.

Specimens examined.- Panama, Mojinga Swamp, Ft. Sherman, C.Z., 27-VII-1952, F.S. Blanton, 1 female, light trap; same data except 4-IX-1951, 1 female, 1 male; Panama, Loma Borracho, C.Z., VII-1952, F.S. Blanton, 1 male, light trap (all paratypes of the USNM).

Parabazzia spangleri Wirth

Parabazzia spangleri Wirth, 1965: 227 (female; Puerto Rico); Wirth, 1974: 42 (in Neotropical catalogue).

Diagnosis.- A large species of the *alexanderi* group with all femora yellowish; 5th tarsomeres without ventral swelling or tubercles; wing grayish hyaline, radial veins brownish; basal swelling of costa gradually decreasing distally.

Distribution.- Puerto Rico.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

Brunnea Group

A group characterized by the female having wings with very dense costal fringe, the setae arising from base, center and margin of the costa.

Parabazzia arenosa Clastrier and Raccurt

Parabazzia arenosa Clastrier and Raccurt, 1979: 172 (female; Haiti).

Diagnosis.- A medium-sized species of the *brunnea* group; wing slightly infuscated; 5th tarsomere of fore

leg with prominent ventral swelling; claws of fore leg slightly unequal, very unequal on mid and hind legs; scutellum with 4 bristles; 3 presutural and 3 posterolateral

setae.

Distribution.- Haiti.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

Parabezzia brunnea Wirth

(Fig. 5)

Parabezzia brunnea Wirth, 1965: 220 (female; Panama);
Wirth, 1974: 42 (in Neotropical catalogue).

Diagnosis.- A large species; wing of both sexes infuscated, anterior veins brown; r-m crossvein nearly perpendicular; 4-6 large setae on costa proximad of basal arculus; 5th tarsomeres of mid and hind legs with sharp, ventral tubercles, and claws with a single talon.

Female.- Wing length 1.24 (1.22-1.26, n=2) mm;
breadth 0.52 (0.51-0.53, n=2) mm.

Head: Dark brown; eyes separated by a distance equal to diameter of 2 ommatidial facets. Antenna (fig. 5a) entirely brown; AP 15-11-11-11-12-13-15-14-21-22-25-25-26; AR 1.19 (1.16-1.21, n=2). Palpus brown; PP 13-16-14; PR 4.45 (4.00-4.90, n=2). Mandible with 8-10 teeth on inner margin; outer margin with 5-6 small widely spaced teeth.

Thorax: Scutum, scutellum, postscutellum dark brown; scutum with 7-8 presutural and 7-9 posterolateral setae; scutellum not in position to count the number of bristles. Legs dark brown; proximal 4 tarsomeres yellowish; hind tarsal ratio 2.70 (n=2); 5th tarsomeres of mid and hind legs each with 2-3 distinctive sharp brown ventral tubercles; claws (fig. 5b) small, subequal on fore leg, only a single talon present on mid and hind claws; CP 13-20-22. Wing (fig. 5c) infuscated, anterior veins brown; r-m crossvein nearly perpendicular; long costal fringe, the setae arising from base, center and margin of the costa (fig. 5d); 4-6 large setae on costa proximad of ba-

sal arculus; costal sections I-II-III in proportion of 47-30-8; Rs 40; Rs extending 0.96 of wing length. Halter with pale brown knob.

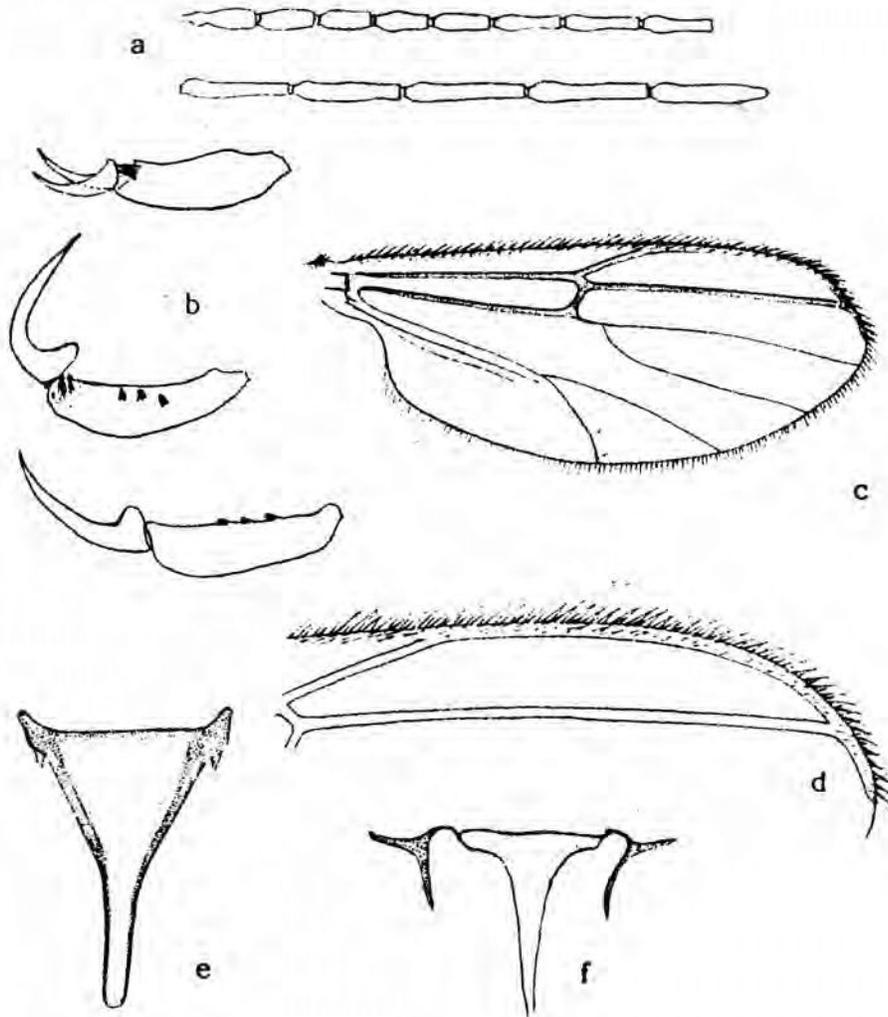
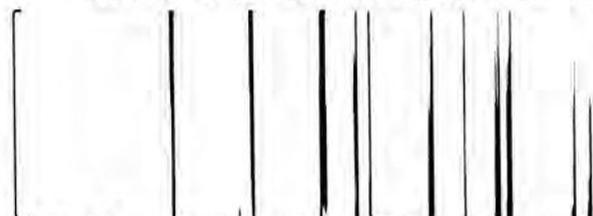


Fig. 5. *Parabezzia brunnea*: a-d, female; e-f, male; a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing; e, aedeagus; f, parameres.

Abdomen: Dark-reddish-brown. Spermathecae spheroid, subequal, apparently lacking necks.

Male.- Similar to female with the usual sexual dif-



ferences. Lengths of distal 4 flagellomeres in proportion of 19-34-34-37; plume brown.

Genitalia: Ninth sternum about 2.8 times broader than long, without caudomedian excavation; 9th tergum short, cerci broad, ventral surface spiculate distally. Gonocoxite stout, about 1.2 times longer than broad; gonostylus slightly longer than gonocoxite, broad basally, curved distally. Aedeagus (fig. 5e) 1.3 times longer than broad; basal arms short, distal margins lacking lateral expansions; distal portion about 1/2 of total length. Parameres (fig. 5f) fused; basal arms heavily sclerotized, each with a pointed caudomesal expansion; distal portion broad, lightly sclerotized.

Distribution.- Belize, Panama.

Specimens examined.- Belize, Cayo District, Western Hwy MP66, VI-1969, W. and D. Hasse, 1 female, light trap; same data except 12-VII-1969, 1 female; Panama, Gamboa, C.Z., Pipeline Rd., VII-1967, W.W. Wirth, 1 male, reared from stream margin.

Discussion.- This species is readily distinguished from other congeneric species by the absence of the 2nd talon on mid and hind claws, and by the number of setae (4-6) on costa proximad of basal arculus.

This is the first description of the male of *P. brunnea*.

Parabezzia caribbeana Clastrier and Raccurt
Parabezzia caribbeana Clastrier and Raccurt, 1979: 173
(female; Haiti).

Diagnosis.- A medium-sized species of the *brunnea* group, most closely related to *P. arenosa*; wing slightly infuscated; 5th tarsomere of fore leg with prominent ventral swelling; claws very unequal on all legs; scutellum with 6 bristles; 3-4 presutural and 4-5 posterolateral setae.

Distribution.- Haiti.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

Parabezzia fuscipennis Wirth

Parabezzia fuscipennis Wirth, 1965: 223 (female; Panama);
Wirth, 1974: 42 (in Neotropical catalogue).

Diagnosis.- A large species of the *brunnea* group; wing very darkly brownish infuscated; legs brownish; hind tarsal ratio 3.60; claws long, moderately stout, very unequal on all legs, the smaller talon about 1/2 as long as the longer talon.

Distribution.- Panama.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

Unguis Group

Characterized by females having wings with short costal fringe, the setae very short on distal portion, far apart and arising near center of vein.

Parabezzia clastrieri n. sp.

(Fig. 6)

Diagnosis.- A small species of the *unguis* group distinguished by the following combination of characters: wing hyaline, veins brown; r-m crossvein at an oblique angle, broken at base; distal costal fringe with setae shorter than width of costa; claws equal on fore and hind legs, subequal on mid leg.

Female.- Wing length 0.90 mm (n=2); breadth 0.36 mm (n=2).

Head: Brown; eyes moderately separated above. Antenna (fig. 6a) entirely brown; AP 12-8-8-9-9-9-9-16-17-18-18-18; AR 1.18 (1.17-1.19, n=2). Palpus pale brown;

PP 10-12-12, PR 3.50 (3.00-4.00, n=2). Mandible with 8 teeth on inner margin.

Thorax: Brown. Scutum with 1 presutural and 3 poste-

rolateral setae; scutellum not in position to count the number of bristles. Legs brown, proximal 3 tarsomeres slightly pale; hind tarsal ratio 2.50 (n=2); 5th tarsomeres without prominent ventral swelling; claws medium-sized (fig. 6b), equal on fore and hind legs, subequal on mid leg; CP 20-25-15. Wing (fig. 6c) hyaline, veins brown; r-m crossvein at an oblique angle, broken at base; costal fringe short, very short on distal portion, the setae far apart and arising near center of vein (fig. 6d);

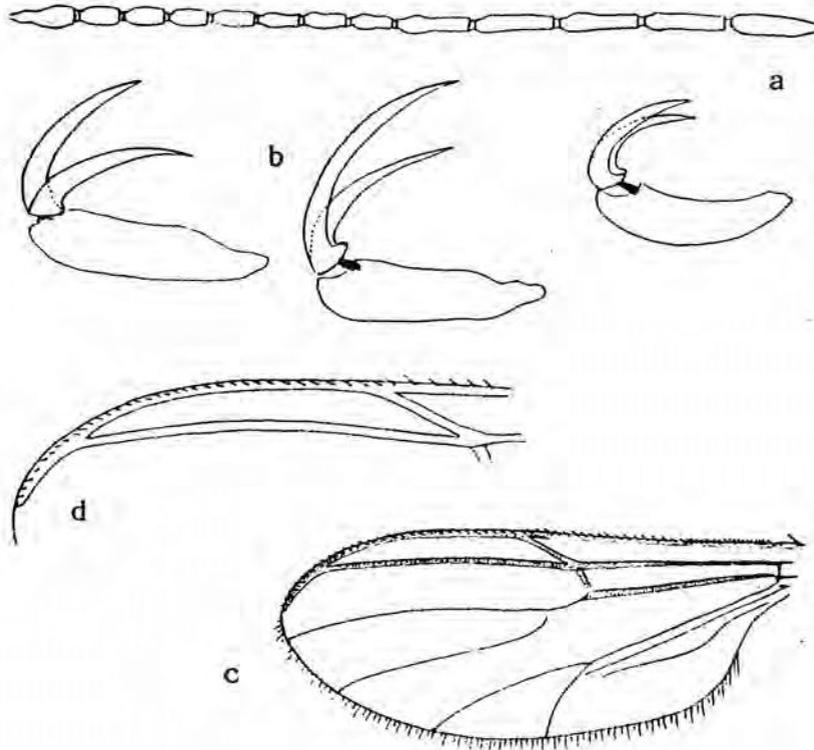


Fig. 6. *Parabezzia clastrieri*, female: a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing.

1 seta on costa proximal of basal arcus; costal sections I-II-III in proportion of 30-24-7; Rs 30; Rs extending 0.93 of wing length. Halter pale brown.

Abdomen: Reddish-brown. Two oval, unequal spermathecae with short necks.

Male.- Unknown.

Distribution.- Belize, El Salvador.

Types.- Holotype female, El Salvador, Moncagua, VIII-1967, F.S. Blanton. Paratype female, Belize, Cayo District, Western Hwy MP66, VI-1969, W. and D. Hasse, light trap.

Discussion.- *Parabezzia clastrieri* is similar to the nearctic species *P. atchleyi* Grogan and Wirth, but differs in the costal sections proportions. In addition, the claws of *clastrieri* are equal on fore and hind legs and subequal on mid leg; in *atchleyi* the claws are equal on mid and hind legs, and slightly unequal on fore leg.

Parabezzia hondurensis n. sp.

(Fig. 7)

Diagnosis.- A medium-sized species of the *unguis* group distinguished by the following combination of characters: wing of both sexes hyaline, veins brown; legs dark brown, proximal 3 tarsomeres pale; claws unequal on fore and hind legs, subequal on mid leg; halter dark brown.

Female.- Wing length 1.00 (0.98-1.02, n=2) mm; breadth 0.42 (0.41-0.43, n=2) mm.

Head: Dark brown; eyes narrowly separated above. Antenna (fig. 7a) entirely brown; AP 12-9-9-9-9-9-11-11-16-16-17-17-20; AR 1.14 (1.08-1.20, n=2). Palpus pale brown; PP 9-10-11; PR 2.50 (n=2). Mandible with 9 teeth on inner margin; outer margin with 4 small widely spaced teeth.

Thorax: Dark brown. Scutum with 1 presutural and 3 posterolateral setae; scutellum apparently with 4 bristles. Legs dark brown, proximal 3 tarsomeres pale; hind tarsal ratio 2.75 (n=2); 5th tarsomeres long and slender, without prominent ventral swelling; claws medium-sized

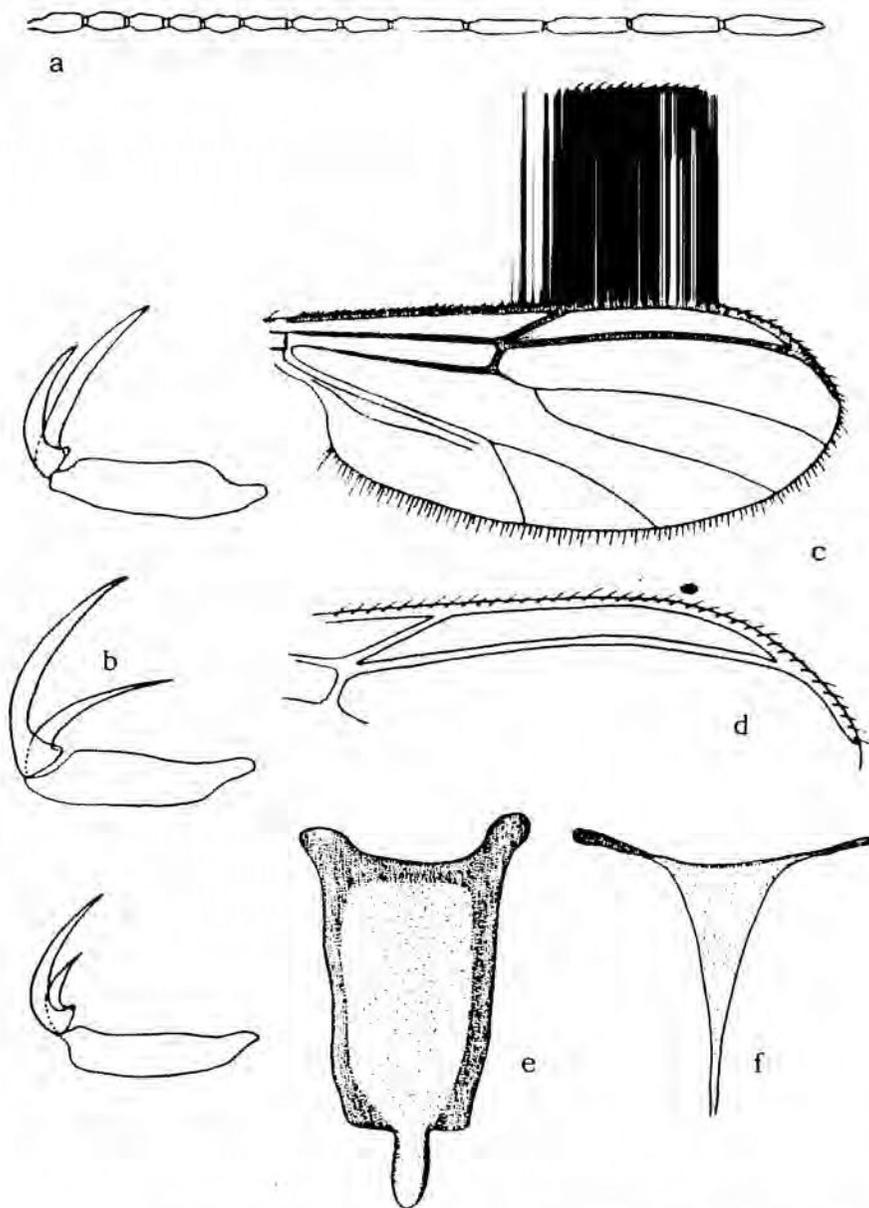


Fig. 7. *Parabezzia hondurensis*: a-d, female; e-f, male; a, flagellum; b, 5th tarsomere; c, wing; d, radial cell of wing; e, aedeagus; f, parameres.

(fig. 7b), unequal (subequal on mid leg); CP 22-26-16. Wing (fig. 7c) hyaline, veins brown; r-m crossvein at slight oblique angle; costal fringe short, the length of setae on distal portion about the width of costa and arising near center of vein (fig. 7d); 1 seta on costa proximad of basal arculus; costal sections I-II-III in

proportion of 33-26-8; Rs 34; Rs extending 0.91 (0.90-0.92, n=2) of wing length. Halter dark brown.

Abdomen: Reddish-brown. Spermathecae unequal, ovoid with short necks.

Male.- Similar to female with the usual sexual differences. Lengths of distal 4 flagellomeres in proportion of 13-27-21-27; plume brown.

Genitalia: Ninth sternum about 2.4 times broader than long, with caudomedian excavation; 9th tergum tapering, cerci short and rounded. Gonocoxite stout, about 1.5 longer than broad; gonostylus about as long as gonocoxite, nearly straight, with pointed tip. Aedeagus (fig. 7e) nearly twice as long as broad; basal arms short and heavily sclerotized, distal margins with truncate lateral expansions; distal portion short, about 1/5 of total length. Parameres (fig. 7f) fused, nearly identical with those of *P. raccurti*.

Distribution.- Honduras.

Types.- Holotype female, allotype male, Honduras, Copan, Santa Rosa, X-1966, F.S. Blanton. Paratype female, same data as types.

Discussion.- This species is similar to *P. newguis*, from which it can be distinguished by the much longer costal section III, the unequal claws on fore and hind legs, and by the dark brown halter.

The lengths and proportions of the claws resemble those of *P. unguis*, but this species differs especially by the costal sections proportions and by the dark brown halter. The male aedeagus of *P. unguis* is also different, especially the distal portion which is much shorter in *P. hondurensis*, with broad, truncate lateral margins.

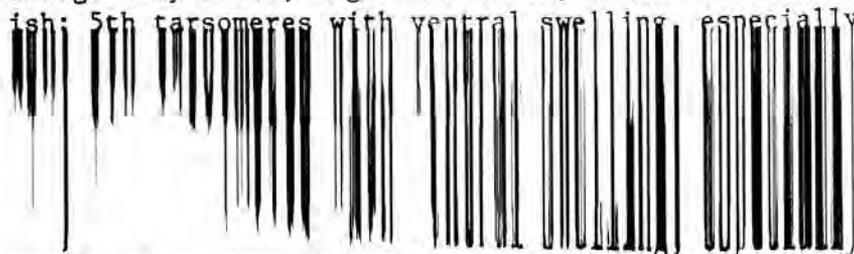
Parabezzia jamaicensis Wirth

Parabezzia petiolata Malloch; Wirth, 1952b: 24, misident., in part (Jamaica record of *petiolata*).

Parabezzia jamaicensis Wirth, 1965: 224 (female; Jamaica); Wirth, 1974: 42 (in Neotropical catalogue).

Diagnosis.- A medium-sized species of the *unguis*

group distinguished by the following combination of characters: wing grayish hyaline, veins brownish; costal fringe very short; legs dark brown, tarsomeres 1-3 whitish; 5th tarsomeres with ventral swelling, especially



prominent on fore leg; claws very unequal on all legs.

Distribution.- Jamaica.

Comment.- The description and figures by Wirth (1965) gave all details necessary for comparison with the Neotropical species reported here.

Parabezzia neunguis Grogan and Wirth
(Fig. 8)

Parabezzia neunguis Grogan and Wirth, 1977: 65 (female; Maryland, Virginia).

Diagnosis.- A small species of the *unguis* group; females with costal fringe short, distally the setae longer than width of costa and arising near center of vein; claws medium-sized, fore and hind claws equal, mid claws slightly unequal; scutellum with 3-4 bristles.

Female.- Wing length 0.86 mm; breadth 0.38 mm

Head: Dark brown; eyes moderately separated above. Antenna (fig. 8a) entirely brown; AP 12-8-9-8-8-8-8-13-14-15-17-17; AR 1.10. Palpus pale brown; PP 9-13-12; PR 4.30. Mandible with 10 teeth on inner margin; outer margin with 4 small widely spaced teeth.

Thorax: Dark brown. Scutum with 1 presutural and 3 posterolateral setae; scutellum apparently with 4 bristles. Legs dark brown, proximal 3 tarsomeres pale; hind tarsal ratio 2.20; 5th tarsomeres without prominent ventral swelling; claws (fig. 8b) medium-sized, equal on fore and hind legs, slightly unequal on mid leg; CP 18-20-14. Wing (fig. 8c) hyaline, veins brown; r-m crossvein at an oblique angle; costal fringe short, the setae distally longer than width of costa and arising near center of vein (fig. 8d); 1 seta on costa proximad of basal arcus; costal sections I-II-III in proportion of 27-24-6; R_s 30; R_s extending 0.94 of wing length. Halter pale brown.

Abdomen: Reddish-brown. Two spermathecae slightly

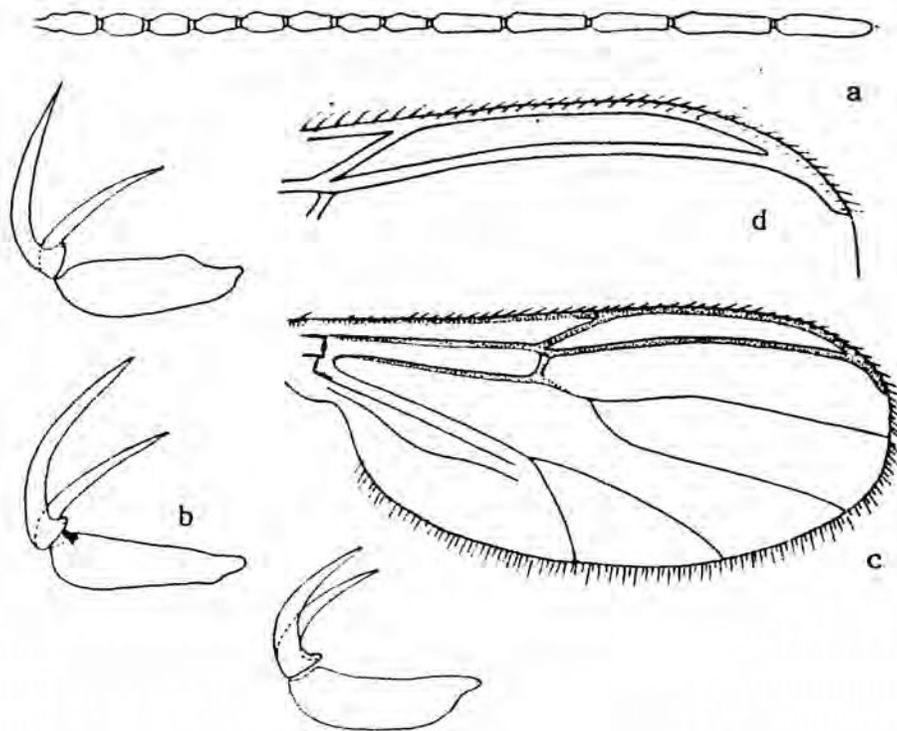


Fig. 8. *Parabazzia neunguis*, female; a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing.

unequal, ovoid, apparently without necks.

Male.- Unknown.

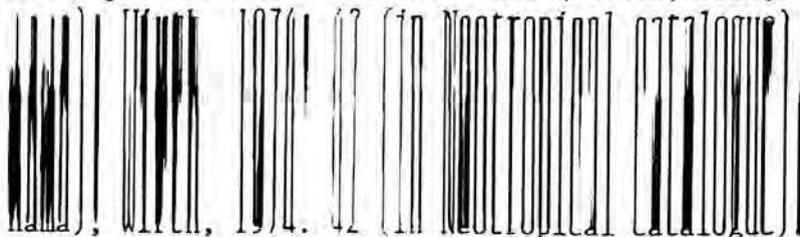
Distribution.- El Salvador, U.S.A. (Maryland and Virginia).

Specimen examined.- El Salvador, Cuscatlan, San Pedro Perulapan, IX-1966, F.S. Blanton.

Discussion.- The single specimen described here agrees with the original description, only except by the halter knob coloration, which is white in the nearctic specimens.

Parabezzia panamensis Wirth

Parabezzia panamensis Wirth, 1965: 225 (female, male; Pa-



Diagnosis.- A small species; wing grayish hyaline, the anterior veins brownish; radial cell moderately brown; legs yellowish brown; femora brownish on fore and mid legs, brownish black on hind leg; tarsomeres 1-4 yellowish; claws unequal on all legs, the shorter talon about 2/3 as long as the longer talon on each leg.

Specimens examined.- Panama, Camaron, C.Z., 23-VI-1952, F.S. Blanton, 2 males, light trap (paratypes USNM).

Distribution.- Panama.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

Parabezzia pseudunguis n. sp.

(Fig. 9)

Parabezzia unguis Wirth; misident., in part; Wirth, 1965: 228.

Diagnosis.- A medium-sized species of the *unguis* group most closely related to *P. unguis*, from which it can be distinguished by the nearly absent costal fringe on costal sections II-III.

Female.- Wing length 1.15 mm; breadth 0.50 mm.

Head: Brown. Antennal pedicel dark brown; flagellum (fig. 9a) slender, entirely brown; AP 20-13-14-14-13-13-13-23-24-26-28-31; AR 1.17. Palpus dark brown; PP 12-17-17; PR 4.25. Mandible with 9 teeth on inner margin.

Thorax: Scutum, scutellum, postscutellum dark brown; 5 presutural setae; scutellum with 8 bristles. Legs dark brown; tarsi yellowish; 5th tarsomeres and claws nearly identical with those described for *P. unguis*. Wing hyaline, veins brown; costal fringe very short, nearly absent on costal sections II-III (fig. 9b); venation nearly identical with those of *P. unguis*. Halter stem pale, knob whitish.

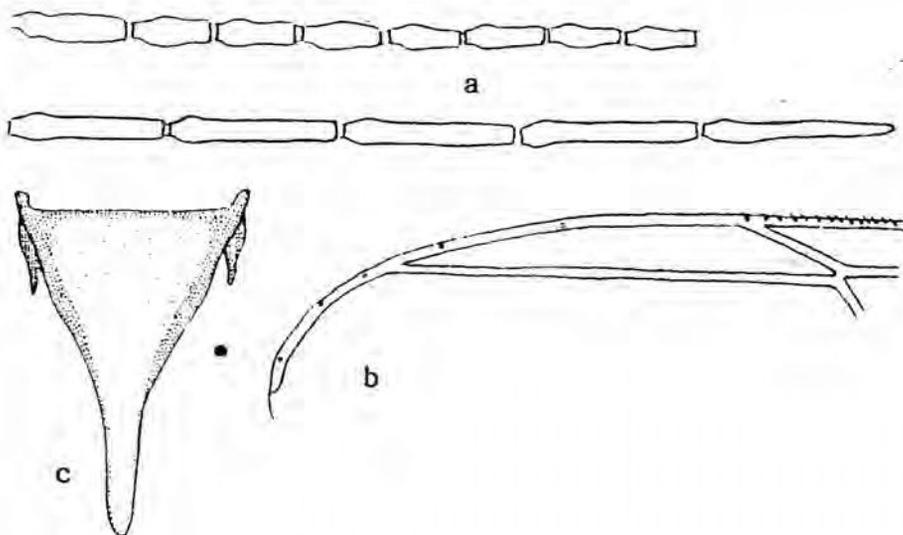


Fig. 9. *Parabezzia pseudunguis*: a-b, female; c, male; a, flagellum; b, radial cell of wing; c, aedeagus.

Abdomen: Brown to reddish-brown. Two unequal, oval spermathecae, without necks.

Male.- Similar to female with the usual sexual differences. Antenna missing. Wing damaged.

Genitalia: Ninth sternum about 2.3 times broader than long, without caudomedian excavation; 9th tergum tapering, cerci short. Gonocoxite stout, as long as broad; gonostylus slightly longer than gonocoxite, curved with pointed tip. Aedeagus (fig. 9c) about 1.5 times longer than broad; basal arms short, distal margins lacking lateral expansions; distal portion about 1/3 of total length. Parameres fused, as figured.

Distribution.- Panama.

Types.- Holotype female, allotype male, Panama, C.Z., Loma Borracho, VII-1952, F.S. Blanton, light trap.

Discussion.- These specimens were designated as

paratypes of *P. unguis* by Wirth (1952). *P. pseudunguis* differs from *P. unguis* by its peculiar costal fringe, which is nearly absent on costal sections II-III. In



addition, the distal portion of the aedeagus is shorter, and the distal margins lack lateral expansions.

Parabezzia unguis Wirth
(Fig. 10)

Parabezzia unguis Wirth, 1965: 228 (female, male; Arizona and Texas to Panama); Wirth, 1974: 42 (in Neotropical catalogue); Grogan and Wirth, 1977: 62 (female, male; distr.).

Diagnosis.- A medium-sized species; females with short costal fringe, the setae on the distal portion very short, arising near center of vein; claws large and unequal; scutellum with 6 bristles; distal portion of aedeagus long, about 1/2 of total length; halter stem pale, knob whitish.

Female.- Wing length 1.06 (0.88-1.16, n=5) mm; breadth 0.43 (0.36-0.49, n=5) mm.

Head: Brown. Antennal pedicel dark brown; flagellum (fig. 10a) moderately slender, bases of flagellomeres pale; AP 13-10-9-9-9-9-9-9-14-15-16-16-18; AR 1.04 (0.98-1.10, n=5). Palpus with proximal 3 segments light brown, distal segments brown; PP 11-14-12; PR 4.02 (3.75-4.33, n=4). Mandible with 7-9 teeth on inner margin.

Thorax: Scutum, scutellum, postscutellum dark brown; scutellum with 6 bristles. Legs brown; proximal 3 tarsomeres pale; 5th tarsomeres (fig. 10b) long and slender, fore and mid with slight ventral swelling, claws large, unequal; CP 25-30-20. Wing (fig. 10c) hyaline, veins brown; costa with slight basal thickening, fringe short, very short on distal portion, the setae arising near center of vein (fig. 10d), costa extending nearly to vein M₁; costal sections I-II-III in proportion of 65-34-20, Rs 68; Rs extending 0.81-0.88 of wing length. Halter stem pale, knob whitish.

Abdomen: Brown to reddish-brown. Spermathecae spheroid, subequal, apparently lacking necks.

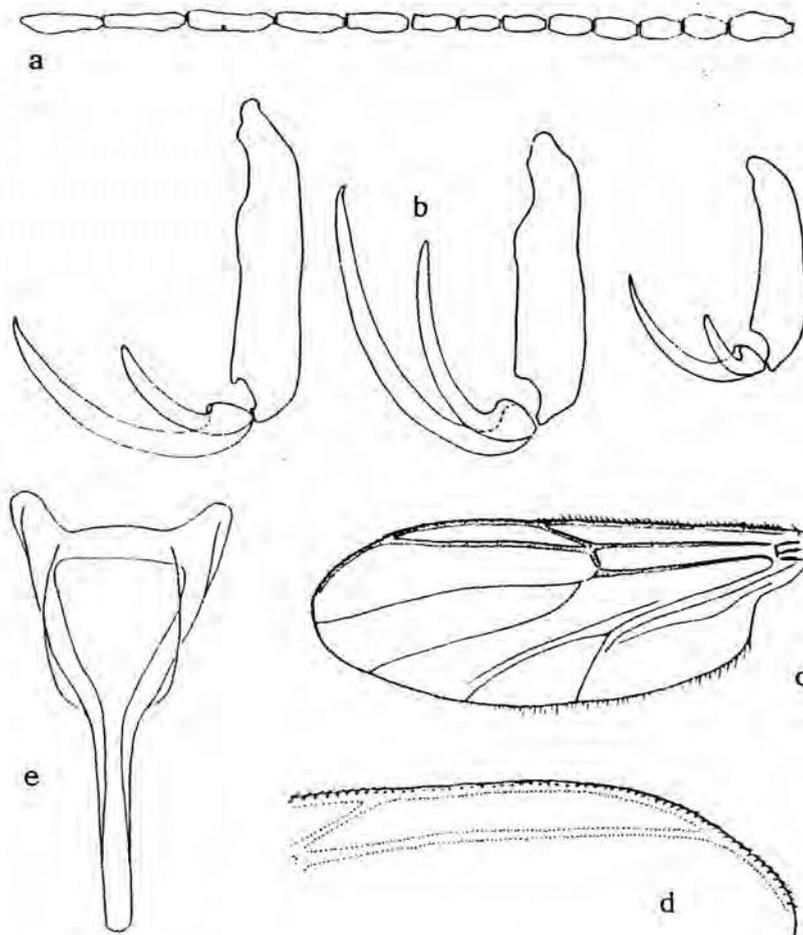
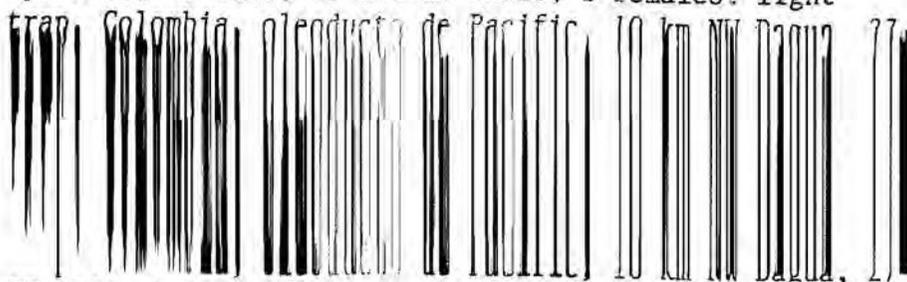


Fig. 10. *Parabezzia unguis*: a-d, female; e, male; a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing; e, aedeagus.

Male.- Smaller, similar to female with the usual sexual differences. Proximal 10 flagellomeres pale; plume light brown. Aedeagus (fig. 10e) about twice as long as broad; distal portion about 1/2 of total length; distal margins with narrow lateral expansions.

Distribution.- From Arizona and Texas to Colombia.

Specimens examined.- Belize, Cayo District, Western Hwy MP66, VI-1969, W. and D. Hasse, 3 females, light trap



Colombia, Olancho de Pacifico, Laguna, II-1967, R.E. Woodruff, 1 female. El Salvador, San Vicente, Santo Domingo, 22-XI-1966, F.S. Blanton, 2 females, 1 male; Cuscatlan, San Pedro Perulapan, XI/XII-1966, F.S. Blanton, 1 female. Honduras, Comayagua, Comayagua, VIII-1969, F.S. Blanton, 1 female. Panama, Camaron, C.Z., 23-VI-1952, F.S. Blanton, 2 females, light trap (paratypes USNM); Loma Borracho, C.Z., VII-1952, F.S. Blanton, 1 female, 1 male, light trap (paratypes USNM); Cerro Campana, VII-1967, F.S. Blanton, 1 male, light trap.

Uncinata Group

A group characterized by the females having wings with long costal fringe, the setae arising from the margin of the costa.

Parabezzia brasiliensis n. sp.

(Fig. 11)

Diagnosis.- A small species of the *uncinata* group; wing hyaline, veins dark brown; radial cell short and very narrow; scutum with several strong, erect setae; 4 presutural and 4 posterolateral setae.

Female.- Wing length 0.92 mm; breadth 0.38 mm.

Head: Dark brown; eyes moderately separated above. Antenna (fig. 11a) entirely dark brown; AP 14-10-10-10-10-10-10-16-16-18-18-20; AR 1.05. Palpus brown; PP 10-15-17; PR 4.00. Mandible with 9 teeth on inner margin; outer margin with 3-5 small widely spaced teeth.

Thorax: Dark brown. Scutum with several strong, erect setae; 4 presutural and 4 posterolateral setae. Legs dark brown, proximal 3 tarsomeres yellowish brown; hind tarsal ratio 2.75; 5th tarsomeres (fig. 11b) of fore and hind legs with prominent ventral swelling; claws (fig. 11b) very unequal, those of hind leg longest; CP 22-20-28. Wing (fig. 11c) hyaline, veins dark brown; radial cell short and very narrow; costal fringe long, most

densely distally (fig. 11d); 2 setae on costa proximad of basal arculus; costal sections I-II-III in proportion of 27-21-14, Rs 25; Rs extending 0.80 of wing length. Halter with infuscated stem, knob pale brown.

Abdomen: Dark brown. Two rounded, subequal spermathecae with short necks and minute hyaline perforations.

Male.- Unknown.

Distribution.- Brasil (Mato Grosso).

Type.- Holotype female, Brazil, Mato Grosso, Cuiaba, 30-IV-1972, W.H. Whitcomb.

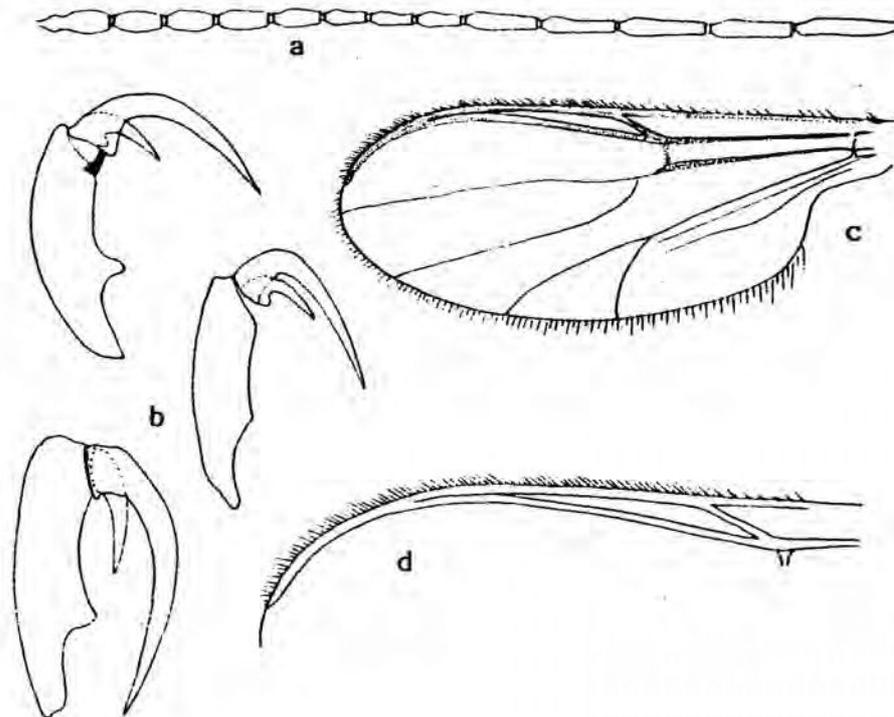
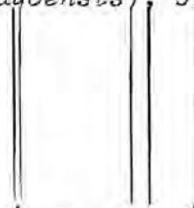


Fig. 11. *Parabezzia brasiliensis*, female: a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing.

Discussion.- This species is very similar to *P. cayoensis*, from which it differs by the 5th tarsomeres of the fore and hind legs with prominent ventral swelling (swelling present only on fore leg in *P. cayoensis*), by



the presence of 2 setae on costa proximad of basal arculus (only 1 in *P. cayoensis*), and by its spermathecae with minute hyaline perforations.

Parabezzia cayoensis n. sp.
(Fig. 12)

Diagnosis.- A small species of the *uncinata* group; wing hyaline, radial cell short and very narrow; costal fringe more abundant distally; 5th tarsomere of fore leg with prominent ventral swelling; claws unequal, especially so on mid leg.

Female.- Wing length 0.88 mm; breadth 0.37 mm.

Head: Dark brown; eyes separated by a distance equal to diameter of 3 ommatidial facets. Antenna (fig. 12a) entirely dark brown; AP 13-10-10-9-9-9-8-9-15-16-16-17-20; AR 1.09. Palpus brown; PP 9-13-16; PR 3.25. Mandible with 10 teeth on inner margin.

Thorax: Dark brown. Scutum with 2 presutural and 4 posterolateral setae; scutellum with 7 strong bristles. Legs dark brown, proximal 3 tarsomeres pale brown; hind tarsal ratio 2.40; 5th tarsomere of fore leg with prominent ventral swelling; claws (fig. 12b) small, unequal, especially so on mid leg; CP 19-20-19. Wing (fig. 12c) hyaline, veins brown; r-m crossvein at an oblique angle; radial cell short and very narrow; costa with somewhat long fringe, more abundant distally (fig. 12d); 1 seta on costa proximad of basal arculus; costal sections I-II-III in proportion of 25-22-12, Rs 26; Rs extending 0.80 of wing length. Halter missing.

Abdomen: Reddish-brown. Two subequal, ovoid spermathecae without necks.

Male.- Unknown.

Distribution.- Belize.

Type.- Holotype female, Belize, Cayo District, Wes-

tern Hwy MP66, VI-1966, W. and D. Hasse, light trap.

Discussion.- This species is very similar to *P. brasiliensis*. Characters for separating the 2 species are given in the key and in the discussion under the latter species.

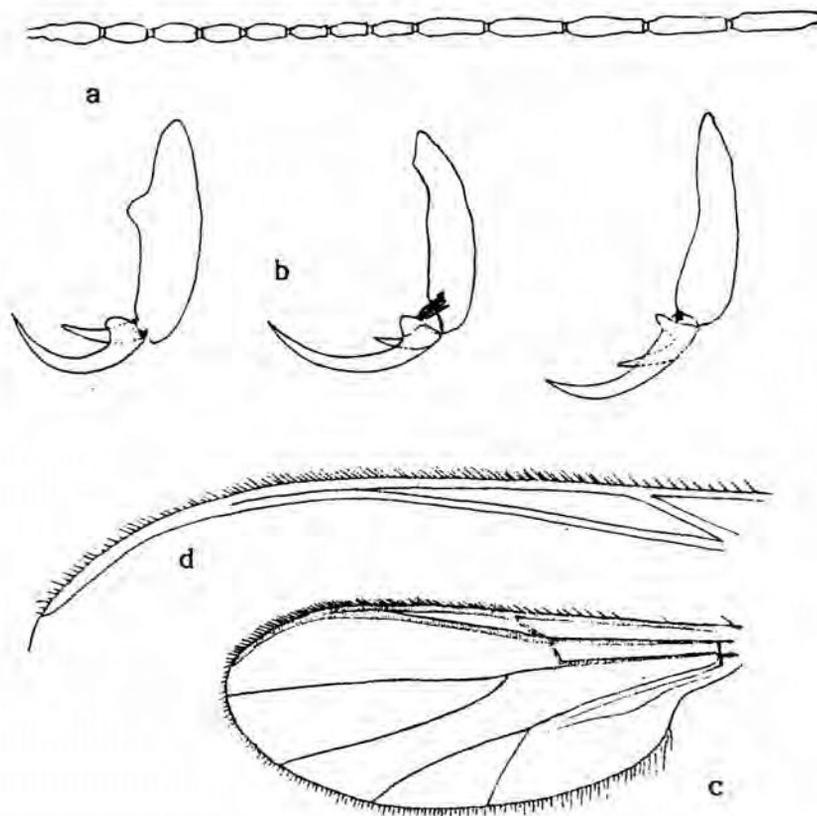


Fig. 12. *Parabezzia cayoensis*, female: a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing.

Parabezzia haitiensis Clastrier and Raccurt
Parabezzia haitiensis Clastrier and Raccurt, 1979: 170
(female; Haiti).

Diagnosis.- A medium-sized species of the *uncinata* group distinguished by the following combination of characters: wing slightly infuscated, veins brown; claws equal on all legs; scutum with 3-4 presutural and 5-6 posterolateral setae; 1 seta on costa proximad of basal arculus.

Distribution.- Haiti.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

Parabezzia inaequalis n. sp.
(Fig. 13)

Diagnosis.- A small species of the *uncinata* group, readily distinguished from other members of this group by the very unequal claws of hind leg, the longest talon 1.5 x as long as 5th tarsomere; legs dark brown, fore leg slightly paler; basal arms of parameres very slender and heavily sclerotized.

Female.- Wing length 0.93 mm; breadth 0.40 mm.

Head: Light brown; eyes narrowly separated above. Antenna (fig. 13a) entirely brown; AP 13-10-11-11-11-10-10-17-18-20-20-24; AR 1.14. Palpus pale brown; PP 11-13-15; PR 3.25. Mandible with 8 teeth on inner margin; outer margin with 4 small widely spaced teeth.

Thorax: Brown. Scutum with 3 presutural and 4 posterolateral setae; scutellum apparently with 6 bristles. Legs dark brown, fore leg slightly paler; tarsi pale brown; hind tarsal ratio 2.60; 5th tarsomeres without ventral swelling; claws (fig. 13b) unequal on fore and mid legs, very unequal on hind leg, the longest talon 1.5 x as long as 5th tarsomere; CP 21-21-51. Wing (fig. 13c) hyaline, veins light brown; r-m crossvein at an oblique angle; costa with long fringe, more numerous distally (fig. 13d); 2 setae on costa proximad of basal ar-

culus; costal sections I-II-III in proportion of 27-28-4, Rs 32; Rs extending 0.94 of wing length. Halter pale brown.

Abdomen: Reddish-brown. Two slightly unequal spermathecae with short necks.

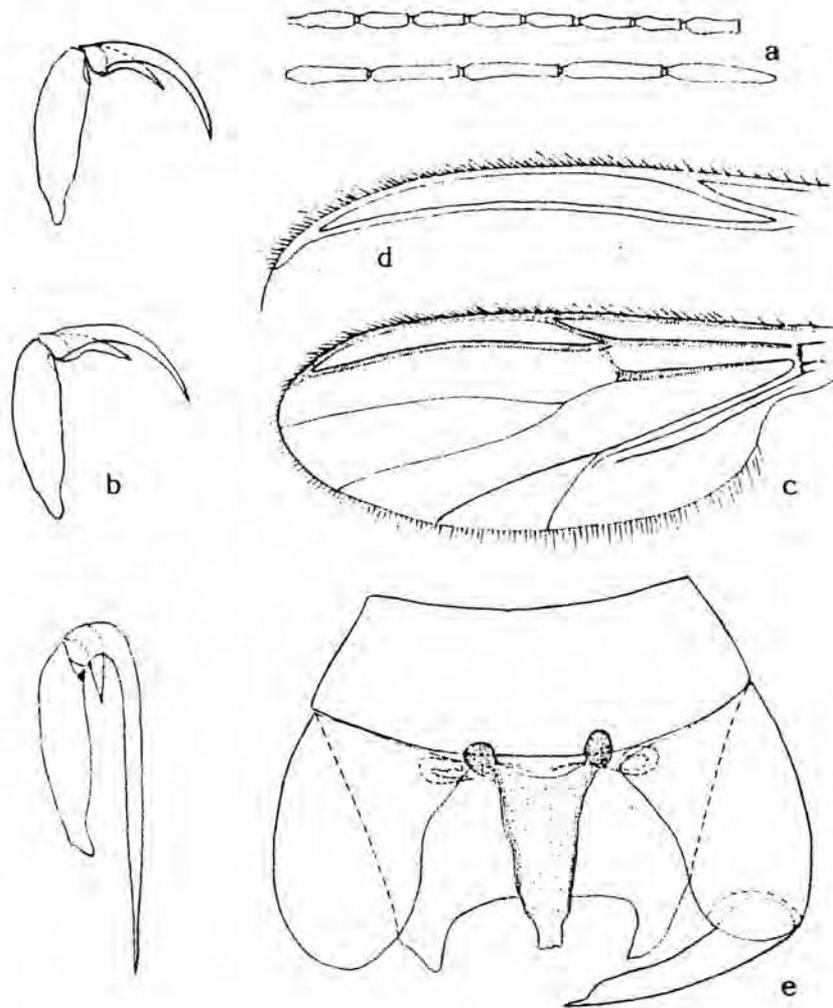
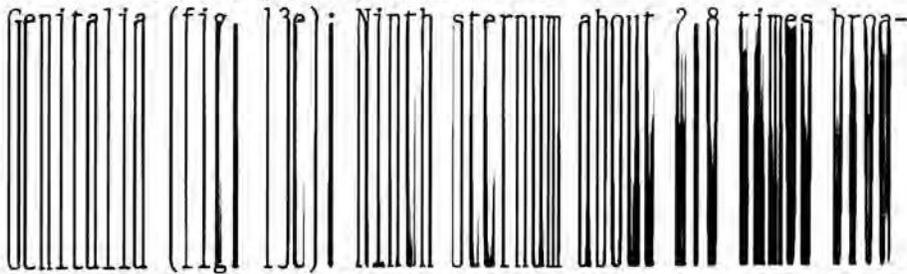


Fig. 13. *Parabessia inaequalis*: a-d, female; e, male; a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing; e, genitalia.

Male.- Similar to female with the usual sexual differences. Lengths of distal 4 flagellomeres in proportion of 12-16-12-16; plume golden brown.



der than long, without caudomedian excavation; 9th tergum truncated distally; cerci pointed, broadly separated. Gonocoxite with a short anteromesal protuberance; gonostylus as long as gonocoxite, nearly straight, ending in a sharp point. Aedeagus about 1.5 times longer than broad; basal arms short, rounded, heavily sclerotized; distal portion short. Parameres reduced; basal arms very slender and heavily sclerotized; distal portion apparently absent.

Distribution.- Brazil (Amazonas).

Types.- Holotype female, allotype male, 2 male paratypes, Brazil, Amazonas, Rio Irapirapi, Cachoeira, 11-I-1963, E. Fittkau, at light.

Parabezzia pallida n. sp.
(Fig. 14)

Diagnosis.- A medium-sized species; wing whitish hyaline, veins pale; legs yellowish; claws small, equal on all legs.

Female.- Wing length 1.02 mm; breadth 0.43 mm.

Head: Brownish; eyes moderately separated above. Antenna (fig. 14a) brown; bases of proximal 8 flagellomeres pale; AP 12-8-8-8-8-9-10-10-15-15-16-16-18; AR 1.10. Palpus pale; PP 10-10-11; PR 3.00. Mandible with 8 teeth on inner margin; outer margin with 5 small widely spaced teeth.

Thorax: Brown, scutellum pale brown. Scutum with 1 presutural and 3 posterolateral setae; scutellum not in position to count the number of bristles. Legs yellowish; hind tarsal ratio 2.50; 5th tarsomeres without ventral swelling; claws small (fig. 14b), equal on all legs; CP 16-16-14. Wing (fig. 14c) whitish hyaline, veins pale; costal fringe moderately long and dense (fig. 14d); 2 large setae on costa proximad of basal arculus; costal sections I-II-III in proportion of 33-26-9; Rs 33, Rs ex-

tending 0.88 of wing length. Halter yellowish.

Abdomen: Yellowish brown. Two ovoid, subequal spermathecae with short necks.

Male.- Unknown.

Distribution.- Mexico.

Type.- Holotype female, Mexico, Oaxaca Jaltepec, Isthmus of Tehuantepec, 21-V-1964, F.S. Blanton.

Discussion.- This species is very similar to *P. wirthi*, from which it can be distinguished by its paler coloration, and by the number of presutural and posterolateral setae on scutum (2-4 in *wirthi*, 1/3 in *pallida*).

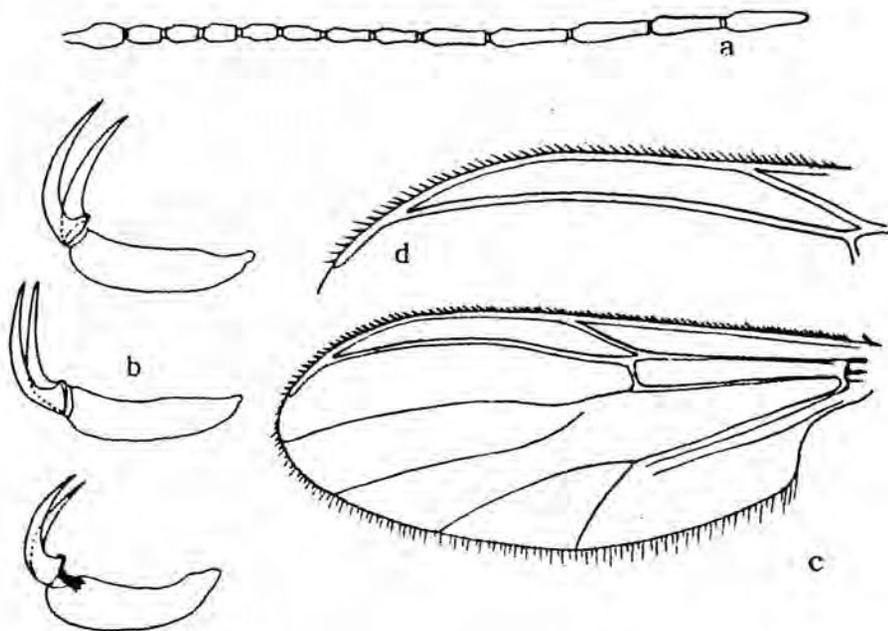


Fig. 14. *Parabezzia pallida*, female: a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing.

Parabezzia raccurti n. sp.
(Fig. 15)

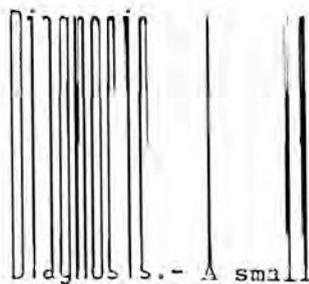


Fig. 15.- A small species; wing of both sexes slightly infuscated; costa extending near the wing tip; claws very unequal on hind leg; distal margins of aedeagus with broad lateral expansions.

Female.- Wing length 0.93 mm; breadth 0.40 mm.

Head: Golden brown; eyes separated by a distance equal to diameter of 3 ommatidial facets. Antenna (fig. 15a) brown, bases of proximal 8 flagellomeres pale; AP 12-8-8-8-8-8-9-9-14-14-16-16-19; AR 1.11. Palpus pale brown; PP 9-12-9; PR 3.25. Mandible with 7-8 teeth on inner margin.

Thorax: Brown. Scutum with 2 presutural and 3 posterolateral setae; scutellum not in position to count the number of bristles. Legs brownish, including tarsi; hind tarsal ratio 2.40; 5th tarsomeres with small claws (fig. 15b), equal on fore leg, subequal on mid leg, very unequal on hind leg; CP 13-16-12. Wing (fig. 15c) slightly infuscated, veins brownish; r-m crossvein at a slight oblique angle, broken at base; section III of costa extending nearly to vein M₁; costal fringe long, sparse on proximal section, dense on distal sections (fig. 15d); 1 seta on costa proximad of basal arculus; costal sections I-II-III in proportion of 30-26-10, Rs 31; Rs extending 0.92 of wing length. Halter pale brown.

Abdomen: Golden brown. Two ovoid, slightly unequal spermathecae with short necks.

Male.- Similar to female with the usual sexual differences. Lengths of distal 4 flagellomeres in proportion of 14-29-22-22; plume brown.

Genitalia: Ninth sternum about 2.6 times broader than long, with a very shallow caudomedian excavation, membrane spiculate; 9th tergum rounded, cerci short, ventral surface spiculate distally. Gonocoxite stout, about 1.5 times longer than broad; gonostylus slightly longer than gonocoxite, nearly straight, with pointed apex. Aedeagus (fig. 15e) about 2 times longer than broad; basal arms poorly developed, distal margins with broad lateral ex-

pansions; distal portion tapers slightly apically, nearly 1/3 of total length of aedeagus. Parameres fused; basal arms slender, poorly developed; distal portion broad, lightly sclerotized.

Distribution.- El Salvador.

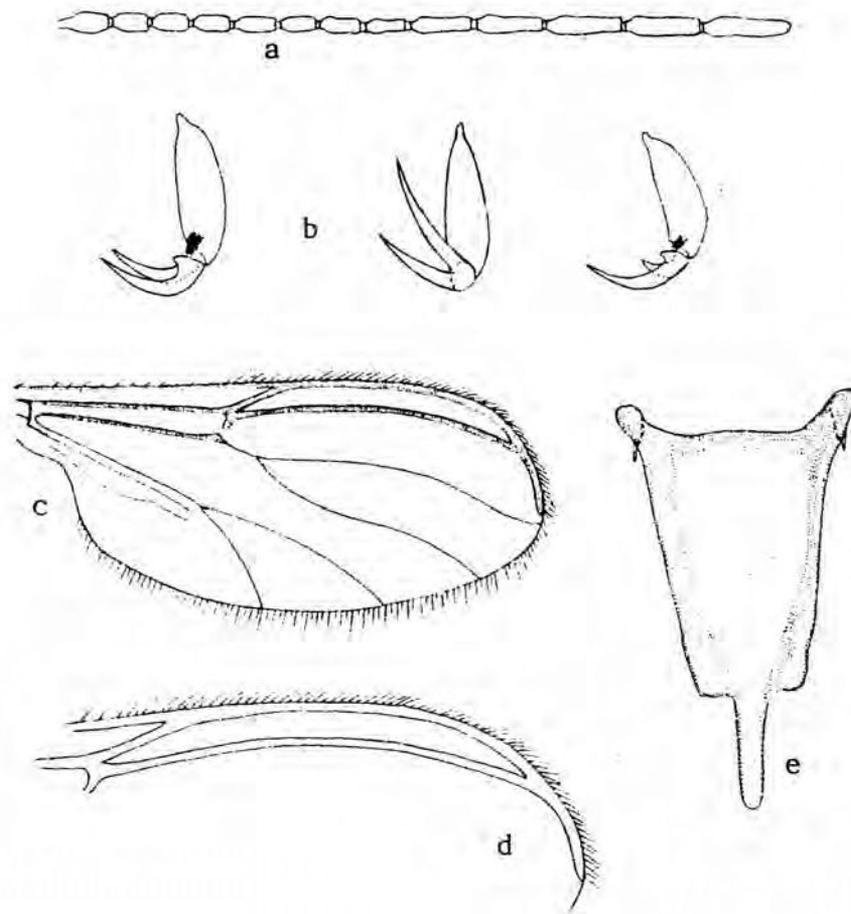


Fig. 15. *Parabeszia raccurti*: a-d, female; e, male; a, flagellum; b, 5th tarsomeres; c, wing; d, radial cell of wing; e, aedeagus.

Types.- Holotype female, allotype male, El Salvador, San Vicente, Santo Domingo, VIII-1967, F.S. Blanton.

Discussion.- This species can be distinguished from

the other Neotropical *Parabezzia* by the costa, that extends nearly to vein M1 at the wing tip. Characters for separating from *P. inaequalis* are given in the key.

Parabezzia wirthi Clastrier and Raccurt
Parabezzia wirthi Clastrier and Raccurt, 1979: 169 (female; Haiti).

Diagnosis.- A small species of the *uncinata* group most closely related to *P. haitiensis*, from which it can be distinguished by the scutum with 2 presutural and 4 posterolateral setae, and by the costa with 2 setae proximal of basal arculus.

Comment.- The original description gave all details necessary for comparison with the Neotropical species reported here.

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