

Neuroptera of the Amazon Basin

Part 6. Mantispidae (1)

Norman D. Penny (2)

Abstract

The 27 species of Mantispidae known from the Amazon Basin are described, keys are presented to their identification, and distributions recorded. Seven new species are recorded for the first time: *Plega beardi*, *Plega duckei*, *Plega paraense*, *Trichoscelia anae*, *Climaciella amapaensis*, *Mantispa ariasi*, and *Mantispa parvula*. Twenty names are synonymized: *Anisoptera romani* Esben-Petersen = *Anchieta bella* Westwood; *Anchieta nobilis* Navás = *Anchieta fumosella* (Westwood); *Mantispa cognatella* Westwood = *Plega hagenella* (Westwood); *Anisoptera amoenula* Gerstaecker = *Trichoscelia egella* Westwood; *Mantista (Trichoscelia) basella* Westwood = *Trichoscelia iridella* Westwood; *Anisoptera jocosa* Gerstaecker and *Symphrosis thaumasta* Navás = *Trichoscelia latifascia* MacLachlan; *Nobrega tinctus* Navás = *Climaciella semihyalina* (Serville); *Entanoneura chopardi* Navás and *Entanoneura jocosa* Navás = *Mantispa batesella* Westwood; *Mantispa trilineata* Navás and *Mantispa gounellei* Navás = *Mantispa gracilis* Erichson; *Mantispa viridis* Stitz, *Mantispa pallescens* Navás, *Mantispa flavescens* Navás, *Mantispa trichostigma* Navás, *Mantispa viridula* Erichson, *Mantispa flaveola*, and *Mantispa flavomaculata* Latreille = *Mantispa minuta* (Fabricius); nd *Mantispa debilis* Gerstaecker = *Mantispa compellens* Walker. Lectotypes are designated for five species: *Anchieta nobilis* Navás, *Trichoscelia partheniella* Westwood, *Trichoscelia iridella* Westwood, *Mantispa myrapetrella* Westwood, and *Mantispa moulti* Navás.

INTRODUCTION

Mantispidae, or mantid-flies, are distinctive members of the order Neuroptera; being characterized as adults by swollen fore femur and elongate pronotum. Larvae are slender in the first instar, becoming scarabaeiform in subsequent instars. Tjeder (1956) has described an African berothid with raptorial forelegs, and itemized an impressive list of characters held in common by these two

families. Thus, the Mantispidae and Berthidae can probably be termed sister groups in phylogenetic analysis.

BIOLOGY

The eggs of mantispids are laid on the end of stalks, as in several other families of Neuroptera. The active, first instar larva will seek out a suitable host, whereupon they will remain attached as ectoparasites, becoming scarabaeiform in later instars. There appears to be three larval instars. Peterson (1960) mentioned mantispid larvae on spiders and in spider egg cases. Woglum (1935) reported *Plega* cocoons inside the cocoons of a noctuid moth *Xylomeges curialis* Grote. Linsley & MacSwain (1955) collected larvae of *Plega* in association with pupae of the scarab beetle *Cyclocephala*. Based on this information, and further research of their own, Parker & Stange (1965) hypothesized that the *melitomae* group of *Plega* parasitize aculeate wasps, while the *signata* group parasitize subterranean insects. In the British Museum (Natural History) are two specimens of *Plega* reared from the nests of *Trypoxylon albitarse* Fabr. (Sphecidae) and *Zethus (Zethoides) miniatus* Sauss. (Vespidae). In the Vienna Museum is a specimen of *Trichoscelia varia* reared from *Polybia* (Vespidae) nests, and the British Museum (Natural History) has specimens of the same species of mantispid reared from *Myrapetra scutellaris* (Vespidae) and *Polybia ruficeps* (Vespidae). At times these parasites can be very abundant. Some reared material includes dozens of specimens from one nest, and Parker and Stange (Ibid.) found up to 71%

(1) — The first parts of this series covered the following groups: part 1 — Sisyridae, part 2 — Dilaridae, part 3 — Ascalaphidae, part 4 — Sialidae, part 5 — Coniopterygidae.

(2) — Instituto Nacional de Pesquisas da Amazônia, Manaus.

of *Megachile* leaf cells in an artificial cave in southern Mexico to be parasitized by *Plega*. Both *Plega* and *Trichoscelia* belong to the Platymentispinae; known hosts of Mantispinae are spiders.

MORPHOLOGY

In the past there has been little reliance on male genitalia for species identification. This has led to heavy reliance on weak characters, such as body coloration and wing shape and venation. Penny (1982) raised doubts and presented evidence to show the weakness of the present grouping of some genera. By use of male genitalia it becomes quickly evident that the genera *Necyla*, *Mantispa* and *Entanoneura*, as formerly defined, are polyphyletic. Thus, these species are placed in respective species groups within the genus *Mantispa*.

In naming the structures of the male genitalia, I have tried to follow the most commonly used terms, as at the present time there seems to be no consensus among specialists.

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Several museum curators have been quite generous with loans of material, and quite helpful while I was visiting their museums to examine Amazonian mantispids. I would like to gratefully acknowledge the help given by these museums and curators:

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R.G. Beard had intended to write a revision of American Mantispidae before his death in 1968. Many type specimens in European museums have Beard's determination labels and synonymy labels on them. This has helped a great deal in directing me in the proper course of species identification. I have agreed with all labels, as marked by Beard, except for his determination that *Plega melitomae* Parker and Stange is a junior synonym of *Plega hagenella* (Westwood). I find that these two species, although very similar, show a differing number of male paramere spines (see Table 1), and thus I have not synonymized them. However, this one disagreement cannot diminish the overall assistance given by these labels.

This work also could not have been carried out without the financial assistance of CNPq/INPA project 2020/401 and CNPq Projeto Tropico Úmido grant 3224.

SISTEMATICS

There has not been a comprehensive study of all species of Mantispidae since Westwood (1852) described the 46 species known in his time. Hagen (1861) listed the New World species, and in 1866 did the same for the whole world. In somewhat more recent times, Enderlein (1910) established much of our present classification system, with a key to subfamilies, tribes and genera. Stitz (1913) gave descriptions of species in the Berlin Museum, including many from South America. The subsequent 20 years was dominated by hundreds of species descriptions and distributional records by Longino Navás, many of which were from Latin America. This period was followed by almost no activity in taxonomy of South American Mantispidae for more than 25 years. However, in 1958, Williner and Kormilev described the species of Mantispidae from Argentina, and in 1960 Handschin redesc-

cribed the South American species of *Climaciella*, *Entanoneura* and *Paramantispa*, using drawings of some male genitalia for the first time from this region. Parker & Stange (1965) presented valuable new characters for characters for separation of *Plega* and *Trichoscelia*. In 1977 Penny listed 15 genera and 112 species from Latin America. The present study describes the genera and species from Amazonia. The two subfamilies can be separated using the following key:

KEY TO SUBFAMILIES OF AMAZONIAN
MANTISPIDAE

- 1a. Fore tarsi with two claws and arolium; female bearing ovipositor; male with coiled or recurved, internal spinasternum; anterior first tarsal segment with a dentiform process; pronotum only slightly longer than wide PLATYMANTISPINAE
- 1b. Fore tarsi with one claw and lacking arolium; female without ovipositor; male with simple internal spinasternum; anterior first tarsal segment without dentiform process; pronotum two or three times as long as wide MANTISPINAE

Platymantispinae Rehn, 1939

Symphrasini Navás, 1909, *Mem. R. Acad. cienc. artes Barcelona*, 7 (1): 484.
Anisopterinae Enderlein, 1910, *Stett. ent. Ztg.*, 71-342.
Platymantispinae Rehn, 1939, *Ent. News*, 50: 82.

TYPE GENUS: *Platymantispa*, a replacement name for *Anisoptera* Schneider, now considered a synonym of *Anchieta* Navás.

This is the most primitive of mantispid subfamilies, having a relatively short pronotum, and trichosors along the wing margin. Females have a specialized "ovipositor". This subfamily is completely confined to the New World. Only three genera are presently recognized in this group: *Anchieta*, *Plega*, and *Trichoscelia*, which can be separated using the following key:

KEY TO GENERA OF PLATYMANTISPINAE

- 1a. Subbasal spine of fore femur present; hindwing recurrent vein of media without crossvein 2
- 1b. Subbasal spine of fore femur absent; hindwing recurrent vein of media with crossvein *Trichoscelia*
- 2a. Forewing second radial cell curving around wing apex *Plega*
- 2b. Forewing second radial cell straight *Anchieta*

Anchieta Navás, 1909

Anisoptera Schneider, 1843, *Mon. Raphidiae*, p 32 (preoccupied by *Anisoptera* Berthold, 1827, and *Anisoptera* Herrich-Schaeffer, 1840).
Anchieta Navás, 1909, *Mes. R. Acad. cienc. artes Barcelona*, (3) 7: 483.
Platymantispa Rehn, 1939, *Ent. News*, 50: 82.
Anisopterana Strand, 1942, *Folia zool. hydrobiol.*, 11: 389.

TYPE SPECIES: of *Anisoptera* Schneider is *Anisoptera notha* Erichson (1839), designated by Enderlein (1910); of *Anchieta* is *Anchieta nobilis* Navás, by monotypy.

Anchieta is closely related to *Plega*, with both having a large subbasal spine on the fore femur. Species of *Anchieta* from southern Brazil (and *A. fumosella*) are quite distinctive, having some dark infuscation of the wings and larger size. The few specimens known from Amazonia are smaller, without wing pigmentation and generally of a wing shape less longate and more rounded than specimens from southern Brazil. What at first appears to be two quite distinctive genera, in fact display some similarities in Amazonia. However, the seven specimens and three species of Amazonian *Anchieta* (excluding *A. fumosella*) display another distinctive feature—greatly expanded hind tibiae. Thus, there is not a gradual transition from *Plega* to *Anchieta*, and I have kept the two genera separated.

The four Amazonian species of *Anchieta*: *A. partheniella*, *A. eurydella*, *A. bella*, and *A. fumosella* were all collected by Henry W. Bates in his travels in Amazonia between 1849 and 1859. These specimens are deposited in the Hope Entomology Collection of Oxford

University, Oxford, England, and they all bear no locality label beyond the word "Amazons". Three other specimens of *A. bella* are known: the holotype male of *Anisoptera romani* Esben-Petersen in the Stockholm Museum, a male in the Paris Museum, and a female in the Systematic Entomology Collection of INPA. I know of three other specimens of *A. fumosella*, and two other specimens in this genus. Thus, although I know of five species in this genus, they are known from a total of 12 specimens, 11 of them from Brazil.

The small size and swollen orange and black hind tibiae of some species give these mantispids the appearance of stingless bees (Meliponini), which are common in the region. There is perhaps a more specific relationship between these two groups.

The four known species of *Anchieta* from Amazonia can be separated, using the following key.

KEY TO AMAZONIAN SPECIES OF ANCHIETA

- 1a. Forewing with dark infuscation along subcostal and radial area; male ninth tergite with long bristles laterally *A. fumosella*
- 1b. Forewing transparent; male genitalia unknown 2
- 2a. Hind tibia three times as long as wide, black medially with orange proximally and distally *A. bella*
- 2b. Hind tibia only twice as long as wide, coloration otherwise 3
- 3a. Hind tibia completely orange *A. partheniella*
- 3b. Hind tibia predominantly black, with orange on basal fifth *A. eurydella*

Anchieta bella (Westwood, 1867) new combination
(Map 1)

Mantispa (*Trichoscelia*) *bella* Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 502.
Trichoscelia bella (Westwood) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 376.
Anisoptera romani Esben-Petersen, 1917, *Ark. Zool.*, 11 (10): 14.

Trichoscelia romani (Esben-Petersen) Penny, 1977, *Acta Amaz.*, 7 (4): 37, suppl., new synonymy.

Holotype female of *A. bella* in the Hope Entomology Collection, Oxford, England.

Holotype male of *Anisoptera romani* in the Stockholm Museum, Stockholm, Sweden.

Present description based on holotype of *A. bella* and 1 male, 1 female, pinned.

HEAD: Frons pale; vertex dark fuscous. Antennal flagellomeres twice as wide as long, dark fuscous, except five subapical segments pale.

THORAX: Dark fuscous, with transverse pale stripe on prozona of pale specimens.

LEGS: Fore trochanter anteriorly dark fuscous. Fore femur dorsally dark fuscous, ventrally pale yellow; medially bearing 14 spines and small subbasal spine. Fore tibia apically dark fuscous. Hind tibia dark medially, with orange proximally and apically. Thick setae on hind tibia corresponding in coloration of the area.

WINGS: Forewing membrane transparent, with slight infuscation below pterostigma. Pterostigma of forewing dark fuscous medially, and paler proximal and distal. Second radial cell not curved.

GEOGRAPHICAL DISTRIBUTION: Amazonia, Henry W. Bates, 1849-1859, 1 female (OXF); **Brasil:** Amazonas, Autax River, 6-IX, A. Roman, 1 male (Stockholm Museum); Amazonas, Manaus, Parque de Laranjeiras, 5-VIII-1981, J. Arias, 1 female; French Guyana: Charvein, X-1914, R. Benoist, 1 male (MNHN). There is no locality on Brazilian maps called Autax or Rio Autax, but along the Amazon River just east of Manaus is a small town called Autazes, with three small rivers close by using the name Rio Autas. I have been told that the spelling of both the rivers and town is locally spelled Autax. Thus, this is almost certainly the type locality of *Anisoptera romani*.

This species can be separated from the other three Amazonian species of *Anchieta* by the transparent wing membrane and somewhat less swollen hind tibia and different color pattern of this structure. Although I have not seen the type specimen of *Anisoptera romani*,

there is in the Paris Museum a specimen identified as his species which agrees in almost all characters with the description of the type male. Although this specimen is somewhat paler in coloration than the holotype female of *Trichoscelia bella*, the differences are minor, and due mostly to the more distinctive contrast in coloration of the paler specimen. Thus, lacking distinctive features to separate these two names, I have synonymized *Anisoptera romani*.

Anchieta eurydella (Westwood, 1867) new combination

Mantispa (*Trichoscelia*) *eurydella* Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 501.

Trichoscelia eurydella (Westwood) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 376.

Holotype female in the Hope Entomology Collection, Oxford, England. Present description based on holotype.

HEAD: Dark fuscous. Antennal flagellomeres twice as wide as long, dark fuscous, except a few subapical segments pale yellow.

THORAX: Dark fuscous.

LEGS: Hind tibia black, except basal fifth orange. Thick black setae covering much of hind tibia. Subbasal spine on fore femur.

WINGS: Forewing membrane transparent. Pterostigma of forewing pale orange, about as wide as long. Pterostigma of hindwing dark fuscous, about three times as long as wide. Second radial cell of forewing straight.

GEOGRAPHICAL DISTRIBUTION: Amazonia, Henry W. Bates, 1849-1859, 1 female (OXF).

This species can be separated from *A. bella* by its more swollen hind tibia, and from *A. eurydella* by the orange coloration of the hind tibia.

Anchieta fumosella (Westwood, 1867) new combination
(Figs. 2-7, Map 1)

Mantispa (*Trichoscelia*) *fumosella* Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 504.

Trichoscelia fumosella (Westwood) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 376.

Anchieta nobilis Navás, 1909, *Mem. R. Acad. cienc. artes Barcelona*, (3) 7: 484.

Trichoscelia nobilis (Navás) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 376, new synonymy.

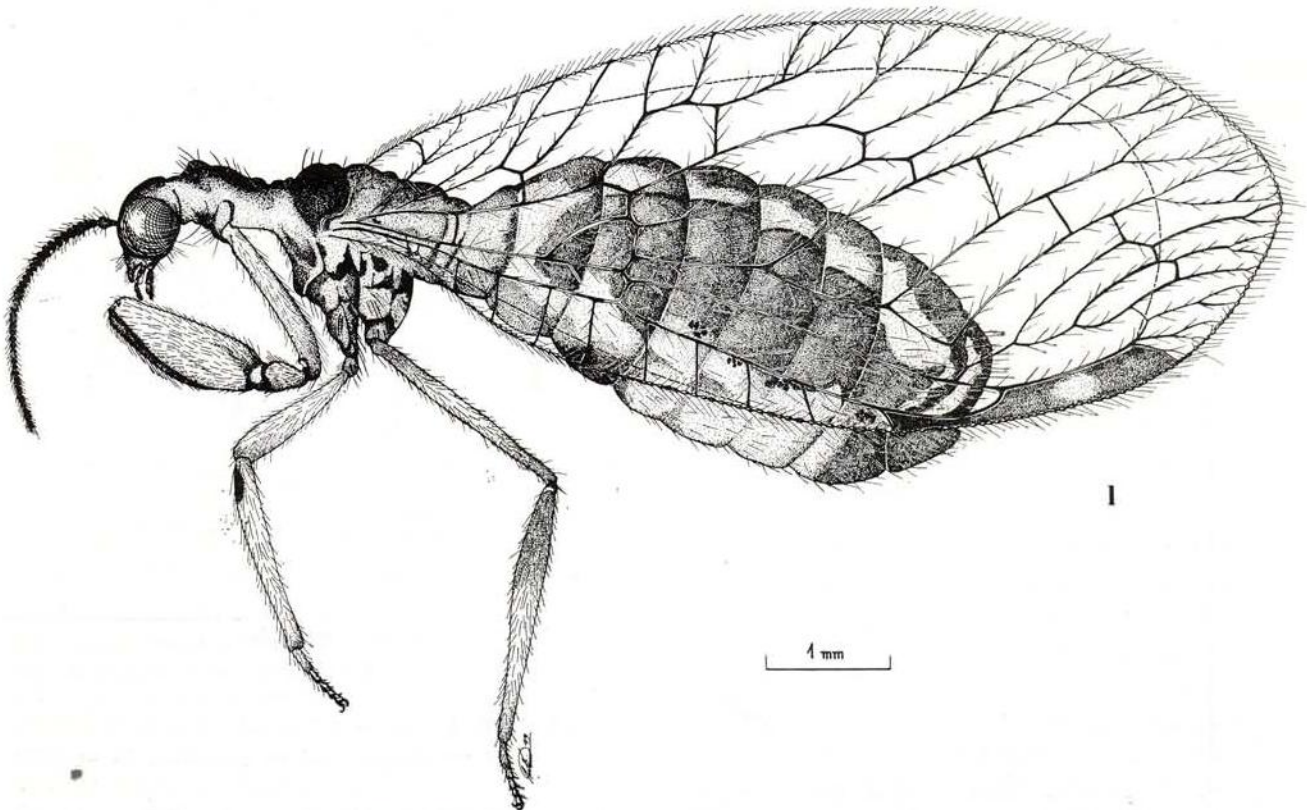


Figure 1 — Lateral view of *Trichoscelia iridella* Westwood. (from Penny and Arias, 1981).

Holotype male of *Mantispa (Trichoscelia) fumosella* in Hope Entomology Collection, Oxford, England. Lectotype male and paralectotype female of *Anchieta nobilis* in the Paris Museum. Description based on holotype of *T. fumosella* and lectotypes of *Anchieta nobilis* and 2 males, pinned.

HEAD: Occiput and frons yellow with lateral piceous stripes, becoming completely black in some specimens; genae yellow to black with medial yellow spot. Antennal flagellomeres dark fuscous, becoming gradually paler apically; twice as wide as long, with ring of dense, dark setae; of 46 segments. Maxillary and labial palpi black.

THORAX: Pronota black with two longitudinal yellow stripes, these stripes being absent in darker specimens. Meso- and metanota yellow, with three longitudinal black stripes. Notal areas with black margining of yellow sclerites.

LEGS: Fore coxa yellow to dark fuscous, with yellow apical ring on dark specimens. Fore femur yellow to fuscous, with darker J-shaped mark at middle and dark along closing face. Subbasal spine present; yellow basally, black apically. Four lateral spines of fore femur black. Fore tibia proximally yellowish brown, becoming black apically. Apex of fore tibia with patch of golden setae on medial surface. First fore tarsal segment elongate, with large subapical spinal process; black basally, fuscous apically. Second to fourth tarsal segments very small; reddish brown. Two tarsal claws and arolium present on foreleg. Mid- and hindleg segments yellowish, becoming gradually fuscous proximally in darker specimens, and fuscous on the posterior margin of middle and hind tibiae.

WINGS: Forewing membrane clear, with dark infuscation in subcostal area and radial area basad of pterostigma. Eighteen costal crossveins, the majority in apical third of forewing. Pterostigma of forewing about four times as long as wide; fuscous. Some setae on membrane of radial area, especially near first sc-r crossvein. Three radial veins originating from first radial cell; five radial veins originating from second radial cell (Fig. 2).

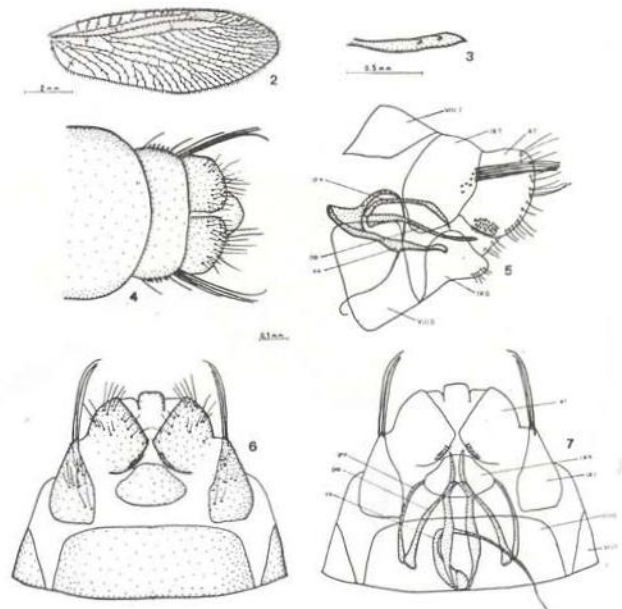
Hindwing membrane clear, except subcostal and part of radial area fuscous. Medial recurrent vein present, without crossvein.

ABDOMEN: First four abdominal segments orange, abruptly changing to black posteriorly. Darker specimens black dorsally, reddish brown to yellowish brown ventrally. Male ninth tergite with long, pale bristles laterally. Ninth sternite bearing very stout setae and ventro-medial patch of small teeth. Male spinasternum simply recurved. Gonocoxites ending in single acute process (Figs. 3-7).

BODY LENGTH: male, 10 mm.

FOREWING LENGTH: male, 10-12 mm; female, 7 mm.

VARIATION: Darker specimens, such as the type of *T. fumosella*, are completely fuscous to black, without color patterns on the body, while paler specimens, such as the type of *Anchieta nobilis*, have very distinctive markings on the body. Thus, at first these two named species appear to be quite different. However, I have seen intermediate stages in



Figures 2-7 — *Anchieta fumosella* (Westwood). 2) right forewing; 3) male parameres; 4) male terminalia, dorsal view; 5) male terminalia, lateral view; 6) male terminalia, ventral view — uncleared; 7) male terminalia, ventral view — cleared. gnx = gonarcus, pa = paramere, ss = spinasternum, VIII S = eighth sternite, IX S = ninth sternite, VIII T = eighth tergite, IX T = ninth tergite, X T = ectoproct.

this color transition, and the males appear to have the same genitalia. Thus, without any structural differences between the two species, and intergrading variation, I have decided to synonymize the junior name, *Anchieta nobilis* Navás.

GEOGRAPHICAL DISTRIBUTION: Westwood (1867) recorded the type locality as Amazonia, collected by H.W. Bates, although there is now no label on the holotype to verify this statement. There is one male in the Systematic Entomology Collections of INPA from Santa Catarina State in southern Brazil, and a second male in the collection of Universidade Federal de Minas Gerais in central Brazil. The types of *A. nobilis* are from Goiás State in central Brazil.

This species of *Anchieta* can readily be separated from the other three Amazonian species by its larger size and dark markings along the subcostal margin of the forewing. The hind tibia of *A. fumosella* is not expanded as it is in other Amazonian species and *A. notha*.

***Anchieta partheniella* (Westwood, 1867)**
new combination

Mantispa (Trichoscelia) partheniella Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 501.

Trichoscelia partheniella (Westwood) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 376.

Lectotype male and paralectotype female in the Hope Entomology Collection, Oxford, England. Present description based on lectotypes.

HEAD: Dark fuscous. Antennal flagellomeres twice as wide as long, dark fuscous, except a few subapical segments pale yellow.

THORAX: Dark fuscous.

LEGS: Fore femur orange with dorsal black spot covering most of dorsal surface. Hind tibia very swollen; about twice as long as wide; orange with dense pilosity.

WINGS: Forewing membrane transparent. Forewing pterostigma diffuse orange; about as wide as long. Hindwing pterostigma dark fuscous; three times as long as wide. Second radial vein of forewing not curved.

GEOGRAPHICAL DISTRIBUTION: Amazonia, Henry W. Bates, 1849-1859, 1 male, 1 female.

This species can be separated from *A. bella* by its more swollen hind tibia, and from *A. eurydella* by the orange coloration of the hind tibia.

Plega Navás, 1928

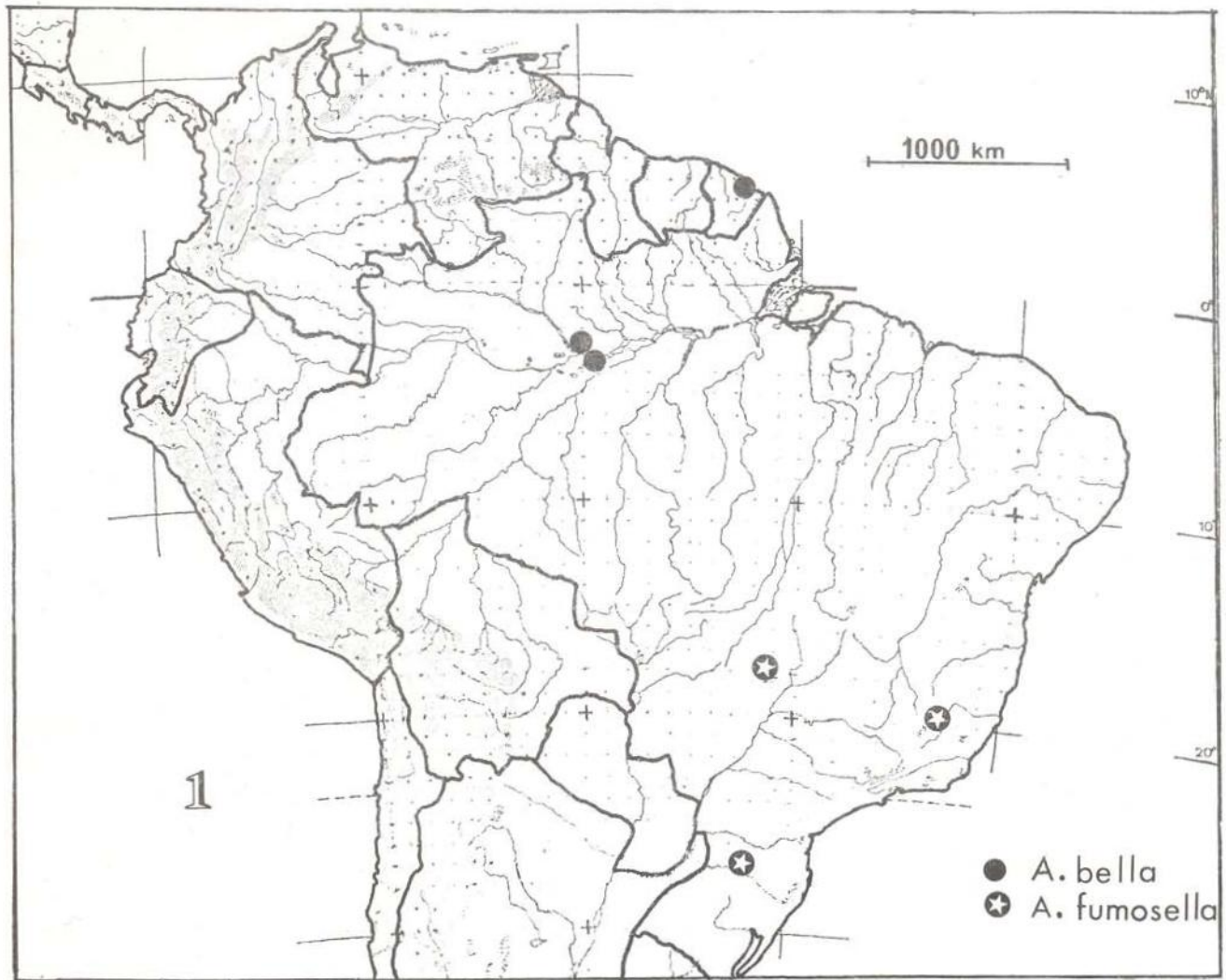
Plega Navás, 1928b, *Revta. chil. Hist. nat.*, 31 (1927): 326.

TYPE SPECIES: *Symphrosis signata* Hagen, by original designation.

Plega is very similar to *Trichoscelia* and *Anchieta*, and for many years was considered a synonym of the former genus. However, Parker & Stange (1965) have given a number of additional characters to use in separating *Plega* from *Trichoscelia*, the most distinctive of which is the subbasal spine on the fore femur, which is not found in *Trichoscelia*. Penny (1982) has given characters to separate *Plega* from *Anchieta*, and the Amazonian species of *Anchieta* (with the exception of *A. fumosella*) all have swollen hind tibiae, which is lacking in *Plega*. *Plega* presently contains 13 species, including three new ones, ranging from Bolivia to the United States. Some salient features of the various species are listed in Table 1. Three species of the *melitomae* group and one species of the *signata* group are known to exist in the Amazon Basin, and can be separated by the following key.

KEY TO AMAZONIAN SPECIES OF PLEGA

- 1a. Basal antennal flagellomeres twice as wide as long (*signata* group)
..... *P. duckei*
- 1b. Basal antennal flagellomeres as long as wide (*melitomae* group) 2
- 2a. Three to four subapical antennal segments pale yellow; male spinasternum simply recurved *P. hagenella*
- 2b. All antennal flagellomeres dark; spinasternum of known species coiled 3



Map 1 — Geographical distribution of Amazonian species of *Anchieta*.

TABLE 1 — Characteristics of species of *Plega*.

SPECIES	GEOGRAPHICAL DISTRIBUTION	N.° OF PARAMERE SPINES	SPECIES GROUP
<i>P. banksi</i> Rehn	U.S.A.	7	signata
<i>P. beardi</i> , n. sp.	Amazon	5	melitomae
<i>P. dactylota dactylota</i> Rehn	U.S.A.	8	signata
<i>P. dactylota lipanica</i> Rehn	U.S.A.	8	signata
<i>P. duckei</i> , n. sp.	Amazon	4	signata
<i>P. fasciatella</i> (Westwood)	Panama to Bolivia	?	signata
<i>P. fratercula</i> Rehn	U.S.A.	5	?
<i>P. fumosa</i> Linsley and MasSwain	Mexico	8	signata
<i>P. hagenella</i> (Westwood)	Mexico to Amazon	3	melitomae
<i>P. melitomae</i> Linsley and MacSwain	Mexico	4	melitomae
<i>P. paraense</i> , n. sp.	Amazon	?	melitomae
<i>P. signata</i> (Hagen)	U.S.A. to Colombia	3	signata
<i>P. trifasciata</i> (Stitz)	Bolivia and Ecuador	5	signata
<i>P. variegata</i> Navás	Mexico	?	?
<i>P. yucatanae</i> Parker and Stange	Mexico	2	melitomae

- 3a. More than 60 antennal flagellomeres; pale brown; mesonotum with majority of pilosity pale yellow; 10-11 spines on mesal surface of fore femur . *P. paraense*
- 3b. Less than 40 flagellomeres; basal ten antennal flagellomeres piceus; mesonotum with majority of pilosity black; 7-8 spines on mesal surface of fore femur *P. beardi*

***Plega beardi*, n. sp.**

(Figs. 8-11, Map 2)

Original description based on 1 male, pinned.

HEAD: Occiput and frons yellowish with fuscous markings. Antennae subcylindrical, as long as wide, narrowing only slightly towards apex, with 39-40 flagellomeres; scape yellowish; pedicel and all flagellomeres piceus. Maxillary and labial palpal segments piceus basally, yellowish apically.

THORAX: Notal segments forming mottled color pattern of piceus and yellow. Pleural sclerites piceus centrally and yellowish peripherally. Setae black, except a few medial setae of mesonotum yellowish brown.

LEGS: Fore coxa mottled yellow and brown, bearing black setae longer than diameter of coxa. Trochanter triangular, slightly longer than wide at apex, coloration yellowish with two basal fuscous spots. Fore femur rugose, coloration mottled yellow and piceus-piceus predominantly on medial surface, yellow predominantly on lateral surface. Medial face with row of 7-8 small spines extending over distal half; larger subbasal spine fuscous. Lateral surface with four stout basal spines and three smaller apical spines. Closing surface of femur with tibia with two rows of numerous small pegs. Fore tibia yellowish, with four spots on dorsal surface piceus. First tarsal segment elongate, with large, subapical spine. Second fore tarsal segment elongate, thin, yellow; third segment short, yellow; last segment twice as long as wide, yellowish brown. Fore tarsi with two tarsal claws and arolium. Mid and hind coxae banded with piceus

distally and proximally, yellowish medially. Mid and hind trochanter subquadrate, yellowish. Femur with basal and subapical bands yellow. Tibia with four piceus bands. Mid and hind tarsal segments yellowish brown.

WINGS: Forewing with recurrent humeral crossvein. Pterostigma about four times as long as wide, piceus proximally and distally, yellow in middle. All veins alternating piceus and yellow in checkered pattern. Vein forks and crossveins bordered with piceus (Fig. 8).

ABDOMEN: Coloration piceus with two lateral yellow lines on each side at margin of tergites and sternites. Broad ventral band yellow. Mid dorsal, quadrate spot on segments III-IV and VI-VII reddish brown. Male ectoprocts bearing small ventral spines. Spinasternum coiled. Gonocoxites apically bearing one subapical and four apical teeth (Figs. 9-11).

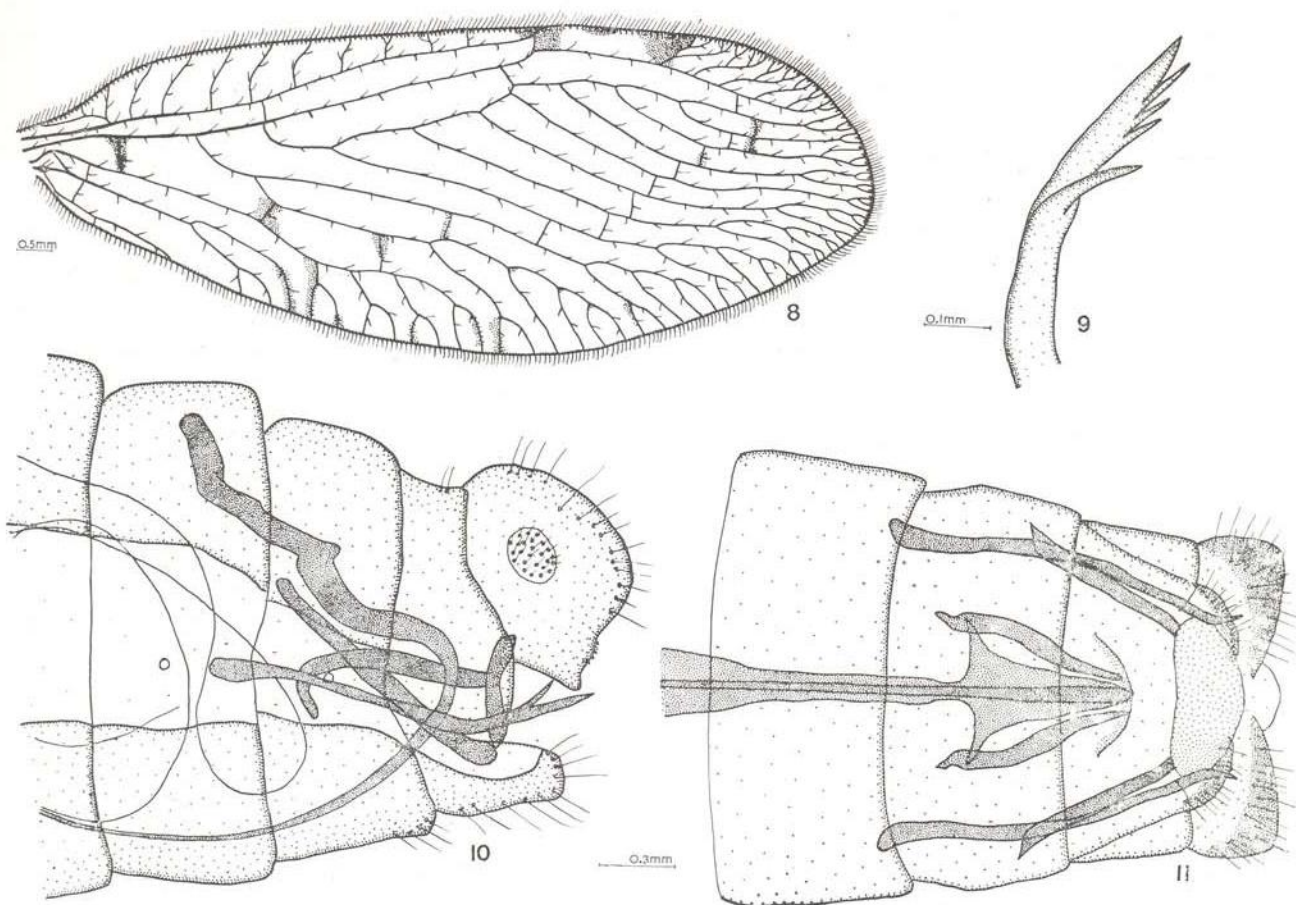
BODY LENGTH: male, 9 mm.

FOREWING LENGTH: male, 11 mm.

Female unknown.

GEOGRAPHICAL DISTRIBUTION: Holotype male from **Brazil:** Amazonas, 15 km SE of Barcelos 14-I-1978, N.D. Penny (INPA). There is one additional female in the British Museum (Natural History) from **Trinidad**, reared from the nest of *Trypoxylon albitarse* Fabr. which appears to be this species, but without having associated males, it is impossible to know for sure.

Plega beardi is named in honor of R.G. Beard, American specialist on Mantispidae. With the inclusion of the two new species in this article, there are now five species definitely associated with the *melitomae* group. The pigment pattern of the head and five-spined male parameres rapidly separate *P. beardi* from the three known species from Mexico, *P. hagenella*, *P. melitomae* and *P. yucatanae*. *P. beardi* can be separated from the other two new species from Amazonia by the lack of yellow subapical segments of the antennae, with fewer flagellomeres, and differing number of apical spines of the male parameres.



Figures 8-11 — *Plega beardi*, n.sp. 8) right forewing; 9) male paramere; 10) male terminalia, lateral view; 11) male terminalia, dorsal view.

***Plega duckei*, n. sp.**

(Figs. 12-15, Map 2)

Original description based on 2 males, pinned.

HEAD: Occiput elevated slightly above compound eyes; piceus, except caudal margin yellow. Frons and mouthparts piceus, except terminal part of maxillary and labial palpi yellowish. Antennal segments twice as wide as long; dark brown; with 46 to 51 flagellomeres.

THORAX: Pronotum dark brown medially; pale yellow laterally. Meso- and metanotal sclerites dark brown centrally, pale yellow peripherally. Pilosity yellow.

LEGS: Fore coxa yellow with faint indication of fuscous bands before mid-length and at apex. Fore trochanter and femur pale yellow with faint indication of fuscous band before mid-length of femur. Fore femur bearing 6 black spines on mesal surface and 4 large

and two small black spines on lateral surface, in addition to large, yellow, subbasal spine. Fore tibia yellowish brown. First fore tarsal segment as long as others combined; yellow; large terminal spine, reddish brown. Terminal three fore tarsal segments yellowish brown, terminating in two tarsal claws and arolium. Mid tibia yellow, with basal and apical fuscous bands. Mid femur yellow, with two fuscous bands, one on either side of mid-length. Mid tarsal segments yellow. Hind femur yellow, except terminal band fuscous. Hind tibia yellow with basal and subapical fuscous bands. Hind tarsi yellow.

WINGS: Forewing with slightly recurrent humeral crossvein. Pterostigma about four times as long as wide, piceus proximally and distally, yellow in middle. Three radial veins originating from first radial cell; one radial vein from second radial cell. Membrane transparent, except all vein forks and crossveins

marked piceus. In hindwing pterostigma four times as long as wide, fuscous. Three radial veins originating from first radial cell; no radial veins originating from second radial cell. Hindwing membrane transparent.

ABDOMEN: Fuscous, except for ventral, longitudinal, yellow line on anterior segments. Male spinasternum simply recurved; gonocoxites with four apical teeth (Figs. 13-15).

BODY LENGTH: 3.5 — 6 mm.

FOREWING LENGTH: male, 5.5 — 8 mm.

Female unknown.

GEOGRAPHICAL DISTRIBUTION: Holotype male in Systematic Entomology Collections of INPA, Manaus, from **Brazil:** Amazonas, Reserva Ducke, 11-X-1977, J.R. Arias. Paratype male from **Brazil:** Amazonas, Manaus, Parque das Laranjeiras, 22-I-1981, J.R. Arias (USNM).

This species is named for the Brazilian entomologist and botanist, Adolpho Ducke, for whom Reserva Ducke, the type locality, was named. This is one of the smallest known species of *Plega*, and the only species of the *signata* group known from the Amazon Basin, and the only species of this group with four apical spines on the male parameres.

Plega hagenella (Westwood, 1867)
new combination
(Figs. 16-19, Map 2)

Mantispa hagenella Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 504.

Mantispa cognatella Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 506, new synonymy.

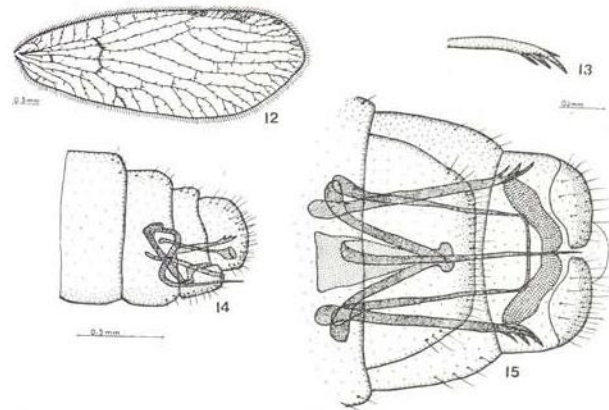
Holotype male of *Mantispa hagenella* and holotype female of *Mantispa cognatella* in the Hope Entomology Collection, Oxford, England.

Present description based on holotypes of *M. hagenella* and *M. cognatella* and 2 males, 1 female, pinned.

This species is very similar to *P. beardi*, except for the following characteristics:

HEAD: Antenna bearing 35 to 37 flagellomeres; flagellomeres 10 to 12 or 10 to 14 from tip yellow.

ABDOMEN: Female ovipositor sinuous; about 3/4 length of abdomen, pale yellow



Figures 12-15 — *Plega duckei*, n.sp. 12) right forewing; 13) male paramere; 14) male terminalia, lateral view; 15) male terminalia, dorsal view.

brown. Male abdomen with simply recurved spinasternum and 3 apical spines on gonocoxites (Figs. 17-19).

BODY LENGTH: male, 10 mm; female, 7 mm.

FOREWING LENGTH: male, 10.5 mm; female, 10 mm.

GEOGRAPHICAL DISTRIBUTION: Holotype male of *P. hagenella* was collected at **Brazil:** Amazonas, 1849-1859, H.W. Bates (OXF), and the holotype female of *P. cognatella* was listed by Westwood as being from "Sanctam Martham, Venezuelae". Actually, the insect label below the holotype reads Sta. Martha, **Bolivia**, 1866, Stevens. No such locality can be found on maps of Venezuela or Bolivia, but this specimen is probably from **Colombia:** Santa Marta, which is a site frequently collected by entomologists. Three specimens in the Systematic Entomology Collections of INPA, Manaus, are from **Brazil:** Amazonas, lago Amaná, 13-IX-1979, R. Best, 1 female, at lights; Rondonia, BR-364, km 50, 28-IX-1979, SUCAM, 1 male, in a Malaise trap; and Rondonia, BR-364, km 28.5, 3-XI-1980, J.R. Arias, 1 male, in a Malaise trap. There are in the Paris Museum one male and one female identified as *P. hagenella* from Costa Rica. They actually appear to be *P. yucatanae* Parker and Stange. As females of most *Plega* species appear very similar, as *P. hagenella* and *P. yucatanae* both have narrow antennal segments with five paler subapical antennal segments, and as our knowledge of the geographical

distribution of these species is still rudimentary, I think that Central American specimens could be either species. There are *Plega* females that fit this description in (MWIE) from Nicaragua, in the (BMNH) from Panama, and in (USNM) from Trinidad.

This is the only species of the *melitomae* group which normally has 3 apical spines on the male parameres. The pale subapical antennal segments allies this species most closely with *P. yucatanae*, which Parkar and Stange noted as normally having one apical and one subapical one. The configuration of spines in *P. hagenella* varies from *P. yucatanae* by having two apical spines of equal size, and one slightly basad, that could be called subapical. Thus, although *P. yucatanae* can occasionally have a third, small spine, the size and configuration are different. The small, median, subapical process of the male eighth sternite of *P. yucatanae* is absent in *P. hagenella*. *P. cognatella* varies in no significant manner from the type of *P. hagenella*, although its being a female makes exact identification difficult.

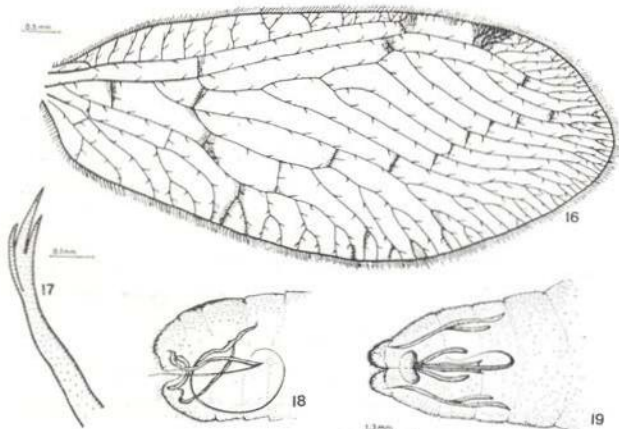
***Plega paraense*, n. sp.**

(Fig. 20, Map 2)

Original description based on one female, pinned.

This species is very similar to *P. beardi*, except for the following characteristics:

HEAD: Antennae pale brown; 58-59 flagellomeres. Markings of occiput diffuse.



Figures 16-19 — *Plega hagenella* (Westwood). 16) right forewing; 17) male paramere; 18) male terminalia, lateral view; 19) male terminalia, ventral view.

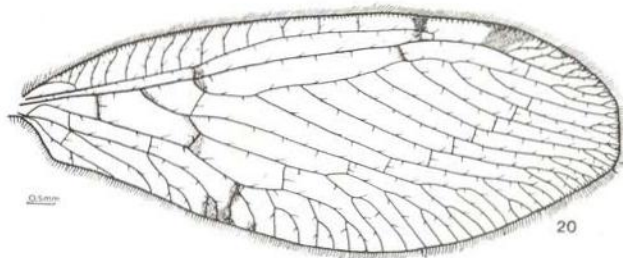


Figure 20 — *Plega paraense*, n.sp. right forewing.

THORAX: Pilosity of nota predominantly yellow.

LEGS: Medial surface of fore femur with 10-11 spines. Lateral surface of fore femur predominantly yellow, with only a slight infuscation basally.

ABDOMEN: Female ovipositor less than 1/2 length of abdomen, pale yellowish brown.

BODY LENGTH: female, 8.5 mm.

FOREWING LENGTH: female, 10.5 mm.

Male unknown.

GEOGRAPHICAL DISTRIBUTION: Holotype female from **Brazil:** Pará, Belém, Mocambo Forest, 19-I-1978, Malaise trap (MPEG).

This is one of the species of the *melitomae* group having uniformly dark antennae closely related to *P. beardi*, n. sp. However, the longer, paler antennae, pale thoracic setae, and more numerous spines on the mesal surface of the fore femur separates *P. paraense* from *P. beardi*.

Trichoscelia Westwood, 1852

Trichoscelia Westwood, 1852, *Trans. R. ent. Soc. Lond.*, (2) 1: 269.

Symphrosis Hagen, 1877, *Stett. ent. Ztg.*, 38: 208.

TYPE SPECIES: of *Trichoscelia* is *Mantispa fenella* Westwood, designated by Enderlein (1910) and of *Symphrosis* is *Raphidia varia* Walker, designated by Enderlein (1910).

This genus is closely related to *Plega* and *Anchieta*, but can be separated from them by the lack of a subbasal spine of the fore femur, the first and second tarsomere being relatively equal in size, presence of a crossvein between the media and the recurrent vein of the media in the hindwing, and other characteristics of the fore femur.

Like *Plega*, *Trichoscelia* can be separated into two species groups based on width of basal antennal flagellomeres. I have chosen to call these the *fenella* group (with relatively wide segments) and the *varia* group (with relatively narrow segments) based on the oldest named species. Some species also display the pale subapical antennal segments, as in *Plega*. This should not indicate a polyphyletic grouping, as differing width of antennal segments is also found in Amazonian Coniopterygidae, being sex related in the latter family. The paler subapical antennal segments are also found in some species of Amazonian Sisyridae (see part 1 of this series) and in some species of South American Hemeobiidae. Thus, the potential for development of these two morphological traits is probably found throughout these families of Neuroptera.

The known species and some salient features about them are recorded in Table 2. The present study records seven species from the Amazon Basin, separated by the following key.

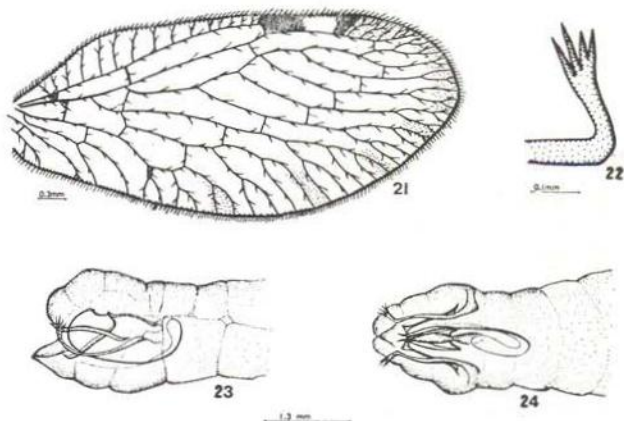
KEY TO AMAZONIAN SPECIES OF TRICHOSCELIA

- 1a. Forewing with distinct spots or bands 2
- 1b. Forewing without markings, except for pterostigma 3
- 2a. Forewing with two spots, without bands *T. fenella*
- 2b. Forewing with two basal spots and broad apical band *T. latifascia*
- 3a. Antenna uniformly dark; antennal flagellomeres wider than long; male gonocoxites with 2,3, or 5 apical spines 4
- 3b. Antennae with 5 subapical pale segments; flagellomeres as long as wide; male gonocoxites with 4 apical spines *T. anae*
- 4a. Two radial veins originating from first radial cell of forewing; male gonocoxites with 5 apical spines; fore coxa and femur, posterior third of pronotum, and all pleural and notal region of metathorax orange ... *T. egella*
- 4b. Three radial veins originating from first radial cell of forewing; male parameres with 2 or 3 apical spines; dark pigmentation on fore coxa and femur, posterior third of pronotum, or pleural and total region of metathorax 5
- 5a. Only two radial veins originating from second radial cell of forewing; seven closed cells of forewing beyond base of first radial cell *T. sequella*
- 5b. Three radial veins originating from second radial cell of forewing; eight or nine closed cells of forewing beyond base of first radial cell 6
- 6a. Crossveins and vein forks of forewing margined; male gonocoxites with 2 apical and 1 subapical spine *T. varia*
- 6b. Crossveins and vein forks of forewing not margined; male gonocoxites lacking subapical spine, thus having only two *T. iridella*

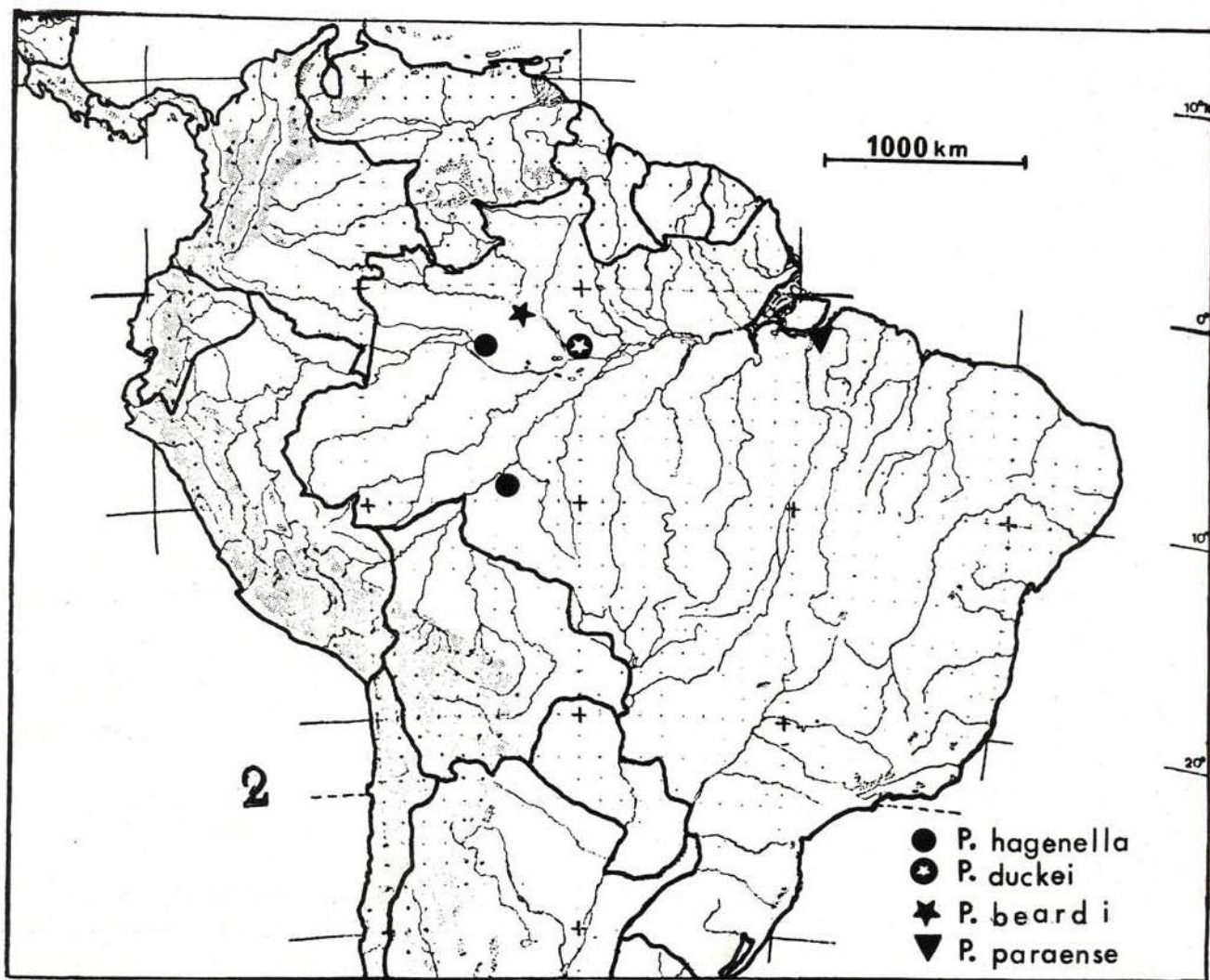
Trichoscelia anae, n. sp.
(Fig. 21-24, Map 3)

Original description based on one male, pinned.

HEAD: Occiput slightly elevated above compound eyes; yellow with piceus markings. Frons pale yellow; labrum piceus. Maxillary and labial palpi pale brown. Antennal segments as long as wide; piceus, except flagellomeres 8-12 from apex yellow; with 32 flagellomeres.



Figures 21-24 — *Trichoscelia anae*, n.sp. 21) right forewing; 22) male paramere; 23) male terminalia, lateral view; 24) male terminalia, ventral view.



Map 2 — Geographical distribution of Amazonian species of *Plega*.

TABLE 2 — Characteristics of species of *Trichoscelia*.

SPECIES	GEOGRAPHICAL DISTRIBUTION	N.° OF PARAMERE SPINES	SPECIES GROUP
<i>T. anae</i> , n. sp.	Amazon	4	varia
<i>T. banksi</i> Enderlein	Mexico	?	?
<i>T. egella</i> Westwood	Amazon	5	fenella
<i>T. fenella</i> Westwood	Amazon	?	fenella
<i>T. iridella</i> Westwood	Amazon to Trinidad	2	fenella
<i>T. latifascia</i> MacLachlan	Amazon	3	fenella
<i>T. nassanovi</i> (Navás)	Peru	?	?
<i>T. remipes</i> (Gerstaecker)	Colombia	?	?
<i>T. santareni</i> (Navás)	Mexico	3	fenella
<i>T. sequella</i> Westwood	Amazon to Guyana	3	fenella
<i>T. varia</i> (Walker)	Argentina and Brazil	3	varia
<i>T. zikani</i> (Navás)	southern Brazil	3	varia

THORAX: Pronotum pale yellow, except anterior margin and two, raised, medial spots piceus. Meso- and metathorax with sclerites piceus centrally, pale yellow peripherally, except metepimeron totally pale yellow. Pilo- sity black dorsally, pale yellow laterally.

LEGS: Fore coxa pale yellow with basal piceus spot and apical piceus band. Fore femur piceus laterally; pale yellow mesally, with basal piceus infuscation. Mesal surface of fore femur with 16 small, black spines; lateral surface with 10 small, black spines. Fore tibia piceus, with three pale yellow bands. First fore tarsal segment as large as terminal three fore tarsal segments together; yellowish brown with reddish brown terminal spine. Tarsal segments 2 and 3 yellow; last tarsal segment piceus with two tarsal claws and arolium. Mid and hind coxae piceus basally, pale yellow apically. Mid trochanter piceus; hind trochanter pale yellow. Mid and hind femur yellow basally; with piceus apical band. Mid and hind tibiae piceus basally and apically; pale yellow medially. Mid and hind tarsal segments yellow basally, gradually becoming piceus apically.

WINGS: Forewing with slight recurrent humeral crossvein. Pterostigma about four times as long as wide; piceus basally and apically, yellow medially. All forewing veins dark brown. Two radial veins originating from forewing first radial cell; three radial veins originating from second radial cell. Wing membrane transparent, with some alternating clear and dark areas along apical margin. Six gradate crossveins. Hindwing pterostigma five times as long as wide, reaching almost to apex; piceus basally and apically, pale yellow centrally. Hindwing membrane transparent, with some infuscation along anal and apical margins. Three radial veins originating from first radial cell; one radial vein originating from second radial cell. Five hindwing gradate veins.

ABDOMEN: Pale yellow with slight infuscation; last three segments somewhat darker. Male gonocoxites curved laterally at apex, with four-pronged termination. Spinasternum complexly coiled (Figs. 22-24).

BODY LENGTH: male, 8 mm.

FOREWING LENGTH: male, 8 mm.

Female unknown.

GEOGRAPHICAL DISTRIBUTION: The holotype male in the Systematic Entomology Collection of INPA, Manaus, is from **Brazil:** Rondonia, BR-364, km 50, 1-XI-1979, J.R. Arias, in a flight trap.

This species at first appears similar to *Plega hagenella*, with its pale subapical segments and antennal form. However, it lacks the distinguishing characteristics of *Plega*, i.e., the subbasal spine and short row of small, mesal spines on the fore femur, and has the recurrent vein crossvein in the hindwing. However, no other species of *Trichoscelia* has this combination of antennal characteristics, as well as the low flagellar segment number. This species is named for my wife, Ana Maria Lira Penny.

***Trichoscelia egella* (Westwood, 1867)**

(Figs. 25-28, Map 3)

Mantispa (*Trichoscelia*) *egella* Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 502.

Trichoscelia egella (Westwood) Gerstaecker, 1888, *Mitt. naturw. Ver. Neu-Vorpomm.*, 19: 120.

Anisoptera amoenula Gerstaecker, 1888, *Mitt. naturw. Ver. Neu-Vorpomm.*, 19: 119.

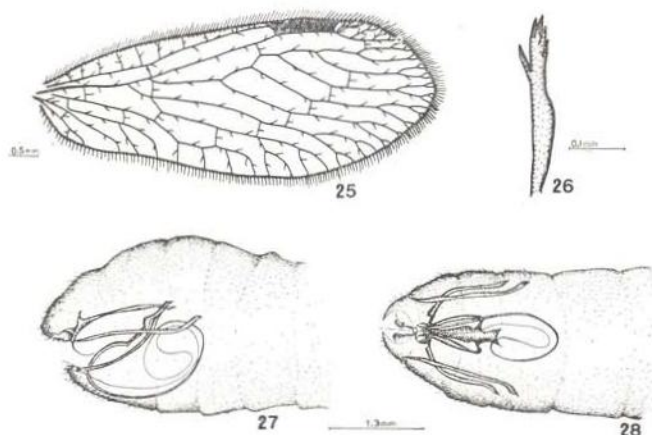
Trichoscelia amoenula (Gerstaecker) Penny, 1977, *Acta Amaz.*, (supl.) 7 (4): 37 new synonymy.

Holotype of *T. egella* in British Museum (Natural History), London. Holotype female of *A. amoenula* in Greifswald Museum, Greifswald, D.D.R.

Present description based on holotype of *T. egella* and 3 males, 2 females, 3? pinned, and one male, 2 females, in alcohol.

HEAD: Occiput slightly elevated above compound eyes; piceus. Frons and majority of mouthparts piceus; except mandibles yellow and labial palpi pale brown. Antennal segments piceus; flagellomeres twice as wide as long, 41 segments.

THORAX: Pronotum piceus anteriorly, orange posteriorly. Meso- and metanota yellow. All pleural sclerites straw yellow. Pilo- sity corresponding to color of sclerites.



Figures 25-28 — *Trichoscelia egella* Westwood. 25) right forewing; 26) male paramere; 27) male terminalia, lateral view; 28) male terminalia, ventral view.

LEGS: All leg segments yellow, except hind tibia piceus. Fore femur bearing 10 small, black spines on lateral surface and 14 small, black spines on mesal surface; no subbasal spine. First fore tarsal segment as long as terminal 3 segments, with large apical spine.

WINGS: Forewing with slightly recurrent humeral crossvein. Pterostigma about four times as long as wide; piceus. All wing veins dark. Two radial veins originating from first radial cell; three radial veins originating from second radial cell. Forewing membrane transparent. Six gradate crossveins. Hindwing membrane transparent. Two radial veins originating from first radial cell of hindwing; one radial vein originating from second radial cell. Two gradate crossveins.

ABDOMEN: Anterior sclerites yellow with longitudinal, dorsal, fuscous stripe. Posterior four segments piceus. Female ovipositor piceus, as long as three abdominal segments. Male gonocoxites apically bearing five spines. Spinasternum complexly coiled (Figs. 26-28).

BODY LENGTH: male, 6.5 mm; female, 7.5 mm.

FOREWING LENGTH: male, 6.5 mm; female, 8.0 — 8.5 mm.

GEOGRAPHICAL DISTRIBUTION: The holotype of *T. egella* was collected by H.W. Bates at **Brazil:** Amazonas, Ega (now Tefé). Holotype of *A. amoenula* was collected at **Brazil:** Pará, Itaituba. Other specimens in the British

Museum (Natural History) are from the type locality and Amazonas, Fonte Boa, 1854, H.W. Bates, 1 male, 1 female, 1 missing abdomen. Specimens in the Systematic Entomology Collection of INPA, Manaus, are from **Brazil:** Amazonas, Reserva Ducke, AM-010, km 26, 6-IX-1978, J.R. Arias, 1 male, 1 female, in flight trap; Reserva Ducke, 20-XII-1977, J.R. Arias, 1 female, in emergence trap; Reserva Ducke, without data, 1 male; Amazonas, BR-174, 66 km n of Manaus, 26-XI-1976, Eloy Castellon, 1 missing abdomen.

HABITAT: All specimens have been collected in primary forest.

This is a rather small, orange species, with few piceus markings on thorax and legs. The reduced number of radial veins and large number of male gonocoxite spines (5) separates this species from all other species of *Trichoscelia*. Westwood, in the original description, stated that this species has pale head and thorax, leading Gerstaecker to describe *A. amoenula* with darker head and thorax. The type of *T. egella* actually does have dark head and thorax, and such differences which exist would easily fall within the normal variation of this species.

Trichoscelia fenella (Westwood, 1852)

(Fig. 29, Map 3)

Mantispa (*Trichoscelia*) *fenella* Westwood, 1852, *Trans. R. ent. Soc. Lond.*, 1: 269.

Trichoscelia fenella (Westwood) Hagen, 1866, *Stett. ent. Ztg.*, 27: 461.

Holotype male in the British Museum (Natural History), London.

Present description based on holotype male.

HEAD: Occiput elevated slightly above compound eyes; piceus. Frons and mouthparts piceus. Antennal segments twice as wide as long; piceus; with 45 flagellomeres.

THORAX: Pronotum dark brown anteriorly and orange over posterior 4/5. Meso- and metanota orange.

LEGS: Completely orange. Fore femur bearing 10 spines laterally and 16 medially.

WINGS: Forewing with two large fuscous spots, one below anterior margin of pterostigma and other along anal margin (Fig. 29). These two spots fused in left forewing. Two radial veins originating from first radial cell; three radial veins originating from second radial cell. Hindwing with slight infuscation at wingtip.

BODY LENGTH: unknown.

FOREWING LENGTH: male, 8 mm.

GEOGRAPHICAL DISTRIBUTION: **Brazil:** Pará, Belém, 1850, H.W. Bates, 1 male.

By its size, orange coloration, and reduced wing venation, *T. fenella* seems to be most closely related to *T. cegella*. However, the distinctive wing pattern immediately sets off this species from all others.

***Trichoscelia iridella* (Westwood, 1867)**

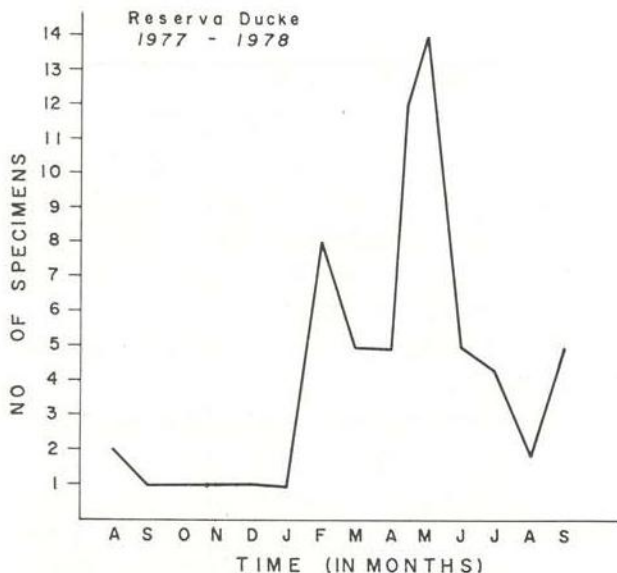
new combination

(Figs. 1, 30-33, Map 3, Graph 1)

Mantispa (*Trichoscelia*) *iridella* Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 503.

***Mantispa* (*Trichoscelia*) *basella* Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 504 new synonymy.**

Lectotype male of *T. iridella* in British Museum (Natural History), London. Paralectotype female of *T. iridella* and holotype male of



Graph 1 — Seasonal distribution of *Trichoscelia iridella* Westwood from a flight trap in Ducke Forest Reserve.

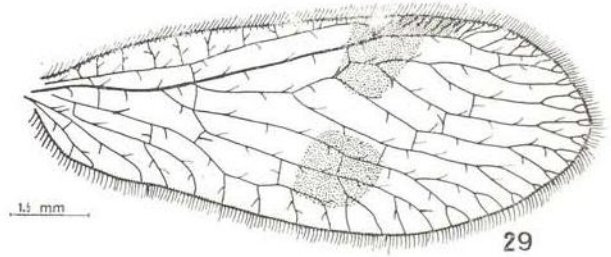


Figure 29 — *Trichoscelia fenella* Westwood, right forewing.

T. basella in the Hope Entomology Collection, Oxford University, Oxford, England.

Present description based on lectotype and paralectotype of *T. iridella*, holotype of *T. basella*, and 7 males, 10 females, 1? pinned; 15 males, 17 females, 1? in alcohol.

HEAD: Occiput slightly elevated, fuscous. Frons and mouthparts fuscous, except mandibles yellowish brown. Antennal segments basally twice as wide as long; piceus; of 35-37 flagellomeres.

THORAX: Pronotum piceus medially, pale yellow laterally, except pale yellow transverse band near posterior margin (sometimes interrupted); eight large setae at anterior margin; two setae medially near caudal margin. Meso- and metanota piceus. Pleural sclerites piceus centrally, pale yellow peripherally. Pilosity black dorsally, pale yellow laterally.

LEGS: Fore coxa pale yellow with fuscous apex and longitudinal fuscous stripe. Fore trochanter quadrate, yellowish. Fore femur yellowish; with longitudinal fuscous stripe on lateral surface (sometimes absent) and another at closing surface with tibia, 8-13 black spines on lateral surface; 13-16 black spines on mesal surface. Fore tibia fuscous. First fore tarsal segment large, fuscous, with large apical spine. Distal three fore tarsal segments together equal in length to first segment; yellow. Two fore tarsal claws and arolium. Mid and hind coxae fuscous; trochanter and femur pale yellow. Mid tibia pale yellow; hind tibia piceus basally, pale yellow distally. Mid and hind tarsi pale yellow.

WINGS: Forewing with slightly recurrent humeral crossvein. Pterostigma about four times as long as wide, fuscous to reddish



Map 3 — Geographical distribution of Amazonian species of *Trichoscella*.

brown. All longitudinal veins uniformly brown. Three radial veins originating from first radial cell; three veins originating from second radial cell. Wing membrane completely transparent. Seven gradate crossveins. Hindwing pterostigma four times as long as wide; membrane transparent; three radial veins originating from first radial cell; one radial vein originating from second radial cell; six gradate crossveins.

ABDOMEN: First two abdominal tergites yellow with medial piceus spot. Tergites III-VIII piceus with longitudinal, medial double row of yellow spots, and yellow lateral margin. Sternites I-VII yellow medially, fuscous late-

rally. Sternites VII and IX completely fuscous. Male gonocoxites with only two apical spines. Spinasternum complexly coiled. Female ovipositor pale yellow, as long as length of last three abdominal segments.

BODY LENGTH: male, 5 — 6.5 mm; female, 5.5 — 7 mm.

FOREWING LENGTH: male, 6.5 — 7 mm; female, 7 — 8 mm.

GEOGRAPHICAL DISTRIBUTION: The lectotype male of *T. iridella* was collected on the Tapajós River by H.W. Bates. The paralectotype of *T. iridella* and holotype of *T. basella* were also collected by H.W. Bates, but only have "Amazons" listed for locality. The Syste-

matic Entomology Collection of INPA, Manaus, has the following material: **Brazil**: Amazonas, Reserva Ducke, 55 specimens collected by J.R. Arias between August, 1977, and September, 1978, in a flight trap and C.D.C. miniature light traps; Rondonia, BR-364, km 50, 28-IX-1979, S.U.C.A.M, 1 female, flight trap; Amazonas, AM-010, km 246, 16-VII-1979, J.R. Arias, 1 ?; Rondonia, BR-364, km 28.5, 26-X-1980, J.R. Arias, 1 male. There are three additional specimens in the U.S. National Museum from **Trinidad**: Montserrat, August, Busck, 1 male; **Ecuador**: Napo, Limoncocha (0° 24'S, 76° 36'W) 15-VIII-1972, Ruth Chadab, 2 males.

TEMPORAL DISTRIBUTION: The material from Reserva Ducke indicates that adults are present all year round, but in highest numbers in May (Graph 1).

HABITAT: All individuals in the INPA collection have been collected in or near primary forest.

This small species of *Trichoscelia* is the most common one in the central Amazon region. The lack of wing markings separates it immediately from *T. fenella* and *T. latifascia*. The coloration of the body is dark, rather than orange, which quickly separates this species from *T. egella* and *T. sequella*. The antennae are completely dark, separating this species from *T. anae*, n.sp. The small size and

wing venation indicate that this species is probably most closely related to two species found in central and southern Brazil, *T. varia* and *T. zikani*. However, *T. zikani* has extensive markings on the forewing, while *T. varia* has dark margining of crossveins and vein forks. The reduced number of male gonocoxite spines (2) also separates *T. iridella* from all other known species. Although the type of *T. basella* has somewhat darker legs than *T. iridella*, the differences are minimal, and probably fall within the range of normal intraspecific variation.

***Trichoscelia latifascia* MacLachlan, 1867**

(Figs. 34-37, Map 3)

Trichoscelia latifascia MacLachlan, 1867, *J. Linn. Soc. Lond.*, 9: 255.

Anisoptera jocosa Gerstaecker, 1888, *Mitt. naturw. Ver. Neu-Vorpomm.*, 19: 117.

Trichoscelia jocosa (Gerstaecker) Penny, 1977, *Acta Amaz.*, (supl.), 7 (4): 37, new synonymy.

Symphrosis thaumasta Navás, 1915, *Ent. Mitt.*, 4: 197.

Trichoscelia thaumasta (Navás) Penny, 1977, *Acta Amaz.*, (supl.), 7 (4): 37, new synonymy.

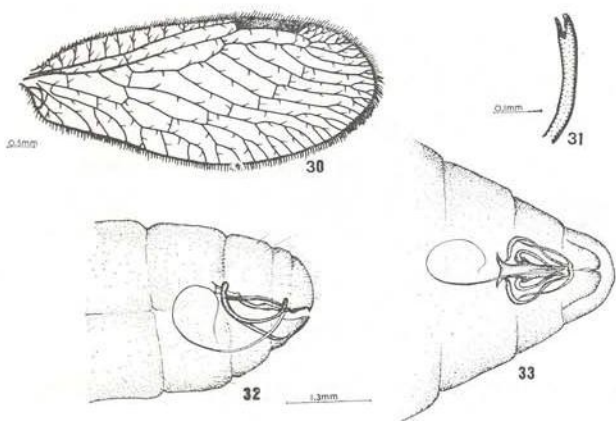
Holotype male of *T. latifascia* in British Museum (Natural History), London. Holotype male of *S. thaumasta* in Bern Museum, Bern, Switzerland. Holotype female of *A. jocosa* in the Greifswald Museum, Greifswald, D.D.R.

Present description based on holotype of *T. latifascia* and 1 male, pinned.

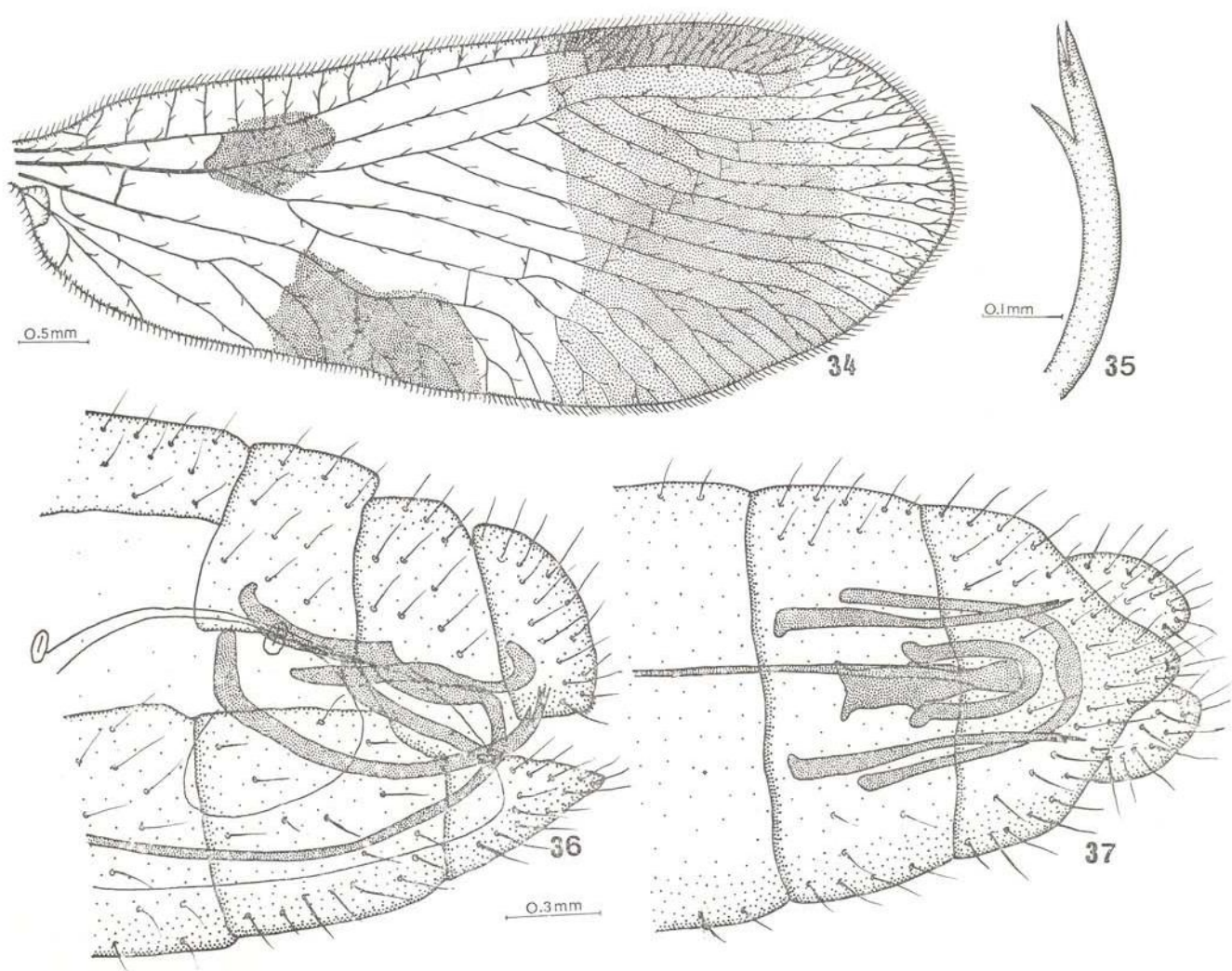
HEAD: Occiput slightly elevated, black. Frons and mouthparts black. Antennal segments subcylindrical, twice as wide as long, tapering only slightly towards apex, with 44 black flagellomeres.

THORAX: Anterior half of pronotum black; posterior half of pronotum and all meso- and metathorax orange. Pility corresponding to color of sclerites.

LEGS: Fore coxa black basally and apically, orange medially. Fore trochanter quadrate, black. Fore femur black basally and distally, orange medially, except narrow dark, longitudinal band connecting basal and distal bands on lateral surface. Row of 21 small black spines on mesal surface of fore femur, row of 9



Figures 30-33 — *Trichoscelia iridella* Westwood. 30) right forewing; 31) — male paramere; 32) male terminalia, lateral view; 33) male terminalia, ventral view.



Figures 34-37 — *Trichoscelia latifascia* MacLachlan. 34) right forewing; 35) male paramere; 36) male terminalia, lateral view; 37) male terminalia, ventral view.

small, black spines on lateral surface. Fore tibia black basally, orange distally. First tarsal segment large, orange, bearing large apical spine. Remaining tarsal segments much smaller than first segment, orange. Two fore tarsal claws and arolium. Mid- and hind coxae and trochanters black; femora black basally, orange distally. Mid tibia orange; hind tibia black. All tarsal segments orange.

WINGS: Forewing with slight recurrent humeral crossvein. Three or four radial branches originating at first radial cell. Two radial veins originating from second radial cell. Basal color of forewing orange, with one elongate black spot along R, between origin of R and origin of Rs. Second black spot along anal margin between MP and 1A. Broad

unbroken, subapical, transverse black band. Forewing apex orange. Hindwing orange, except small black spots on costal and anal margins, black pterostigma and infuscation at hindwing apex.

ABDOMEN: Basal segments orange, becoming piceus at apex. Male spinasternum complexly coiled. Apex of male gonocoxites with three spines (Figs. 35-37).

BODY LENGTH: male, 8 mm.

FOREWING LENGTH: male, 9.5 — 9.9 mm.

GEOGRAPHICAL DISTRIBUTION: The holotype is from **Brazil:** Amazonas, Ega (now Tefé), collected by H.W. Bates, 1 male. Holotype male of *S. thaumasta* Navás is from the same

collecting locality, 26-VI-1906, Adolpho Ducke, in the Bern Museum. Holotype female of *A. jocosa* is from **Brazil**: Pará, Itaituba. One further male in the Museu Paraense Emílio Goeldi is from **Brazil**: Pará, São Francisco, 10-XII-1977, W. França.

T. latifascia cannot be mistaken for any other species of *Trichoscelia* because of its large size, striking orange and black coloration, and especially because of the forewing pattern. Thus, although I have not seen the holotypes of *S. thaumasta* and *A. jocosa*, the illustration of the wing pattern accompanying the original description of *S. thaumasta* is sufficient to be encountered in normal variation within a species; and the color differences used by Gerstaecker to separate *A. jocosa* are so commonly noted that I have no doubt that we are dealing with but one species.

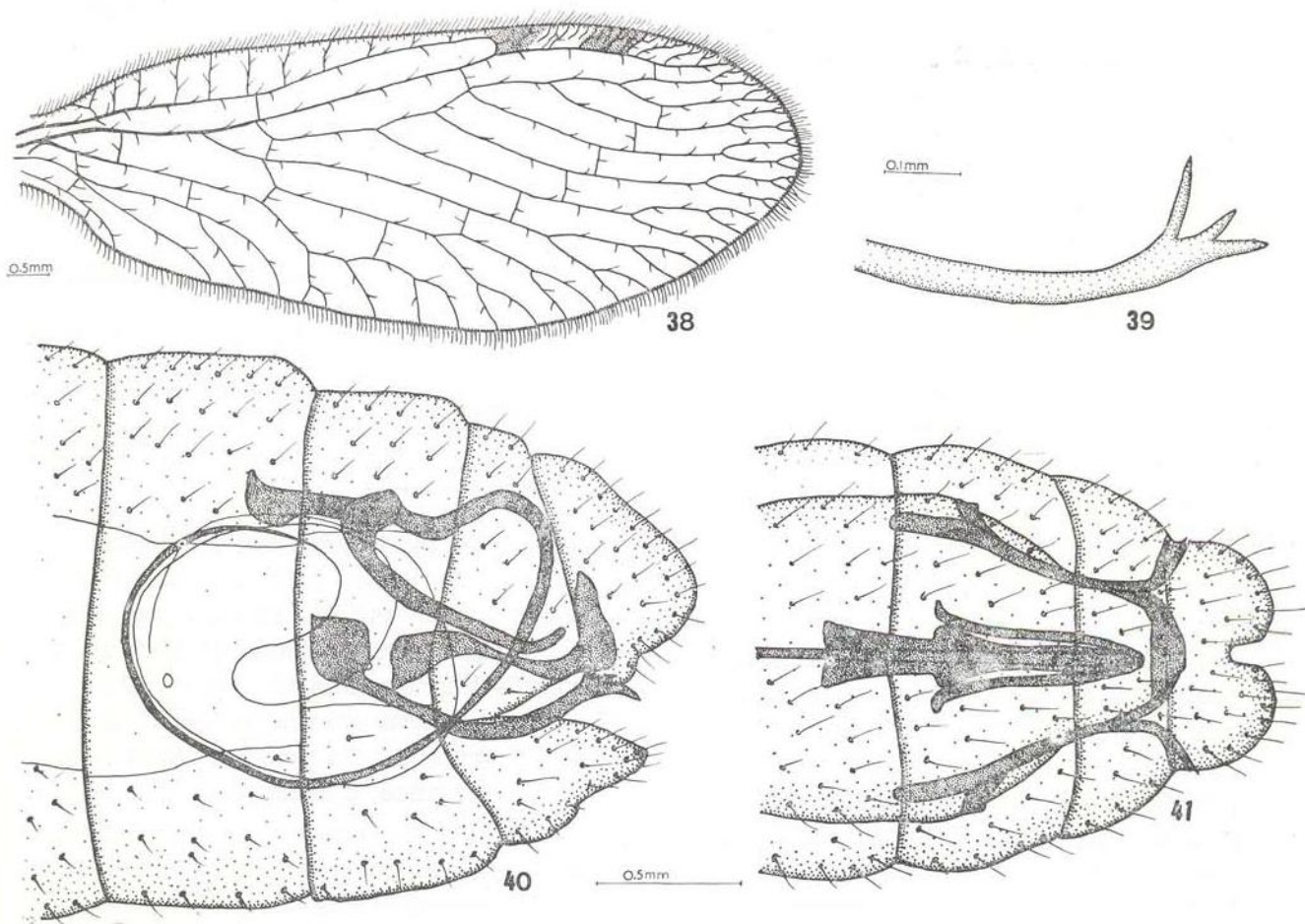
***Trichoscelia sequella* (Westwood, 1867)**
 new combination
 (Figs. 38-41, Map 3)

Mantispia (Trichoscelia) sequella Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 503.

Holotype female in the Hope Entomology Collection, Oxford University, Oxford, England. Present description based on holotype and 3 males, 3 females, pinned.

HEAD: Occiput slightly elevated, yellow with piceus markings. Frons and mouthparts totally straw yellow. Antennae with 47 flagellomeres, twice as wide as long, piceus.

THORAX: Pronotum piceus medially and anteriorly; pale yellow laterally, except transverse band near posterior margin. Meso- and metanota yellow with piceus markings. Pleural sclerites yellow, except for some piceus markings at anterior margin of mesopleuron. Pilosity black dorsally, yellow laterally.



Figures 38-41 — *Trichoscelia sequella* Westwood. 38) right forewing; 39) male parnere; 40) male terminalia, lateral view; 41) male terminalia, ventral view.

LEGS: Fore coxa yellow anteriorly, piceus posteriorly, with piceus apical band. Fore trochanter small, subquadrate, yellow. Fore femur yellow, with mesal and lateral piceus spines on lateral surface; without subbasal spine. Fore tibia piceus. First fore tarsal segment as large as terminal three tarsal segments; yellowish brown, with large apical spine. Distal three fore tarsal segments yellow. Two fore tarsal claws and arolium. Mid- and hind coxae yellowish brown. All other mid- and hind leg segments yellow, except for piceus spot at base of mid tibia.

WINGS: Forewing with slightly recurrent humeral crossvein. Pterostigma about four times longer than wide; black. Longitudinal veins yellow; crossveins and all veins at forewing margin black. Two radial veins originating from first radial cell; three radial veins originating from second radial cell. Wing membrane transparent, except for small piceus spot on anal margin. Eight gradate crossveins. Hindwing pterostigma five times longer than wide, extending to wing apex. Hindwing membrane transparent. Two radial veins originating from first radial cell; one radial vein originating from second radial cell. Four gradate crossveins in hindwing.

ABDOMEN: Dorsally each segment yellow anteriorly and fuscous posteriorly. Sternites completely yellow. Male gonocoxites apically trident-shaped, laterally curved. Male spinasternum complexly coiled (Figs. 39-41).

BODY LENGTH: male, 10 mm; female, 9-10 mm.

FOREWING LENGTH: male, 10 mm; female, 10 mm.

GEOGRAPHICAL DISTRIBUTION: The holotype was collected by H.W. Bates at a locality only specified as "Amazons". There are in the British Museum (Natural History) three additional specimens of this species, two of which apparently were collected by Bates. They are from **Brazil:** Amazonas, Ega (now Tefé), H.W. Bates, 1 male; Amazonas, Fonte Boa, 1856[†] (without collector, but probably Bates), 1 female; and **Guyana:** Tocaro, 1-1921, G.E. Booker, 1 male. There is in the Systematic Entomology Collection of INPA, Manaus, three other specimens: **Brazil:** Amazonas, Manaus, 8-II-1977, R. Pinger, 1 male; Amazonas, Manaus, 27-X-1976, I.S. Gorayeb, 1 female; Amazonas, Reserva Ducke, 17-IX-1981, J.A. Rafael, 1 female.

This is one of the larger species of *Trichoscelia* from Amazonia, with more vivid yellow and orange markings than most species. Although this species has completely transparent wings, like *T. egella* and *T. iridella*, it has much more orange and yellow on the body than the latter species, and larger size than both species. The male gonocoxites are also different than these two species. The species most closely related to *T. sequella* is probably *T. latifascia*, because of the body size and coloration, and number and form of male gonocoxites spines. In fact, these two species could be the same. However, the distinctive wing pattern of *T. latifascia* is lacking in *T. sequella*.

Trichoscelia varia (Walker, 1853)

(Figs. 42-45, Map 3)

Raphidia varia Walker, 1853, *Cat. Brit. Mus. Neuropt.*, p. 212.

Trichoscelia varia (Walker) Hagen, 1861, *Smithsonian misc. Collns.*, 4: 323.

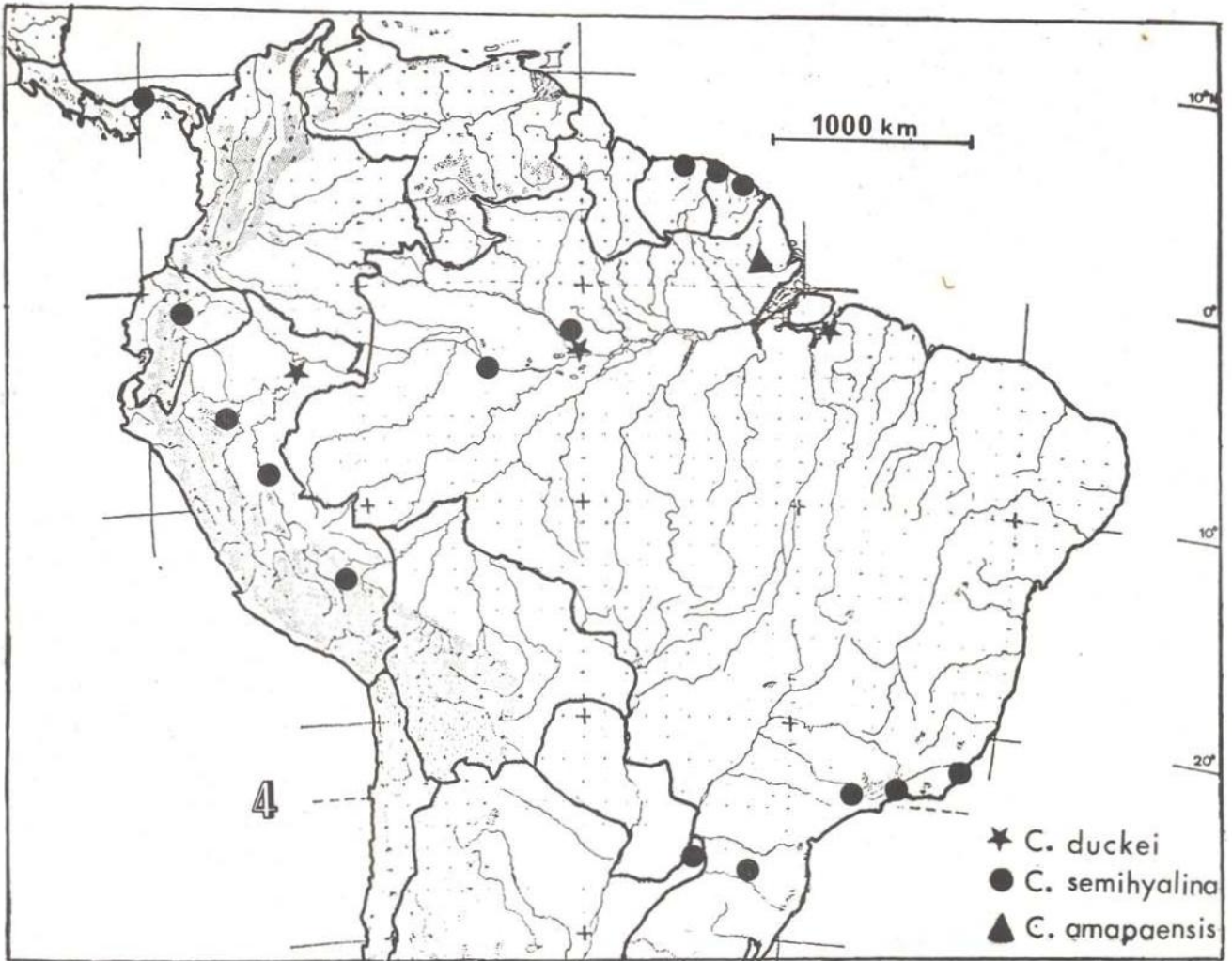
Symphrosis varia (Walker) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 374.

Mantispa myrapetrella Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 505.

Symphrosis myrapetrella (Westwood) Hagen, 1877, *Stett. ent. Ztg.*, 38: 210.

Holotype of unknown sex of *Raphidia varia* Walker in the British Museum (Natural History). Lectotype male, paralectotype female, and six other paralectotypes of *Mantispa myrapetrella* Westwood in the Hope Entomology Collection, Oxford University, Oxford, England. Present description based on types and 39 males, 37 females, pinned.

HEAD: Occiput pale yellow with four spots fuscous, often merging. Frons pale yellow, with transverse fuscous stripe below antennae. Maxillary palpi piceus. Antennae of 26-28 flagellomeres; as long as wide; with thin, pale yellow to black setae.



Map 4 — Geographical distribution of Amazonian species of *Climaciella*.

THORAX: Pronotum piceus medially, pale yellow laterally; with many medial black setae. Meso- and metanota piceus medially, pale yellow laterally; occasionally with medial, longitudinal, pale yellow stripe. Pleural areas piceus.

LEGS: Fore coxa pale yellow, becoming darker apically. Fore trochanter pale yellow. Fore femur pale yellow dorsally, becoming fuscous near closing face with fore tibia; with 9-10 black lateral spines, 11-13 black medial spines; lacking large subbasal spine. Fore tibia alternating fuscous and pale yellow in checkerboard pattern. First fore tarsal segment pale yellow, with subapical spinal process. Second to fourth fore tarsi combined smaller than first segment, pale yellow, with 2 apical claws and arolium. Mid- and hindlegs

with pale yellow coxae, trochanters, and femora; tibia basally piceus, apically pale yellow; five tarsal segments pale yellow.

WINGS: Forewing transparent, with dark margining along basal crossveins and some apical vein forks (Fig. 42). Pterostigma dark basally and apically, pale yellow medially. Three or four radial veins originating from first radial cell; two or three radial veins originating from second radial cell. Second radial cell apically curved. Longitudinal veins alternating yellow and fuscous pattern. Recurrent medial vein of hindwing with crossvein.

ABDOMEN: Segments dorsally and ventrally piceus, laterally pale yellow. Male spinasternum complexly coiled. Gonocoxites apically bearing three spines (Figs. 43-45).

VARIATION: There is great variation in the extent of pigmentation along crossveins and at vein forks. Pattern of head, thorax and legs also varies according to degree of pigmentation. The antennal segments can be almost round, to approaching the state of twice as wide as long, and each flagellomere may have sparse to dense pilosity. The denser the pilosity, the darker the pilosity.

BODY LENGTH: male, 5 mm; female, 5-7 mm.

FOREWING LENGTH: male, 7 mm; female, 8-9 mm.

GEOGRAPHICAL DISTRIBUTION: This is a southern Brazilian species that reaches the southern part of the Amazon Basin. On the type specimen is a label reading "Ecoria", which I have been unable to locate on any maps. The type of *Mantispa myrapetrella* also has no locality label, although in the original description Westwood lists South America. In the Vienna Museum are 25 specimens listed simply as being from **Brazil**. The Paris Museum has numerous specimens from **Argentina** and São Paulo state in southern **Brazil**. The Systematic Entomology Collection of INPA, Manaus, has specimens from Rio Grande do Sul and Santa Catarina states in southern **Brazil**. The U.S. National Museum has specimens from **Argentina** and Ceará state in northeastern **Brazil**. In addition to the type specimen, in the British Museum (Natural History) are

specimens from **Uruguay** and **Brazil**: Mato Grosso, 12° 50'S, 51° 47'W, 12-X-1968, O.W. Richards, 2 females. Enderlein (1910) and Navás (1934) list this species from Venezuela and Suriname, respectively, although these records must be considered doubtful.

HOST ASSOCIATION: The specimens collected by O.W. Richards were reared from the nest of *Polybia ruficeps*. The Uruguay specimens were reared from the nest of *Myrapetra scutellaris*, as were some specimens in the Paris Museum from São Paulo. Specimens in the Vienna Museum were also reared from *Polybia* nests.

This is one of the smaller species of *Trichoscelia*. The three gonocoxite spines separates it from all other small species of *Trichoscelia* for which spinal number is known, except *T. zikani*. *T. varia* also has distinctive alternating dark-pale pattern on forewing longitudinal veins, and margining of crossveins. However, *T. zikani* has much of this same wing pattern, and the only difference is in the dark pigment spots on the forewing of this species. It could be that *T. zikani* is a very darkly pigmented form of *T. varia*.

Mantispinae Leach, 1815

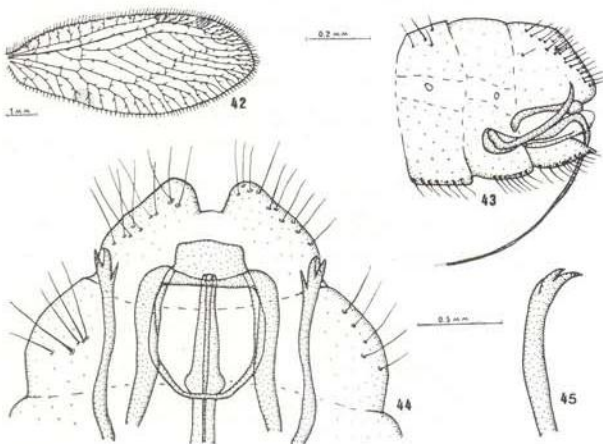
Mantispidae Leach, 1815, *Edinb. Encyclop.*, 9: 139.

Mantispini Navás, 1909, *Mems R. Acad. cienc. artes Barcelona*, 7 (10): 484.

Mantispinae Enderlein, 1910, *Stett. ent. Ztg.*, 71: 341.

TYPE GENUS: *Mantispa* Illiger (1798)

Mantispinae is the most derived subfamily of mantid-flies, with relatively long pronotum, and reduced number of fore tarsal claws. This subfamily is distributed world-wide, with many described genera. However, in a recent review of the taxonomic classification of New World Mantispidae, Penny (1982) listed three genera and four species groups of "Mantispa" in the Neotropical Region, of which all but one of these exist in Amazonia. In studying male genitalia it was noted that the species of *Necyla* described from Central America is actually more closely related to other American members of "Mantispa" than to African and Asian species of *Necyla*. In order to



Figures 42-45 — *Trichoscelia varia* (Walker). 42) right forewing; 43) male terminalia, lateral view; 44) male terminalia, ventral view; 45) male paramere.

present some semblance of a natural and organized classification, I have separated the included species into species groups of the genus *Mantispa*, which are of comparable rank to the other named genera *Entanoneura* and *Climaciella*. Only further study of Old World species will elucidate the true names of these "species groups" of *Mantispa*, a study which is not possible for me at this time.

Thus, six "groups" of Mantispinae are known from this region, which can be separated using the following key.

KEY TO AMAZONIAN GENERA AND SPECIES GROUPS OF MANTISPINAE

- 1a. Cubitus of hindwing nearly straight and never coming close to first anal vein *Climaciella*
- 1b. Cubitus of hindwing bending sharply towards first anal vein, then bending sharply away again 2
- 2a. Male ectoprocts bearing two medial projections, one of which can be quite long "gracilis" group
- 2b. Male ectoprocts bearing one medial projection, or with low, flat field of small spines 3
- 3a. Male ectoprocts elongate and pointed; hypomeres very thin and elongate "phthisica" group
- 3b. Male ectoprocts extending only slightly beyond ninth sternite, and apically rounded; male hypomeres, if present, not thin and elongate 4
- 4a. Male ectoprocts bearing medial pointed projection; hypomeres present and attached to spinasternum, although small "costalis" group
- 4b. Male ectoprocts with or without medial projections, sometimes with low, flat, medial field; hypomeres absent 5
- 5a. Crescent-shaped or semicircular marks on prozonal region of pronotum *Entanoneura*
- 5b. Prozonal region of pronotum uniformly colored, or occasionally with darker spots along lateral margin, but without pale semicircular marks . "minuta" group

"gracilis" species group

Like the "phthisica" group, this species group has well-developed hypomeres and a sclerotized median process of the spinasternum. However, unlike the "phthisica" group, the "gracilis" group has very distinctive projections on the medial surface of the ectoprocts, in some species becoming quite elaborate. Three species are included in this group from the Amazon Basin, and can be separated using the following key.

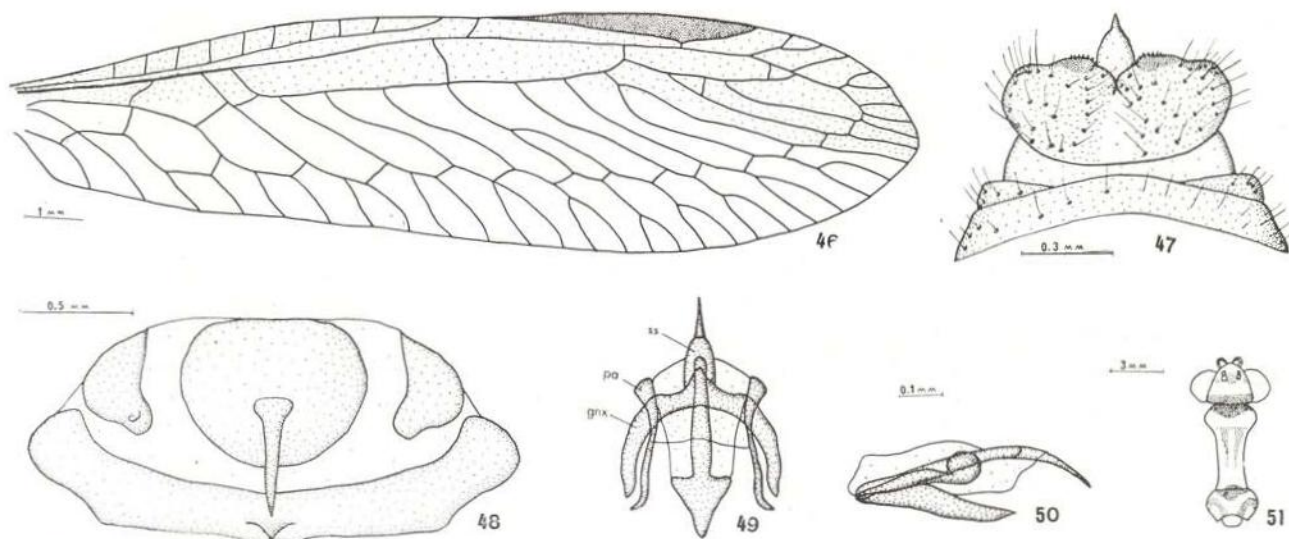
KEY TO THE AMAZONIAN SPECIES OF THE "GRACILIS" GROUP

- 1a. Projection of the male ectoprocts three or more times longer than the second projection; the two projections joined by a broad basal plate 2
- 1b. Projection of the male ectoprocts only two times as long as the second projection; projections isolated from each other, without basal sclerotized plate *M. gracilis*
- 2a. Longer projection of male ectoprocts bearing three apical teeth *M. moulti*
- 2b. Longer projection of male ectoprocts bearing one apical tooth and several very fine hairs *M. lineaticollis*

***Mantispa gracilis* Erichson, 1839**
(Figs. 84-88, Map 5)

- Mantispa gracilis* Erichson, 1839, *Z. Ent.*, 1: 169.
- Mantispa trilineata* Navás, 1914a, *Broteria*, 12: 230, new synonymy.
- Mantispa bruchi* Navás, 1916, *Mems R. Acad. Cienc. Artes Barcelona*, 12 (7): 134.
- Mantispa calceata* Navás, 1917, *Mems R. Acad. Cienc. Artes Barcelona*, 13 (26): 401.
- Mantispa mista* Navás, 1923, *Arx. Inst. Ciênc.*, 7: 196.
- Mantispilla mista* (Navás) Navás, 1929, *Revta Soc. ent. argent.*, 2: 223.
- Mantispa gounellei* Navás, 1934, *Revta Ro Acad. Cienc. exact. fis. nat. Madr.*, 31: 17, new synonymy.

Whereabouts of types of *M. gracilis* unknown. Holotype female of *M. trilineata* Navás in the British Museum (Natural History), London. Holotype female of *M. bruchi* and holotype male of *M. gounellei* in the Muséum national d'Histoire naturelle, Paris, France.



Figures 46-51 — *Climaciella amapaensis*, n.sp. 46) right forewing; 47) male terminalia, dorsal view; 48) male genitalia, caudal view; 49) male genitalia, ventral view; 50) male genitalia, lateral view; 51) head and thorax, dorsal view.
gnx = gonarcus, pa = paramere, ss = spinasternum.

Holotype, without abdomen, of *M. mista* in the Buenos Aires Museum. Whereabouts of the type of *M. calceata* unknown.

Present description based on holotypes of *M. gounellei*, *M. trilineata*, *M. bruchi* and 21 males, 15 females, pinned.

HEAD: Occiput slightly depressed; yellow laterally, with variable piceus markings medially. Frons and labrum yellow, with piceus medial line. Mandibles black. Maxillary and labial palpi piceus. Antennal scape piceus above, yellow below; pedicel and 26-27 flagellomeres piceus. Flagellomeres about as wide as long.

THORAX: Pronotum expanded anteriorly; uniformly yellowish brown. Meso- and meta-nota piceus with two longitudinal stripes yellow. Pleural areas yellow, except piceus between mid coxa and posterior margin of prothorax.

LEGS: Fore coxa yellow basally, becoming fuscous apically. Apical foreleg segments all fuscous. Numerous tubercles and one very large central spine on fore femur. First fore tarsal segment 50% longer than other four tarsal segments combined. One fore tarsal claw and without arolium. Mid coxa piceus; all other leg segments yellow.

WINGS: Forewing without recurrent humeral crossvein. One to five subcostal crossveins.

Pterostigma very elongate; expanded apically; fuscous. All veins yellow near base, dark brown to black apically. Forewing membrane transparent, except subcostal area occasionally piceus. Two radial veins originating from first radial cell of hindwing; Ten or eleven gradate crossveins in hindwing. Cu bends towards 1A until briefly touching, then bends sharply away again.

ABDOMEN: Yellow with medial piceus stripe on dorsum. Male genitalia, with dark stripe extending over the ectoprocts. Ectoprocts bearing two finger-like projections at posterior-medial margin; both pair of projections bearing apical teeth. Ninth sternite broadly rounded, with medial fuscous stripe. Ninth gonocoxites not extending beyond gonarcus. Gonarcus bearing two, ventro-lateral lobes on either side; the more medial lobe being much larger than the more lateral lobe. Spinasternum with ventral, quadrate, spinous area; (medial process) lateral margin bearing only short hypomeres (Figs. 85-88).

BODY LENGTH: male, 9-11 mm; female, 10-13 mm.

FOREWING LENGTH: male, 10-11 mm; 9-15 mm.

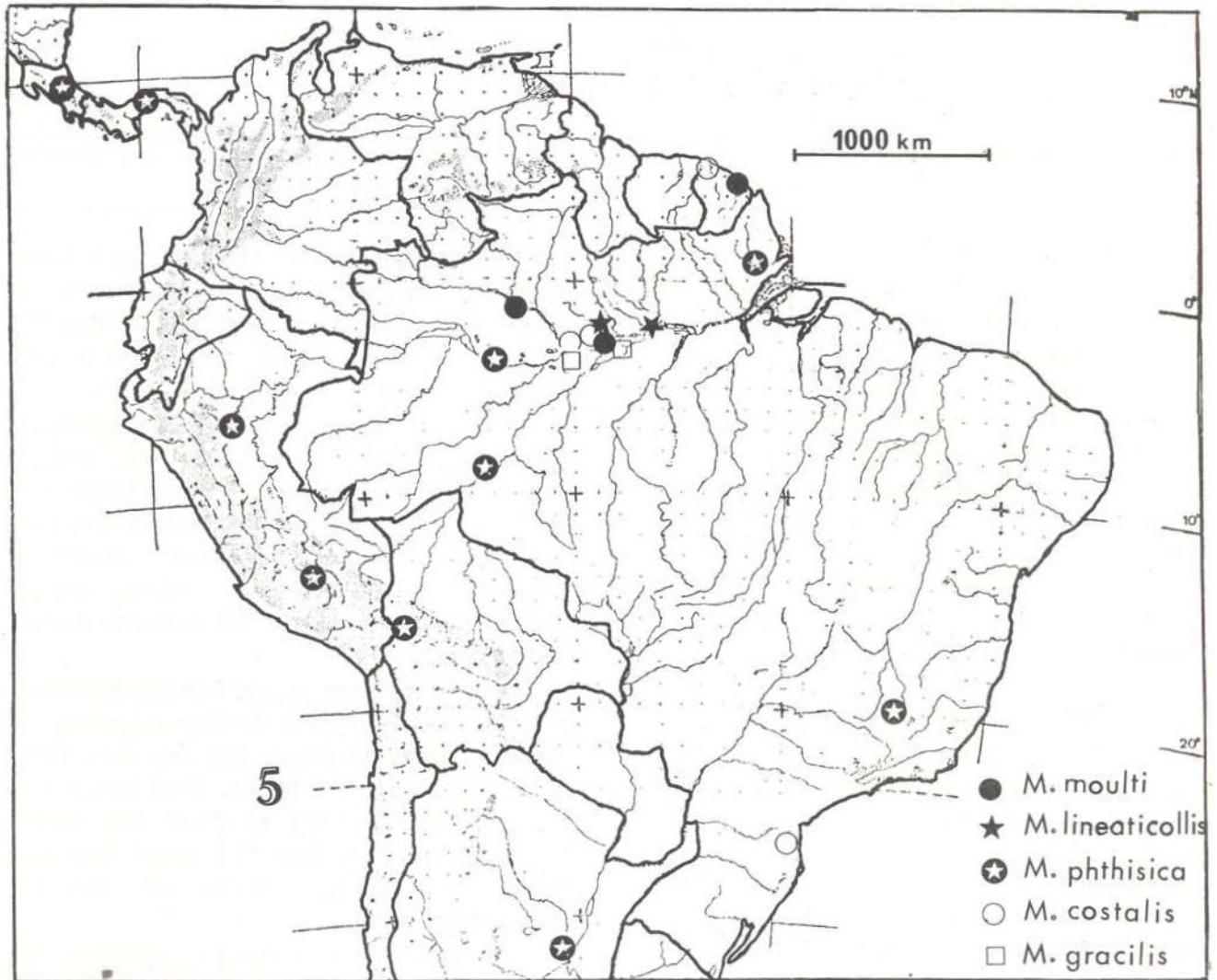
GEOGRAPHICAL DISTRIBUTION: This species was originally described from southern **Brazil**; and was subsequently described by Navás

from **Argentina**, under various names. It appears to be quite common in southern Brazil and northern Argentina, but becomes progressively less common farther north. In the Systematic Entomology Collection of INPA, Manaus, there is only one Amazonian specimen from **Brazil**: Amazonas, Careiro, 3-XII-1961, Mozarth, 1 male. In the Museu de Zoologia Universidade de São Paulo is a series of this species (6 males) from Amazonas, Ilhas do Careiro, Lago do Rei, 12-IV-1967; and Amazonas, Mun. Itacoatiara, Ilha Grande do Serpa, X-1969, 1 female.

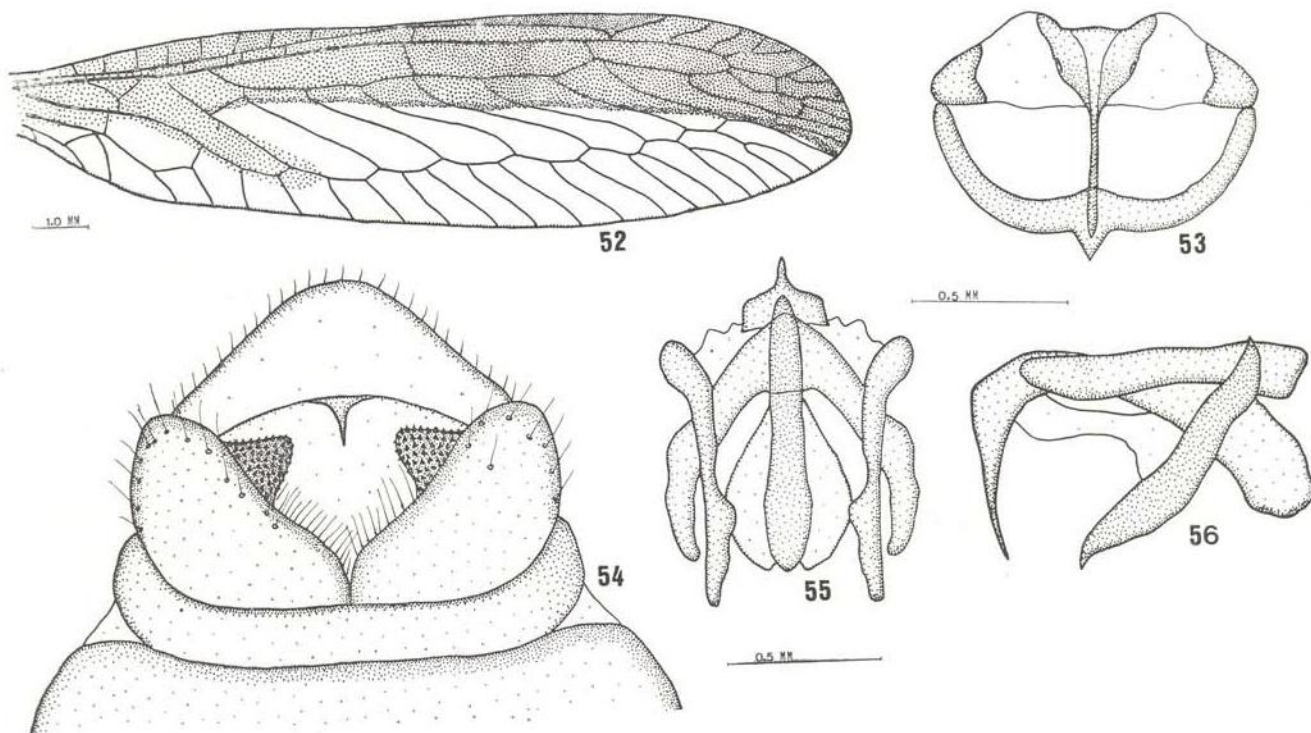
VARIATION: The total number of forewing radial veins can vary from five to eight, and within this limit, the number varies from each radial cell in the following formulae: 1-2-2,

1-3-2, 1-3-3, 1-2-3, 2-2-2, 2-3-2, 2-2-3, and 2-2-4. However, fully 2/3 of the specimens demonstrate the 1-3-3 or 1-3-2 pattern. Navás relied very heavily on wing patterns for species identifications, and thus the large number of synonyms.

This species is quite distinct in several respects, although the general body and wing pattern are similar to *Mantispa axillaris* and *M. moulti*. I have seen no other species of *Mantispa* that has a medial, dorsal line which bifurcates over the male ectoprocts. The ventral, medial line is also uncommon. However, the most distinctive feature is the second finger-like lobe at the posterior-medial margin of the ectoprocts. No other mantispid has this second lobe.



Map 5 — Geographical distribution of some Amazonian species of *Mantispa*.



Figures 52-56 — *Climaciella duckei* Navás. 52) right forewing; 53) male genitalia, caudal view; 54) male genitalia, dorsal view; 55) male genitalia, ventral view; 56) male genitalia, lateral view.

Williner & Kormilev (1958) synonymized the species *M. bruchi* Navás, *M. calceata* Navás, and *M. mista* Navás with *M. gracilis* Erichson. Because of the variability in radial sectors within this species, I feel that two other species, for which I have examined the types, must also be included in this synonymy. They are *M. trilineata* Navás and *M. gounellei* Navás, which vary from *M. gracilis* in no other respects than the number and origin of radial sectors of the forewing; however, easily falling within the normal variation of this latter species.

***Mantispa moulti* Navás, 1909**
(Figs. 62-67, Map 5)

Mantispa moulti Navás, 1909, *Mems R. Acad. cienc. artes Barcelona*, 7: 481.

Lectotype male and paralectotype female in the Paris Museum. Presente description based on types and 4 males, 4 females, pinned.

HEAD: Occiput not raised above level of compound eyes; yellow with piceus markings. Frons and labrum yellow with piceus medial

line. Mandibles black. Maxillary and labial palpi piceus. Antennal scape piceus above, yellow below; pedicel and 32 flagellar segments piceus. Flagellomeres about 50% wider than long.

THORAX: Pronotum expanded anteriorly; completely brown, except for thin, medial, piceus line at posterior margin. Meso- and metanota yellow with medial piceus longitudinal line and piceus along lateral margin of mesonotum. Pleural areas yellow, except piceus between mid coxa and posterior margin of prothorax.

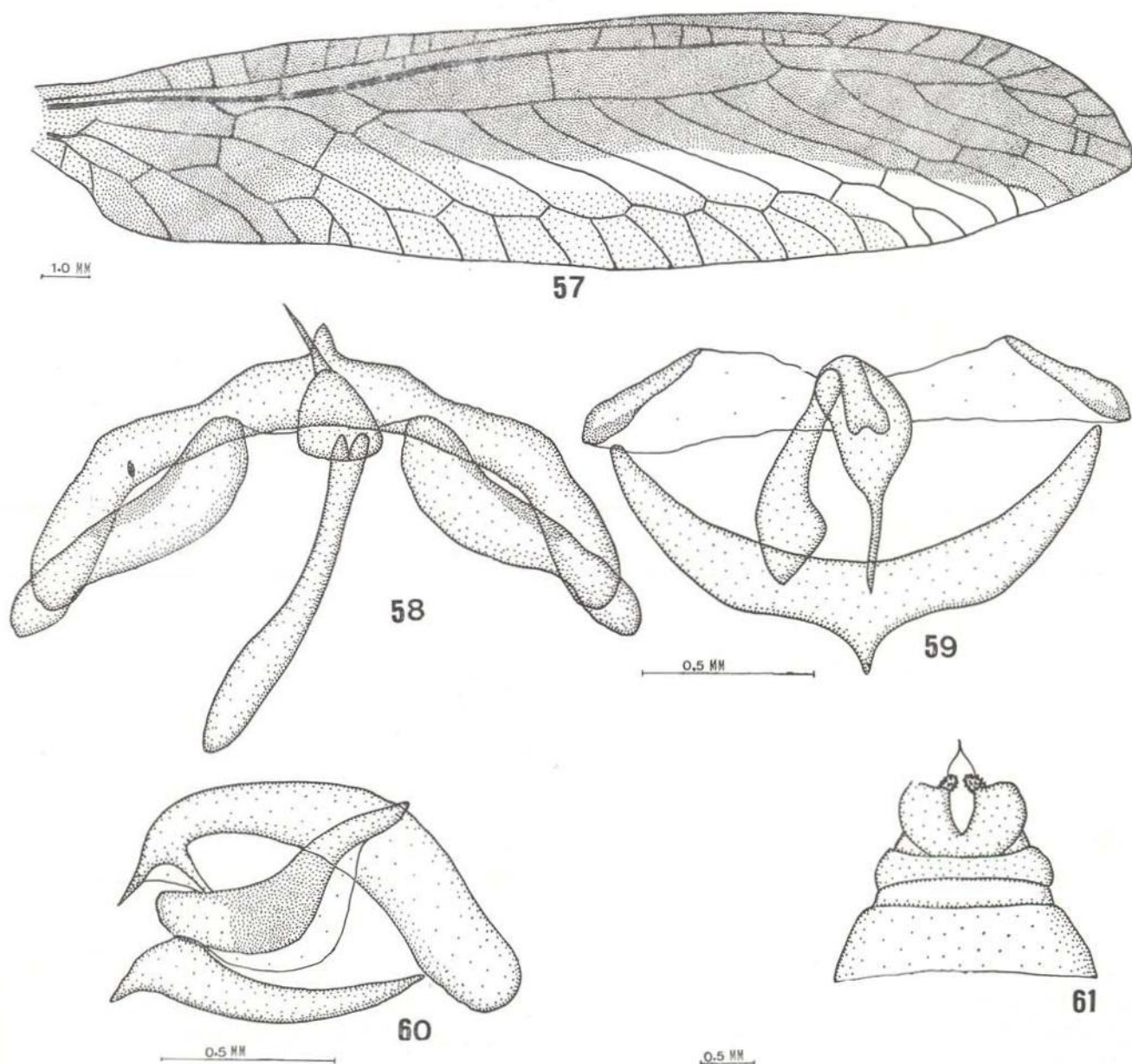
LEGS: Fore coxa yellow basally, becoming fuscous apically. Apical foreleg segments all fuscous. Three tubercles and one very large central spine on fore femur. First fore tarsal segment twice as long as other four tarsal segment combined. One fore tarsal claw and no arolium. Mid coxa piceus; all other leg segments yellow.

WINGS: Forewing without recurrent humeral crossvein. Four or six subcostal crossveins. Pterostigma very elongate; slightly expanded apically; fuscous. All veins yellow near base,

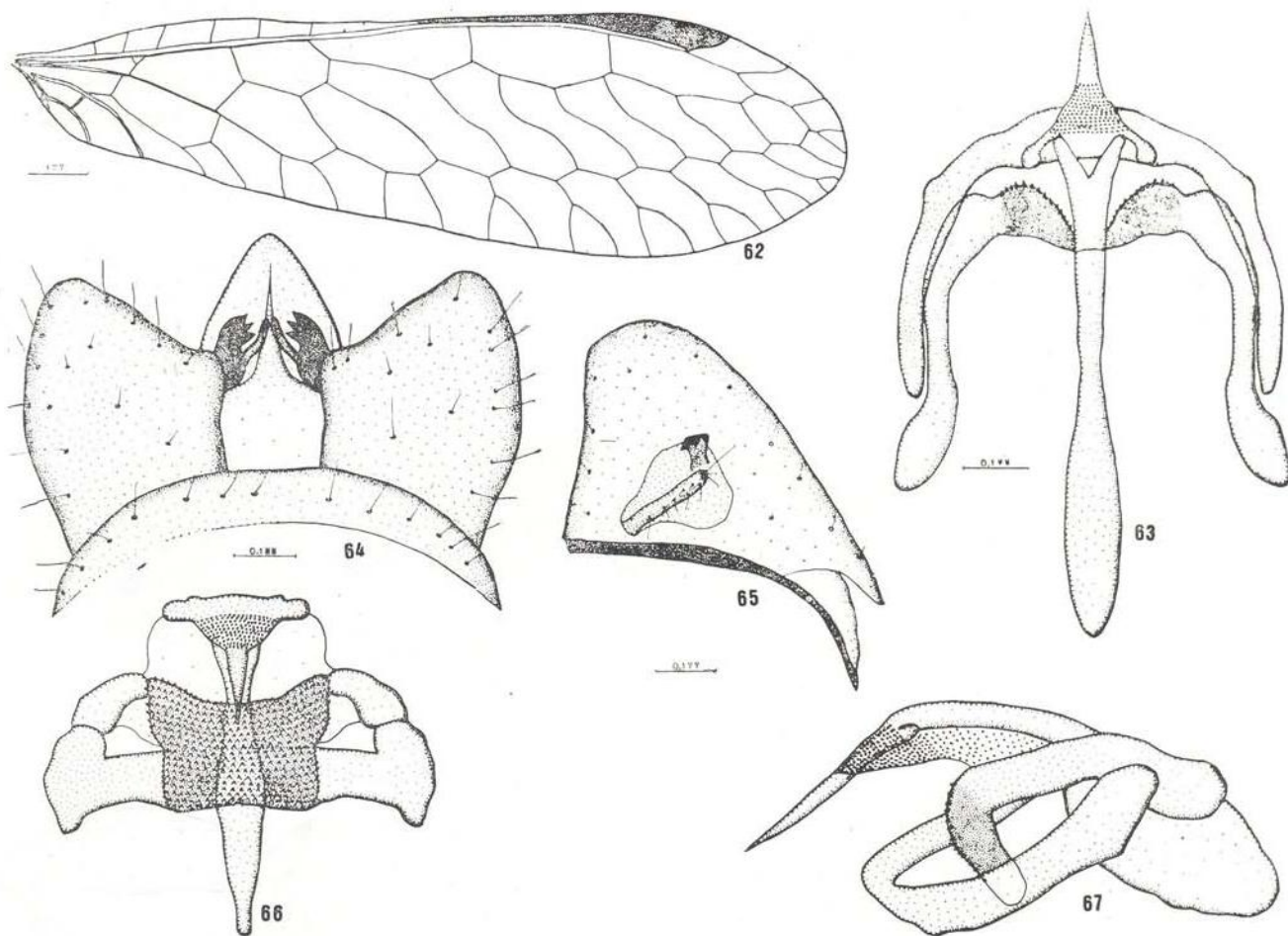
dark brown to black distally. Forewing membrane fuscous in subcostal area and near base of Cu; other membranous areas transparent. Two radial veins originating from first radial cell of forewing; three veins from second radial cell; three veins from third radial cell. Twelve gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing fuscous in costal and subcostal areas; transparent in rest of wing. Three radial veins originating from first radial cell of hindwing;

three veins from second radial cell; three veins from third radial cell. Twelve gradate crossveins in hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Yellow, except medial, dorsal, longitudinal, piceus line. Ectoprocts of male genitalia elongate, with postero-medial projection. Projection flattened laterally, with four basal spines; medially elongate, with apical anterior-dorsal hook bearing apical



Figures 57-61 — *Climaciella semihyalina* (Serville). 57) right forewing; 58) male genitalia, ventral view; 59) male genitalia, caudal view; 60) male genitalia, lateral view; 61) male terminalia, dorsal view.



Figures 62-67 — *Mantispa moulti* Navás. 62) right forewing; 63) male genitalia, ventral view; 64) male terminalia, dorsal view; 65) male ectoproct, medial view; 66) male genitalia, caudal view; 67) male genitalia, lateral view.

setae. Aedeagus complex consisting of ninth gonocoxites which do not reach to or beyond gonarcus; sclerotized, quadrate medium process dorsad of spinasternum; and gonarcus with two ventro-lateral lobes on each side, without medial lobes (Figs. 63-67). Hypomeres present.

BODY LENGTH: 18-22 mm.

FOREWING LENGTH: 16-18 mm.

GEOGRAPHICAL DISTRIBUTION: The two types are from **French Guyana:** Passoura, 1907, E. Moulton, 1 male, 1 female (MNHN). Further material in the Systematic Entomology Collection of INPA, Manaus, is from: **Brazil:** Amazonas, AM-010, km. 246, 15-16-VII-1979, J.R. Arias, 4 males, 2 females; 15 km se of Barcelos, 14-I-1978, N.D. Penny, 1 female; and Manaus, 11-I-1978, N.D. Penny, 1 female.

HABITAT: All Amazonian specimens have been collected with light traps in primary forest.

This species looks identical to other fuscous species of *Mantispa* on the basis of body coloration. The number of species with this configuration of radial sector veins reduces the number of possible confusing species, but only by examining the male genitalia can accurate identification be made at this time. The only other species of *Mantispa* with elongate, non-spinous structures on the tenth tergites is *Mantispa lineaticollis* Enderlein, from which it can be separated by the smaller size and reduced wing venation of the latter species, as well as the shape of the elongate projection, and form of aedeagal complex.

Mantispa lineaticollis Enderlein, 1910

Mantispa lineaticollis Enderlein, 1910, *Stett. ent. Ztg.*, 71: 348.

Holotype male in Stettiner Zoologisches Museum, Stettin, Poland.

Description based on one male, pinned.

HEAD: Occiput slightly depressed; fuscous with yellow anteriorly and laterally. Frons and labrum yellow, with medial piceous stripe wider on labrum. Mandibles reddish brown. Maxillary and labial palpi yellowish. Antennal scape fuscous above, yellow below; pedicel and 30 flagellar segments piceous. Flagellomeres about as long as wide.

THORAX: Pronotum expanded anteriorly; yellowish brown, becoming fuscous on prozona. Prothorax ventrally yellow. Mesonotum piceous, with anterior transverse band, two longitudinal bands, and scutellum yellow. Metanotum completely piceous. Pleural areas yellow.

LEGS: All leg segments yellow, except medial surface of fore femur fuscous centrally. Numerous tubercles and one large central spine on fore femur. First fore tarsal segment 50% longer than four tarsomeres combined. One fore tarsal claw, and without arolium.

WINGS: Forewing without recurrent humeral crossvein. Six subcostal crossveins. Pterostigma very elongate; expanded apically; yellowish basally, reddish brown apically. Veins yellow basally and along R_1 to pterostigma; all other veins black. Forewing membrane transparent. One radial vein originating from first radial cell of forewing; two or three veins from second radial cell; two or three veins from third radial cell. Nine gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing transparent. Two radial veins originating from first radial cell of hindwing; two veins from second radial cell; two or three veins from third radial cell. Nine gradate crossveins of hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Yellow, without markings. Male ectoprocts elongate, with slight indication of

medial lobe. Postero-medial projection of tenth tergite consisting of elongate projection with three apical teeth, and thinner, non-dentate lobe at ventral margin of connecting flat plate. Male ninth gonocoxites not extending beyond gonarcus; connected medially with dentate, heavily-sclerotized, quadrate medial process. Gonarcus with latero-ventral lobe; without medial lobe (Figs. 69-73). Hypomeres present. Female unknown.

BODY LENGTH: male, 11.5 mm.

FOREWING LENGTH: male, 12 mm.

GEOGRAPHICAL DISTRIBUTION: The holotype male is from **Brazil:** Pará, Faro, 1 male. A male in the INPA Systematic Entomology Collection is from **Brazil:** Amazonas, AM-010, km 244, 19-I-1977, N.D. Penny.

This species is very similar to the *gracilis* species group of *Mantispa* and the other member of this group, *M. moulti*, in basic body coloration. The wing pattern is similar to that of *M. gracilis* Erichson, which usually, but not always, has somewhat darker body coloration. The male genitalia of *M. lineaticollis* are distinctive with the elongate projection of the ectoprocts being shared only with *M. moulti*. However, this latter species has the configuration of this projection totally different. The type of this species was not seen, and the description is based on another male which fits the original description. Although I have seen no other Amazonian species which would fit this description, there is a possibility of error in identification of this associated male.

phthisica species group

This species group can be characterized as mantispids of medium size (forewing length 13-18 mm); with dark body coloration; transparent wings without markings and elongate, pointed male ectoprocts. Male spinasternum has very elongate, finger-like, hypomeres. The ninth gonocoxites are apically swollen. The gonarcus has a medial, rounded projection. The only species presently placed in this group is *Mantispa phthisica* Gerstaecker.

Mantispa phthisica Gerstaecker, 1885

(Figs. 74-78, Map 5)

Mantispa phthisica Gerstaecker, 1885, *Mitt. naturw. Ver. Neu-Vorpomm.*, 19: 35.

Entanoneura phthisica (Gerstaecker) Handeschin, 1960, *Rev. Suisse Zool.*, 67: 526.

Type in the Greifswald Museum, Greifswald, D.D.R. Present description based on 2 males, 7 females, pinned.

HEAD: Occiput depressed between eyes; diffuse fuscous with eye margins, posterior margin, and two central spots behind antennae yellowish. Frons piceus with lateral margins and sometimes central triangle yellow. Mandibles black. Maxillary and labial palpi fuscous. Antennal scape fuscous above, yellow below; pedicel and 39-45 flagellar segments piceus. Flagellomeres as long as wide.

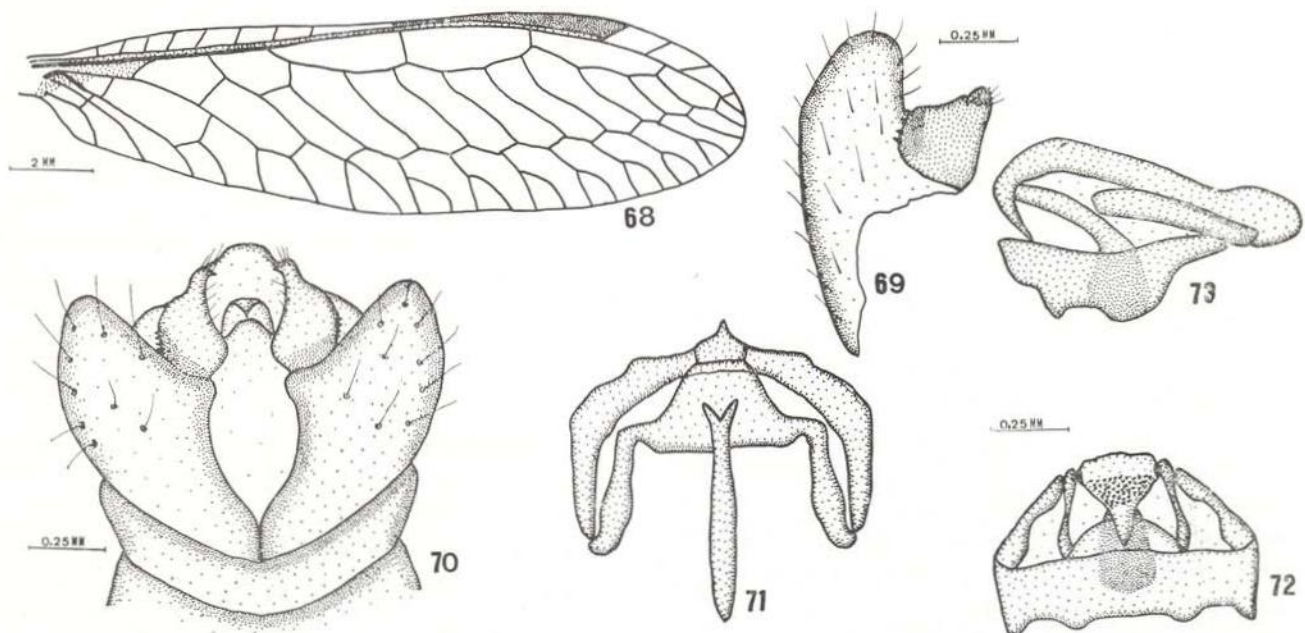
THORAX: Pronotum expanded anteriorly; yellow, with medial stripe, two lateral stripes and two lateral spots piceus. Meso- and metanota piceus with medial, yellow stripe. Lateral sclerites piceus centrally, yellow laterally.

LEGS: All leg segments fuscous, usually slightly darker near base and apex. Fore femur

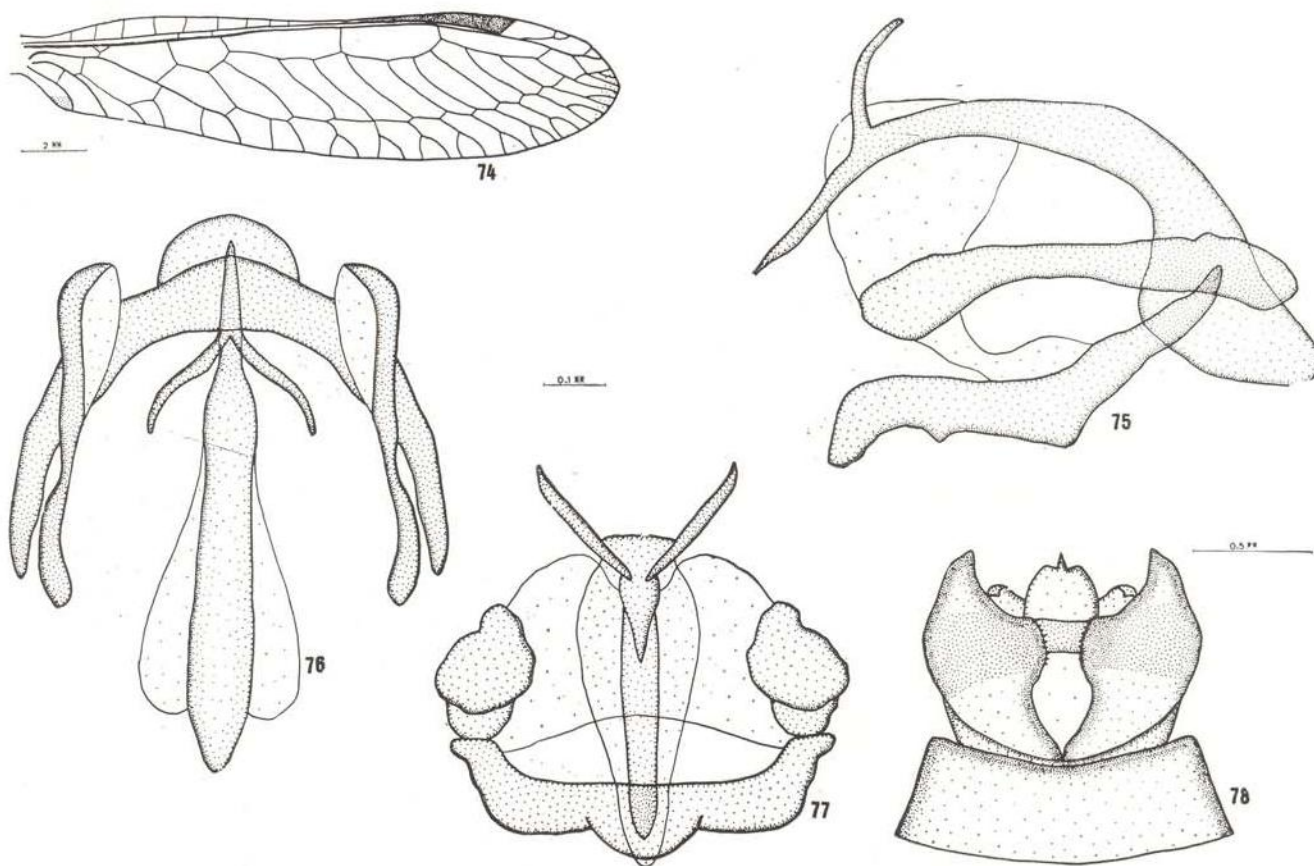
with numerous tubercles and much longer central spine. First fore tarsal segment as long as last four tarsomeres combined. One fore tarsal claw; no arolium.

WINGS: Forewing without recurrent humeral crossvein. Four subcostal crossveins. Pterostigma very elongate; slightly expanded apically; fuscous, sometimes with yellow basally. All veins yellowish brown to black. Forewing membrane transparent. Three radial veins originating from first radial cell of forewing; three veins from second radial cell; three or four veins from third radial cell. Eleven gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing transparent. Three radial veins originating from first radial cell of hindwing; three veins from second radial cell; three or four veins from third radial cell. Ten to twelve gradate crossveins in hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Fuscous to piceus medially; yellow laterally; with slightly raised medial protuberances on dorsal segments IV and V. Male ectoprocts elongate; apically pointed; with several small dentitions on slightly raised



Figures 68-73 — *Mantispa lineaticollis* Enderlein. 68) right forewing; 69) male ectoproct, medial view; 70) male terminalia, dorsal view; 71) male genitalia, ventral view; 72) male genitalia, caudal view; 73) male genitalia lateral view.



Figures 74-78 — *Mantispa phthisica* Gerstaecker. 74) right forewing; 75) male genitalia, lateral view; 76) male genitalia, ventral view; 77) male genitalia, caudal view; 78) male genitalia, dorsal view.

medial portion. Ninth gonocoxites apically expanded; extending beyond gonarcus. Gonarcus with rounded, medial lobe. Central stem of spinasternum bearing very elongate, thin hypomeres laterally (Figs. 75-78).

BODY LENGTH: male, 17 mm; female, 16-19 mm.

FOREWING LENGTH: male, 13-17 mm; female, 16-18 mm.

GEOGRAPHICAL DISTRIBUTION: Gerstaecker's original type was from **Brazil:** Amazonas, Ega (now Tefé). Enderlein (1910) recorded further specimens from **Panama:** Chiriqui Prov., and **Peru:** Cumbasi (now San Antonio da Cumbasa), all in the Stettiner Zoologischen Museum. Handschin (1960) listed specimens in the Stockholm Museum from **Peru:** Marcapata; in the Leyden Museum from **Argentina:** Santa Fé, V-1861; in the Vienna Museum from **Bolivia:** Jungas de Coroico, and **Brazil:** Minas Gerais; in the U.S. National Museum from **Colombia:**

Barro, VII-1941. Further material in the Systematic Entomology Collection of INPA, Manaus, includes: **Panama:** Canal Zone, Coco Solo Hospital, 2-VI-1974, D. Engleman, 1 female; Canal Zone, Coco Solo Hospital, 3-VI-1975, D. Engleman, 1 female; Canal Zone, Pipeline Road, 27-V-1977, B.C. Ratcliffe, 2 males, 1 female; Chiriqui, Santa Rita Ridge, 24-X-1976, Al Thurman, 1 female; Canal Zone, Fort Gulick, 7-VI-1975, Al Thurman, 1 female; **Brazil:** Rondonia, 6-IX-1966, E. Vieira, 1 female. In the Entomology Collection of the Museu Amapaense Costa Lima in Macapá is a male from **Brazil:** Amapá, Porto Grande, Limão, 12-VIII-1975. Museu Paraense Emílio Goeldi has one male from Pará, Belém, Mocambo Forest, 3-VII-1981, G.B. Fairchild and I. Gorayeb. This species appears to be found from Panama south to Argentina.

This species is unique among mantispids now known, because of the very elongate la-

teral hypomeres of the spinasternum, and the rounded, medial lobe of the gonarcus. This species was originally described as a *Manispa*, but has recently been considered a species of *Entanoneura* (Handschin, 1960) due to the elongate third radial cell of the forewing. However, the markings on the pronotum are distinctly different from other species presently placed in the genus *Entanoneura*, and the male genitalia confirm its isolated position.

Entanoneura Enderlein, 1910

Entanoneura Enderlein, 1910, *Stett. ent. Ztg.*, 71: 358.

Type Species: Mantispa limbata Gers-taecker, by original description.

This genus was originally described by Enderlein (1910) as a subgenus of *Mantispa*, to include a group of species of fairly large size (forewing length, 15-23 mm), large number of radial veins (7 to 15 in forewing), and distinctive circular to crescent-shaped yellow marks on the prozona. In 1960 Handschin transferred two species with darkened pronotum to this group (*M. januaris* and *M. phthisica*) and added one further new species with darkened pronotum (*Entanoneura brunneonigra*). The species *M. phthisica* is clearly not closely related to the nuclear group and has been placed in another species group. I have seen the paratype female of *E. brunneonigra* and females identified by Handschin as *E. januaris* in the collection of the Museu de Zoologia, Universidade de São Paulo. These specimens appear also to be different from the nuclear group, but without the elongate hypomeres (although they are present), and thus have been placed in the *costalis* species group.

The character normally used to separate these species from *Mantispa* has been the form of the third radial cell of the forewing. But, as Penny (1982) has pointed out, there is a gradient between the very elongate cells found in many *Entanoneura* and the stouter cells in many *Mantispa* species. The scape of this cell appears to depend almost completely on size of the individual.

There is only one species from this genus presently known to exist in the Amazon Basin, but its identity has been confused. Westwood described the species *Mantispa batesella* from Amazonia, but the type specimens apparently no longer exist at the Hope Entomology Collection. Handschin (1960) described the species *Entanoneura similis* from São Paulo state, while having only a sketchy idea of Westwood's species. Navás has further complicated things by describing two other species, one from French Guyana and the other from Santa Catarina, which appear to be the same species. There is a series of this species in the British Museum (Natural History) identified as *M. batesella* collected by H.W. Bates in Amazonia. These quite possibly constitute the type series, as Westwood worked for many years at the British Museum, and they fit the original description. Specimens from São Paulo and Santa Catarina states in southern Brazil are somewhat darker and have a slightly different shape to the male gonarcus, but differences are minor and at the present time it is felt that *M. batesella* is distributed from French Guyana to southern Brazil. One other species, *Entanoneura limbata*, is found both north and south of the Amazon Basin, but has not yet been recorded from within its boundaries. Thus, only one species, as defined by Penny (1982), is known from the Amazon Region.

Entanoneura batesella Westwood, 1867

(Figs. 79-83, Map 5)

Mantispa batesella Westwood, 1867, *Trans. R. ent. Soc. Lond.*, (3) 5: 507.

Entanoneura batesella (Westwood) Enderlein, 1910, *Stett. ent. Ztg.*, 71: 359.

Entanoneura chopardi Navás, 1933, *Revta R. Acad. Cienc. exact. fis. nat. Madr.*, 30: 310, new synonymy.

Entanoneura jocosa Navás, 1933, *Revta R. Acad. Cienc. exact. fis. nat. Madr.*, 30: 311, new synonymy.

Entanoneura similis Handschin, 1960, *Rev. Suisse Zool.*, 67: 531, new synonymy.

Type series of *M. batesella* is not present in the Hope Entomology Collection of Oxford University, England, but may be present in the British Museum (Natural History). Female holotypes of *E. chopardi* and *E. jocosa* in the Paris Museum (MNHN), France. Male holotype

of *E. similis* in the Basel Museum, Switzerland. Present description based on holotypes of *E. chopardi* and *E. jocosa*, and 4 males, 2 females, pinned.

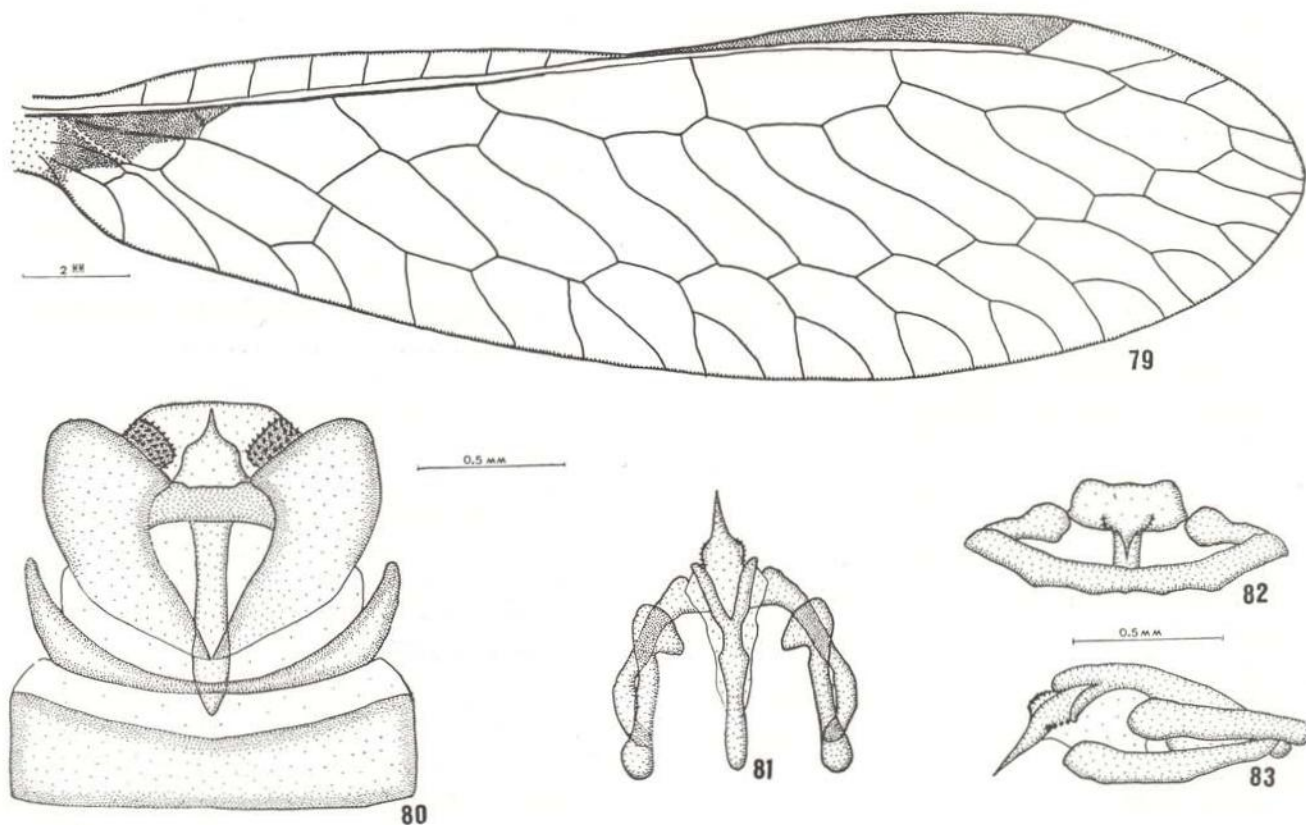
HEAD: Occiput not raised above level of compound eyes; yellow with two transverse piceus bands. Frons yellow with medial black stripe. Labrum yellow. Mandibles black. Maxillary and labial palpi yellow. Antennal scape piceus above, yellow below; pedicel and 30 flagellar segments piceus. Flagellomeres twice as wide as long.

THORAX: Pronotum expanded anteriorly; brown dorsally, except for two anterior, semi-circular, yellow marks, which usually coalesce at midline, and a caudal transverse, yellow band; laterally yellow. Meso- and metanota piceus, with transverse band at anterior margin of mesonotum, lateral spots on mesoscutum and all meso- and metascutellum yellow. Laterally and ventrally, piceus stripe forming collar below articulation of prothorax

with mesothorax. Oblique piceus stripe across epimeron and episternum.

LEGS: Fore coxa yellow basally, becoming fuscous apically. Fore femur yellowish brown; six tubercles and one very large central spine. Fore tibia and tarsi piceus. First fore tarsal segment twice as long as other four tarsal segments combined. One fore tarsal claw and without arolium. All mid- and hind leg segments yellow, except apex of femur and base of tibia with infuscations.

WINGS: Forewing without recurrent humeral crossvein. Number of subcostal crossveins 0-3. Pterostigma very elongate; slightly expanded apically; fuscous. All veins yellow near base, dark brown to black distally. Forewing membrane fuscous in subcostal area, near base of Cu, and for a short distance along anal margin; other membranous areas transparent. Two or three radial cells originating from first radial cell of forewing; three to five veins from second radial cell; two to



Figures 79-83 — *Entanoneura batesella* Westwood. 79) right forewing; 80) male terminalia, dorsal view; 81) male genitalia, ventral view; 82) male genitalia, caudal view; 83) male genitalia, lateral view.

four veins from third radial cell. Ten to 14 gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing amber in costal and subcostal areas; transparent in rest of wing. Three radial veins originating from first radial cell of hindwing; three or four veins from second radial cell; two or three veins from third radial cell. Eleven or twelve gradate crossveins in hindwing. Cu bends towards 1A until briefly touching, then bends sharply away again.

ABDOMEN: Piceus with dorsal sclerites margined anteriorly and posteriorly with yellow. Ninth gonocoxites not extending beyond gonarcus. Gonarcus lacking ventral and medial lobes. Spinasternum lacking hypomeres and medial process (Figs. 80-83).

BODY LENGTH: male, 16.5 — 18 mm; female, 17 mm.

FOREWING LENGTH: male, 15 — 17 mm; female, 17 mm.

GEOGRAPHICAL DISTRIBUTION: The apparent type of *M. costalis* is from Virin, **Brazil**. This locality cannot be found on present-day Brazilian maps. The type of *E. chopardi* is from **French Guyana**: Saint Jean du Maroni, 1919, L. Chopard, 1 female. The type of *E. jocosa* is **Brazil**: Santa Catarina, Falls of the Pirai River, near Jaragua, 1915, E. Gounelle, 1 female. Additional specimens in the Systematic Entomology Collections of INPA, Manaus, are from **Brazil**: Amazonas, Manaus, 11-I-1978, N.D. Penny, 1 male, 1 female; Amazonas, AM-010, km 246, 12-16-VII-1979, J.R. Arias, 3 males, 1 female; Amazonas, Reserva Ducke, 5-X-1981, J.A. Rafael, 1 male.

This species shares with other species of this group the ovoid yellow markings of the anterior margin of the prozona. However, it can be distinguished by the paler posterior part of the pronotum, lacking distinctive stripes. This is the smallest species of this group, with only 7 to 11 radial veins in the forewing. *E. chopardi* and *E. jocosa* were described by Navás for two specimens collected nearly 3000 km apart. *E. jocosa* is slightly darker than *E. chopardi*, but differences in coloration and size easily fall within the limits of variation for this species.

Climaciella Enderlein, 1910

Climaciella Enderlein, 1910, *Stett. ent. Ztg.*, 71: 360.

Type species: Mantispa brunnea Széy, by original designation.

The species of *Climaciella* all appear to be vespid wasp mimics. But, whereas vespid wasps have forewings folded longitudinally to achieve a darkened costal margin, in all known species of *Climaciella* the same effect is achieved by darkened pigmentation of the costal half of the wing. In addition to the coloration of the wing, the basal part of the abdomen is often constricted in *Climaciella*. Penny (1977) listed five species of *Climaciella* from Latin America, lacking two species transferred from *Euclimacia* and *Mantispa* by Handschin in 1960. The range of *Climaciella* is from northern United States south to Argentina in the New World. It is also found in most other temperate and tropical areas of the world. Three species are known from the Amazon Basin, and can be separated using the following key.

KEY TO AMAZONIAN SPECIES OF CLIMACIELLA

- 1a. Notal region of thorax with contrasting yellow and black pattern . *C. amapaensis*
- 1b. Notal region of thorax with uniformly colored surface 2
- 2a. Body, except extremities, completely black *C. semihyalina*
- 2b. Body yellowish to reddish brown, with somewhat darker markings ... *C. duckei*

Climaciella amapaensis, n. sp.

(Figs. 46-51, Map 4)

Original description based on one male specimen, pinned.

HEAD: Occiput not raised above level of compound eyes; yellow with dark fuscous lateral stripe at posterior margin. Frons yellow; genae black. Each maxillary palpal segment dark fuscous basally; yellowish apically. Antennal scape and pedicel yellowish; flagellum absent.

THORAX: Pronotum expanded anteriorly; yellowish with dark fuscous anterior margin, and two tapering, longitudinal, dark stripes (Fig. 51). Mesonotum yellowish with dark fuscous anterior margin. Meso- and metascuta with diagonal dark stripes. Meso- and metascutella yellowish. Pleural regions completely yellow.

LEGS: Completely yellow, except fore femur with dark fuscous apical spot, and darkened basal portion of fore tibia. One apical claw, without arolium.

WINGS: Forewing without recurrent humeral crossvein. Six subcostal crossveins, the majority being in basal third of wing. Pterostigma very elongate; slightly expanded apically; dark amber. All veins reddish brown. Forewing membrane pale amber in costal half (Fig. 46). Four radial cells originating from first radial cell of forewing; three or four veins from second radial cell; two or three from third radial cell. Thirteen or 14 gradate crossveins. Hindwing with one subcostal crossvein and pale, amber-colored membrane present on costal third. Three radial veins originating from first radial cell of hindwing; three veins from second cell; three veins from third cell. Twelve or 13 gradate crossveins in hindwing. Cu slightly angled toward IA until crossvein; then angled slightly away again.

ABDOMEN: Segments somewhat enlarged caudally; straw yellow. Male ninth sternite evenly rounded apically. Ectoprocts ovoid, with medial, flat field of small denticles. Male ninth gonocoxites truncate posteriorly, in dorsal view; extending well beyond gonarcus laterally. Gonarcus with small medial point. Spinasternum without lateral hypomeres gradually tapering to apex (Figs. 48-50).

BODY LENGTH: male, 15 mm.

FOREWING LENGTH: male, 14 mm.

GEOGRAPHICAL DISTRIBUTION: The only known specimen is in the collection of Universidade Federal de Paraná, Curitiba. It is from **Brazil:** Amapá, Serra do Navio, 5-II-1963, Mielke col., 1 male.

This species of *Climaciella* is most closely related to *C. varia* (Erichson) from Mexico and

the United States, *C. brunnea occidentis* (Banks) from the United States, and *C. cubana* Enderlein from Cuba, which all have contrasting yellow and dark patterns on head and thorax. However, the pigment pattern of *C. amapaensis* is much reduced; having no pigmentation of the frons, and only two thin longitudinal lines on the pronotum. Because of the slight angling of the Cu vein of the hindwing, the pigment pattern of the head and thorax, and reduced pigmentation of the forewing, this species appears to form an intermediate stage between other *Climaciella* species and the larger *Mantispia* species, sometimes placed in *Entanoneura*.

***Climaciella duckei* Navás, 1915**

(Figs. 52-56, Map 4)

Climaciella duckei Navás, 1915, *Ent. Mitt.*, 4 (7/9): 196.

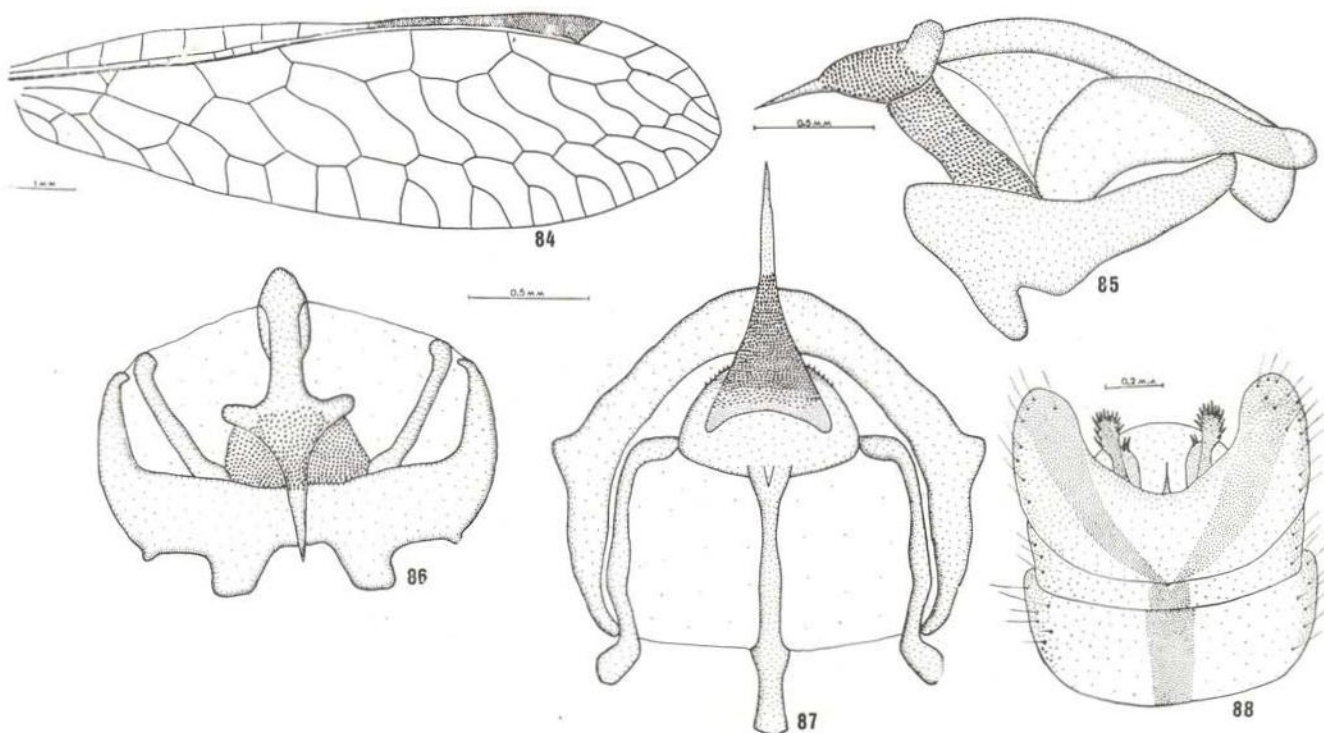
Holotype (of unknown sex) in the Bern Museum, Bern, Switzerland.

Present description based on 1 male, 1 female, pinned, and original description.

HEAD: Occiput not raised above level of compound eyes; yellow, with diffuse fuscous markings becoming darker at posterior margin. Frons and labrum yellowish brown. Mandibles and maxillary and labial palpi dark fuscous. Antennal pedicel and scape fuscous; 34 flagellar segments twice as wide as long, terminally indistinct, piceus.

THORAX: Pronotum expanded anteriorly; yellowish brown, except piceus at posterior margin. Meso- and metathorax yellowish brown to fuscous. Pilosity sparse, yellow.

LEGS: Fore coxa yellowish brown with yellow and piceus bands on basal third. Fore trochanter yellowish brown with apical piceus and yellow bands. Fore femur yellowish brown basally and apically; piceus centrally; with 10 small spines along closing surface with tibia and larger central spine. Fore tibia yellowish brown with much dense dark pilosity along closing surface with femur. First fore tarsal segment fuscous, longer than last four segments combined. Last four fore tarsal segments gradually changing from fuscous



Figures 84-88 — *Mantispa gracilis* Erichson. 84) right forewing; 85) male genitalia, lateral view; 86) male genitalia, caudal view; 87) male genitalia, ventral view; 88) male terminalia, dorsal view.

basally to yellow apically. One apical claw, without arolium. Mid and hind legs uniformly yellowish brown, except for darker, heavily sclerotized spot at mid-length of tibia.

WINGS: Forewing without recurrent humeral crossvein. Six subcostal crossveins. Pterostigma very elongate, slightly expanded apically; fuscous. All veins yellowish brown to fuscous. Forewing membrane amber in costal half and along Cu; being set off from clear posterior half of wing by longitudinal fuscous line (Fig. 52). Four radial cells originating from first radial cell of forewing; two or three veins from second radial cell; three veins from third radial cell. Eleven gradate crossveins. Hindwing with one subcostal crossvein and amber-colored membrane present on costal third and not along Cu. Three radial veins originating from first radial cell of hindwing; two veins from second radial cell; two veins from third radial cell. Eleven gradate crossveins in hindwing. Cu parallel to IA to wing margin.

ABDOMEN: Segments enlarged caudally; dorsal sclerites fuscous anteriorly, yellowish

brown posteriorly; ventrally yellowish brown. Male ninth sternite evenly rounded apically. Ectoprocts with medial, flat field of small spines. Ninth gonocoxites posteriorly rounded, extending well beyond gonarcus laterally. Gonarcus with distinctive medial point. Spinasternum gradually expanding, the tapering to elongate central shaft (Figs. 53-56).

BODY LENGTH: male, 18 mm; female, 18.5 mm.

FOREWING LENGTH: male, 16 mm; female, 15 mm.

VARIATION: An anomaly of the right forewing mentioned by Navás in his original description also appears in a slightly more complex form in the left forewing of the Belém specimen. There are two inner gradate veins and two radial veins forking before reaching outer gradate crossveins. This anomaly is missing in the right wing, and can be expected as part of the normal wing variation of this species.

GEOGRAPHICAL DISTRIBUTION: Navás, original type is from Peru: Iquitos, 2-VIII-1906, Adolpho Ducke. One male in the Systematic En-

tomology Collection of INPA, Manaus, from **Brazil**: Amazonas, Reserva Ducke, 11-XI-1976, B.C. Ratcliffe. One female in Museu Paraense Emilio Goeidi is from Pará, Belém, I.A.N., 24-I-1966, P. Waldir.

HABITAT: The Reserva Ducke collection was made at a light trap in primary forest.

Although Navás' original description gives few details of this species, the lack of distinctive head and thoracic markings sets it apart from all paler species of *Climaciella*, and *C. semihyalina* is a much darker species.

Climaciella semihyalina (Serville, 1831)

(Figs. 57-61, Map 4)

Mantispa semihyalina Serville & Fargeau, 1831, **Encycl. Math.**, 10: 270.

Euclimacia semihyalina (Serville) Enderlein, 1910, **Stett. ent. Ztg.**, 71: 367.

Climaciella semihyalina (Serville) Handschin, 1960, **Rev. Suisse Zool.**, 67: 554.

Mantispa chalybaea Erichson, 1839, **Ent. Zeitschr.**, 1: 160.

Mantispa grandis Burmeister, 1839, **Hand. Ent.**, 2: 967.

Nobrega tinctus Navás, 1914, **Broteria**, 12: 233, new synonymy.

Types of *M. semihyalina* and *M. grandis* in unknown location. Type of *M. chalybaea* presumably in the collection of Humboldt University, Berlin, D.D.R. Holotype (missing abdomen) of *Nobrega tinctus* in British Museum (Natural History).

Present description based on holotype of *Nobrega tinctus* and 5 males, 9 females, 2 missing abdomens, pinned.

HEAD: Occiput not raised above level of compound eyes; black. Frons and mouthparts black. Antennal pedicel and scape reddish brown; 33 flagellar segments twice as wide as long, terminally distinct, reddish brown to yellow apically.

THORAX: Pronotum expanded anteriorly; black. Meso- and metathorax black. Pilosity absent.

LEGS: Fore coxa black with longitudinal yellow stripe. Fore trochanter black, except tip yellow. Fore femur black; 10 spines on closing surface with tibia and central, larger spine black basally; yellow apically. Fore

tarsi gradually changing from black basally to yellow apically. One apical claw. Without arolium. Mid and hindtarsi black with translucent black pilosity.

WINGS: Forewing without recurrent humeral crossvein. Three to four subcostal crossveins. Pterostigma very elongate; expanded apically; fuscous. All veins yellowish brown. Forewing membrane amber in costal half and along Cu, being set off from clear posterior half of wing by longitudinal fuscous line. Three to four radial veins originating from first radial cell of forewing; two or three veins from second radial cell. Eleven gradate crossveins. Hindwing with one or two subcostal crossveins and amber-colored membrane present on costal half and not along Cu. Three radial veins originating from first radial cell; two veins from third radial cell. Ten gradate crossveins in hindwing. Cu parallel to 1A to wing margin.

ABDOMEN: Segments enlarged caudally; completely black. Male ninth sternite evenly rounded apically. Ectoprocts with medial, flat field of small spines. Ninth gonocoxites anteriorly rounded, not extending beyond gonarcus laterally. Gonarcus with distinctive medial point. Spinasternum gradually expanding, then tapering to elongate central shaft (Figs. 58-61).

BODY LENGTH: male, 21 mm; female, 14-21 mm.

FOREWING LENGTH: male, 22 mm; female, 16-22 mm.

GEOGRAPHICAL DISTRIBUTION: The holotype is from **Brazil**, and Enderlein (1910) mentioned specimens in the Stettiner Zoologisches Museum from BRAZIL, SURINAM and **Peru**: Cumbase (now Santo Antonio de Cumbasa). Stitz (1913) mentioned two females in the Berlin Museum from **Bolivia**. Navás (1926) listed a specimen from **French Guyana** in the Geneva Museum and another (1927) in the Paris Museum. Navás (1928) recorded a specimen in the Hamburg Museum from Riobamba, **Ecuador**, and in the same museum (Navás, 1930) a specimen from Santa Catarina, **Brazil**. Williner & Kormilev (1958) recorded this species from **Argentina**: Misiones, Puerto

Bemberg. Handschin (1960) further listed specimens in the Basel Museum from **Brazil**: Rio de Janeiro, Corcovado; São Paulo, Jundiary; and São Amaro; in the Vienna Museum from **Peru**: Marapata and; PARAGUAY, Upper Amazonas (?); in the U.S. National Museum from **Mexico**: Atencing; and in the Leyden Museum from Callanoa. This latter locality cannot be found on present maps, but is possibly Callaruga, near Cuzco, or Calloa, near Lima, both in **Peru**. Two additional specimens in the Systematic Entomology Collections of INPA, Manaus, are from **Brazil**: Amazonas, Reserva Ducke, 14-VI-1979, J.R. Arias, 1 female; Reserva Ducke, 27-VII-1981, E. Vieira, 1 female. Navás' type of *N. tinctus* is from **Brazil**: Amazonas, Ega (now Tefé), without date or collector. This species appears to be found over all northern South America east of the Andes, and perhaps Central America as well.

Climaciella semihyalina is a most distinctive species of *Climaciella* because of its almost completely black coloration. No other species is so dark. The holotype of *Nobrega tinctus* Navás has lost its abdomen, so that sex is unknown. The forewing is paler than in other specimens of this species, but the very dark body and telltale tint to the forewings gives away its true identity.

minuta species group

Part of this group was originally described as a genus by Navás, to include all those species that have only a single radial vein originating from each radial cell of the forewing. It has been repeatedly shown that basing genera, or even species on number and placement of radial veins is a bad practice. Only one species has been placed in this genus from the New World, *Necyla uniformis* Navás from Guatemala. Although the wing venation cannot be used alone, this species has in common with several other American species a number of further structural characters that taken together probably form a natural grouping. Thus, the generic definition could be expanded to include these other characters, but since I have not seen the type species of the genus, *Necyla exigua* Navás, from Sri Lanka, there is some doubt if the type species belongs

in this group. Indeed, I have seen species described as *Necyla* from Africa which are not a part of this group. Therefore, I have left these species as a species group of *Mantispa*, since most have been described in that genus anyway.

This species group constitutes the smallest individuals of the genus *Mantispa*. There is a range of forewing length from 8 to 14 mm. There are from three to seven radial veins in the forewing. The male ectoprocts are generally not as elongate as in the other species groups, and the postero-medial projection is usually flat and appearing more as a spinous field than a projection. The ninth sternite of all but one species has a postero-medial lobe which is narrower and more acute than in the other species groups. Finally, the male gonarcus is recurved, as a dorso-medial projection that expands apically.

Four species of the *uniformis* species group have been collected in the Amazon Basin. They can be separated with the following key.

KEY TO AMAZONIAN SPECIES OF THE UNIFORMIS SPECIES GROUP

- 1a. Male ninth sternite evenly rounded to apex *M. ariasi*
- 1b. Male ninth sternite with narrower, acute tip 2
- 2a. Basic body coloration pale; wing nervation pale; markings of head red to brown 3
- 2b. Basic body coloration dark; wing nervation dark; markings of head fuscous to piceus *M. parvula*
- 3a. Forewing pterostigma pale green to straw yellow *M. minuta*
- 3b. Forewing pterostigma reddish brown *M. compellens*

Mantispa ariasi, n. sp.

(Figs. 89-93, Map 6)

Holotype male and allotype female in the Systematic Entomology Collection of INPA, Manaus.

Present description based on 11 males, 3 females, 2?, pinned.

HEAD: Occiput slightly depressed; piceus with two yellow spots. Frons and labrum pale yellow with piceus medial line. Mandibles reddish brown. Maxillary and labial palpi pale brown, becoming darker apically. Antennal scape piceus above, pale yellow below; pedicel and 23-26 flagellar segments piceus. Flagellomeres about as long as wide.

THORAX: Prothorax dark brown dorsally, yellowish brown ventrally. Meso- and metanota piceus, except scutellum pale yellow. Pleural region piceus, except sutures margined in yellow.

LEGS: All leg segments pale yellowish brown, except fore femur and tibia piceus. Numerous tubercles and one large central spine of fore femur. First fore tarsal segment slightly longer than other four tarsomeres combined. One fore tarsal claw and without arolium.

WINGS: Forewing without recurrent humeral crossvein. One or two subcostal crossveins. Pterostigma very elongate; expanded apically, reddish brown. All veins dark brown to black. Forewing membrane transparent, except subcostal area amber. One radial vein

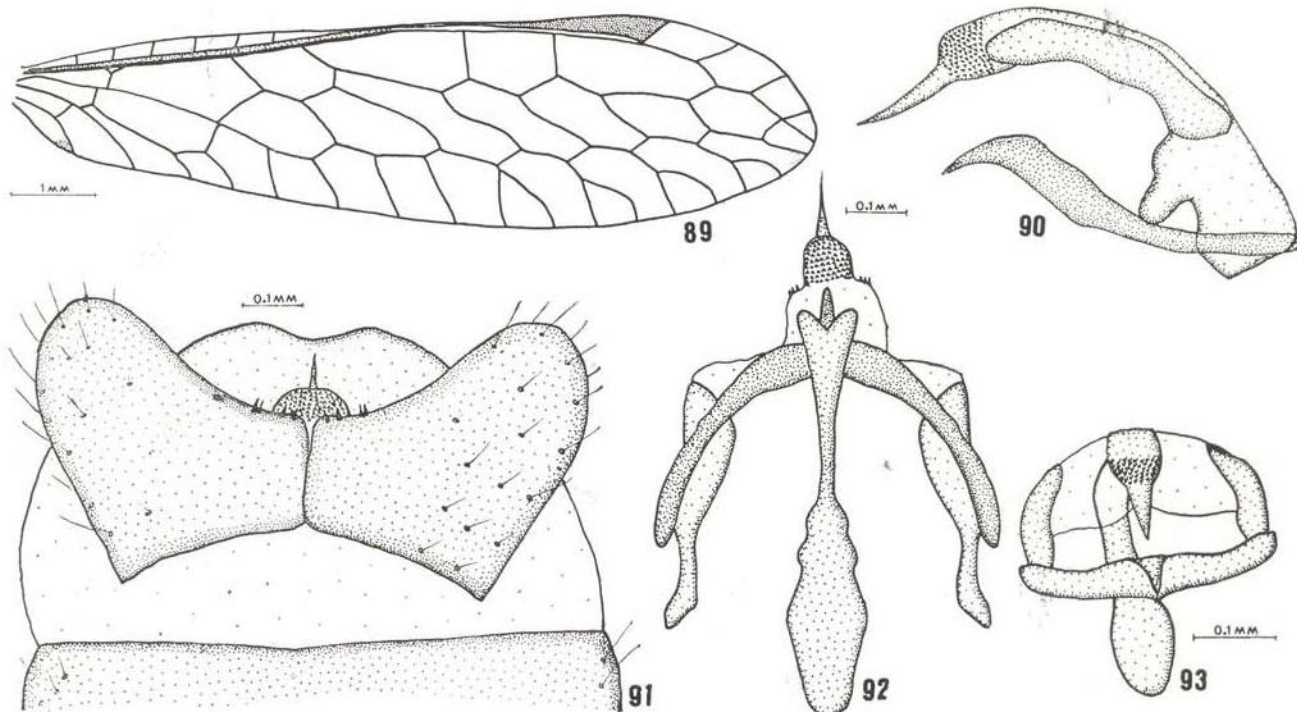
originating from first radial cell of forewing; one vein from second radial cell; two veins from third radial cell. Seven gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing transparent. One radial vein originating from first radial cell of hindwing; one or two veins from second radial cell; one or two veins from third radial cell. Five or six gradate crossveins in hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Piceus, except posterior margin of each tergite pale yellow. Male ninth sternite evenly curved to apex. Male ectoprocts somewhat elongate, with a few low teeth along medial margin. Male gonarcus with an elongate, ventro-medial projection that is not apically expanded.

BODY LENGTH: 10-11 mm.

FOREWING LENGTH: 10-11 mm.

GEOGRAPHICAL DISTRIBUTION: This species has only been collected once: **Brazil:** Amazonas, AM-010, km 246, 12-16-VII-1979, J. R. Arias, 11 males, 3 females, 2?, collected from a light trap in forest canopy.



Figures 89-93 — *Mantispa ariasi*, n.sp. 89) right forewing; 90) male genitalia, lateral view; 91) male terminalia, dorsal view; 92) male genitalia, ventral view; 93) male genitalia, caudal view.

This species is one of the smallest species of *Mantispa*, and the reduction of radial veins places this species between larger species of *Mantispa* and those species with three radial veins, traditionally placed in *Necyla*. The male genitalia also seem to form a composite picture of affinities. This species does not have the apical lobe of the male ninth sternite, as is found in *M. compellens*, *M. parvula* and *M. minuta*. However, it is associated with these smaller species in the medial projection of the male gonarcus, although the form is narrower than in *M. compellens* and *M. minuta*. The number of radial veins (4) is smaller than in other species groups, which also don't have the medial projection of the gonarcus. Thus, this species seems to form an evolutionary link between the *minuta* group and the rest of *Mantispa*.

This species is dedicated to Dr. Jorge R. Arias, who not only collected all known specimens of this species, but also has collected a large number of other Amazonian mantispids.

Mantispa compellens Walker, 1858

(Figs. 94-98, Map 6)

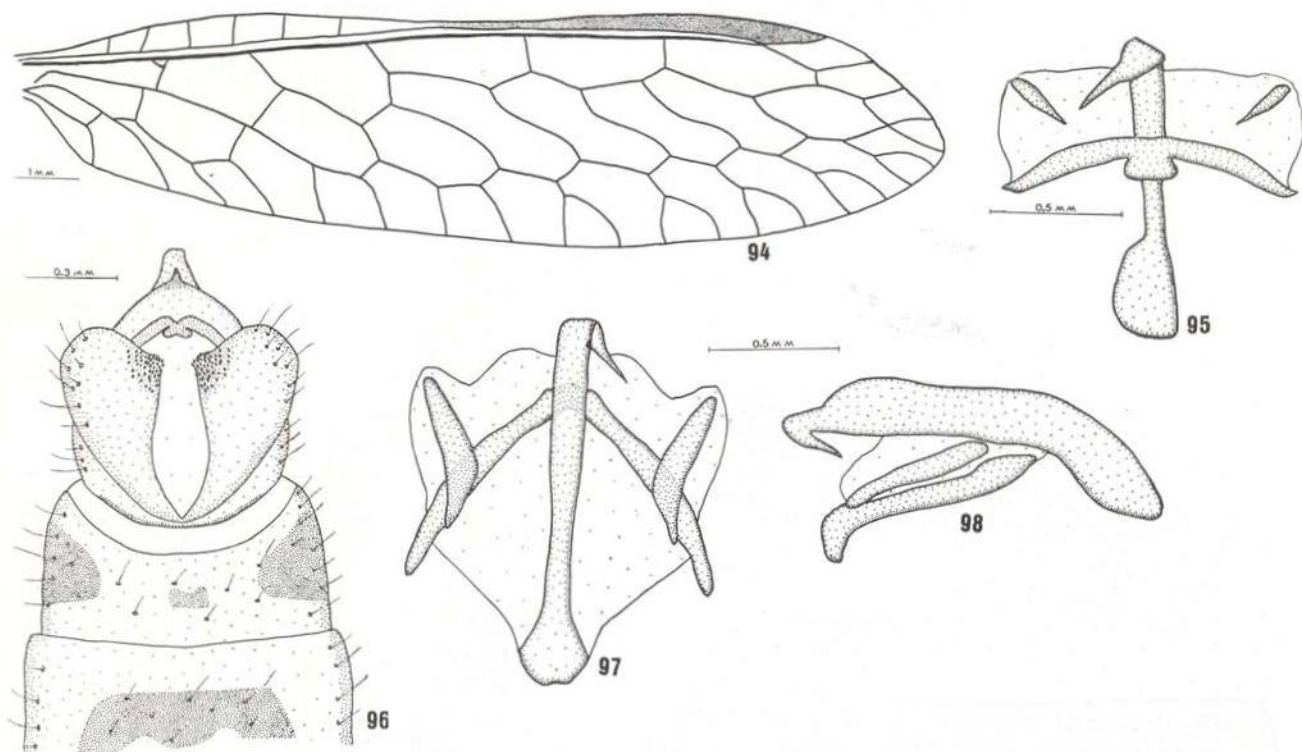
Mantispa compellens Walker, 1858, *Trans. R. ent. Soc. Lond.*, 5: 181.

Mantispa debilis Gerstaecker, 1888, *Mitt. naturw. Ver. Neu-Verpomm.*, 19: 114.

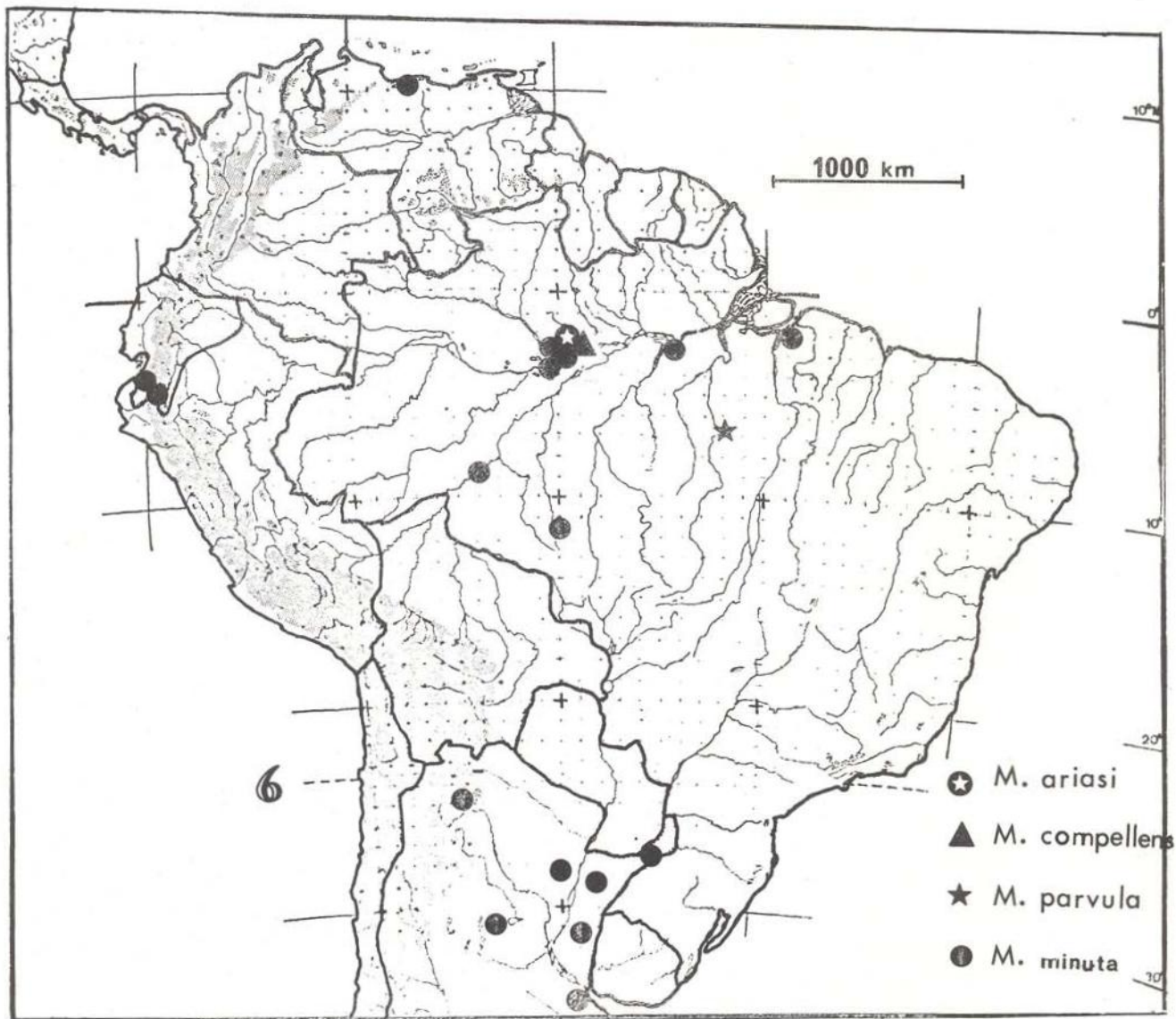
Holotype female in the British Museum (Natural History), London. Syntypes of *M. debilis* in Greifswald Museum, Greifswald, D.D.R.

Present description based on holotype of *M. compellens* and 3 males, 8 females, pinned.

HEAD: Occiput slightly depressed; yellow, sometimes with red infuscations. Frons and labrum yellow, with thin medial line red to reddish brown. Mandibles reddish brown. Maxillary and labial palpi yellow, occasionally with darker apex. Antennal scape piceus above, yellow below; pedicel and 25-28 flagellar segments piceus. Flagellomeres about as wide as long.



Figures 94-98 — *Mantispa compellens* Walker. 94) right forewing; 95) male genitalia, lateral view; 96) male terminalia, dorsal view; 97) male genitalia, ventral view; 98) male genitalia, caudal view.



Map 6 — Geographical distribution of some Amazonian species of *Mantispa*.

THORAX: Pronotum expanded anteriorly; uniformly yellowish brown. Meso- and meta nota yellow, without markings. Pleural regions yellow, without markings.

LEGS: All leg segments yellow. Fore femur bearing numerous tubercles and one large central spine. First fore tarsal segment longer than other four tarsomeres combined. One fore tarsal claw and without arolium.

WINGS: Forewing without recurrent humeral crossvein. Zero to one subcostal crossvein. Pterostigma very elongate; expanded apically; reddish brown. All veins yellow basally, dark brown to black distally. Forewing membrane transparent, except subcostal area amber. One

radial vein originating from first radial cell of forewing; two veins from second radial cell; two veins from third radial cell. Seven to eight gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing transparent, except subcostal area amber. One or two radial veins originating from first radial cell of hindwing; two veins from second radial cell; one or two veins from third radial cell. Seven gradate crossveins in hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Yellow, with two rows of quadrate red marks on tergites IV-VII, occasionally other segments. Occasionally these spots

unite to form red transverse bands. Male ectoprocts stout, pale yellow, with low field of small, dark teeth. Male ninth sternite pale yellow, with apical, narrowly rounded projection. Male gonarcus with ventro-medial projection, that forms an apically expanded, recurved lobe.

BODY LENGTH: male, 10.5 — 14 mm; female, 10.5 — 12 mm.

FOREWING LENGTH: male, 9-10 mm; female, 10 — 11.5 mm.

GEOGRAPHICAL DISTRIBUTION: This species was originally described from the Amazon Basin (exact locality unknown). The type series of *M. debilis* is from BRAZIL: Pará, Itaituba, Hahnel. I have seen specimens from as far south as Minas Gerais State in Brazil. There are five specimens (all female) in the Systematic Entomology Collection of INPA, Manaus, from BRAZIL: Amazonas, AM-010, km 246, 12-16-VIII-1979, J.R. Arias, in a light trap.

VARIATION: This species has quite variable red markings on the abdomen. At times these markings are completely absent, and in other specimens they may take one form reminiscent of the red color pattern of the chrysopid *Chrysoperla carnea* Stephens of north temperate climates, which develops dark red markings as Fall temperatures become cooler. In late Fall, a series of specimens can be in several stages of development of this color pattern.

Mantispa compellens forms part of a complex of possible species with pale coloration, small size, and remarkably uniform genitalia. This group is found as far north as the United States (*Mantispa viridis* Walker) and as far south as Argentina (*Mantispa minuta* Fabricius). There have been many named species in this group, and most are undoubtedly synonyms. However, *M. compellens* is somewhat darker than the rest of these pale green to straw yellow species. Especially dark is the forewing pterostigma, which is reddish brown. Some slight differences in the shape of the male ectoprocts and postero-medial field occur, but the differences are slight, and may be due to position of the specimens when viewing. The size in general seems to be larger

than *M. minuta*, but this latter species has a remarkable variation in size. Thus, some specimens of *M. minuta* are larger than *M. compellens* but in a distinct minority of specimens. *M. debilis* was described and compared with *M. gracilis* by Gerstaecker (1888), but no mention was made of differences from *M. compellens*. The red pterostigma and number of forewing radial cells compares favorably with this latter species, and, I have not seen any other species from the Amazon with such a red pterostigma.

***Mantispa parvula*, n. sp.**

(Figs. 99-103, Map 6)

Holotype male in the Systematic Entomology Collection of INPA, Manaus.

Original description based on 1 male, 1 female, pinned.

HEAD: Occiput slightly depressed, piceus. Frons and labrum pale brown to piceus. Mandibles reddish brown. Maxillary and labial palpi pale brown. Antennal scape, pedicel and 27 flagellomeres piceus. Flagellomeres twice as wide as long.

THORAX: Pronotum expanded anteriorly; brown, except prozona darker piceus, without markings. Pleural areas piceus, without markings.

LEGS: All leg segments yellowish brown, to dark brown. Numerous tubercles and one large central spine on fore femur. First fore tarsal segment about as long as other four tarsomeres combined. One tarsal claw, and without arolium.

WINGS: Forewing without recurrent humeral crossvein. Without subcostal crossveins. Pterostigma very elongate; expanded apically; pale brown. Veins yellow basally, gradually becoming brown distally. Forewing membrane transparent. One radial vein originating from first radial cell of forewing; one vein from second radial cell; one vein from third radial cell. Six gradate crossveins. Hindwing without subcostal crossveins. Membrane of hindwing transparent. One radial vein originating from first radial cell of hindwing; one vein from second radial cell; one vein from third radial

cell. Five gradate crossveins of hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Yellowish brown anteriorly to piceus caudally, without markings. Male ectoprocts very broadly rounded, with low field of medial spines. Gonarcus with ventro-medial, tapering point, not expanded apically. Male ninth sternite with apical point.

BODY LENGTH: 9.5 mm.

FOREWING LENGTH: 8.5 mm.

GEOGRAPHICAL DISTRIBUTION: The holotype male was collected at **Brazil:** Pará, São Felix do Xingu, 29-30-IX-1975, J. Jaufert and P. Pompanon, 1 male, INPA.

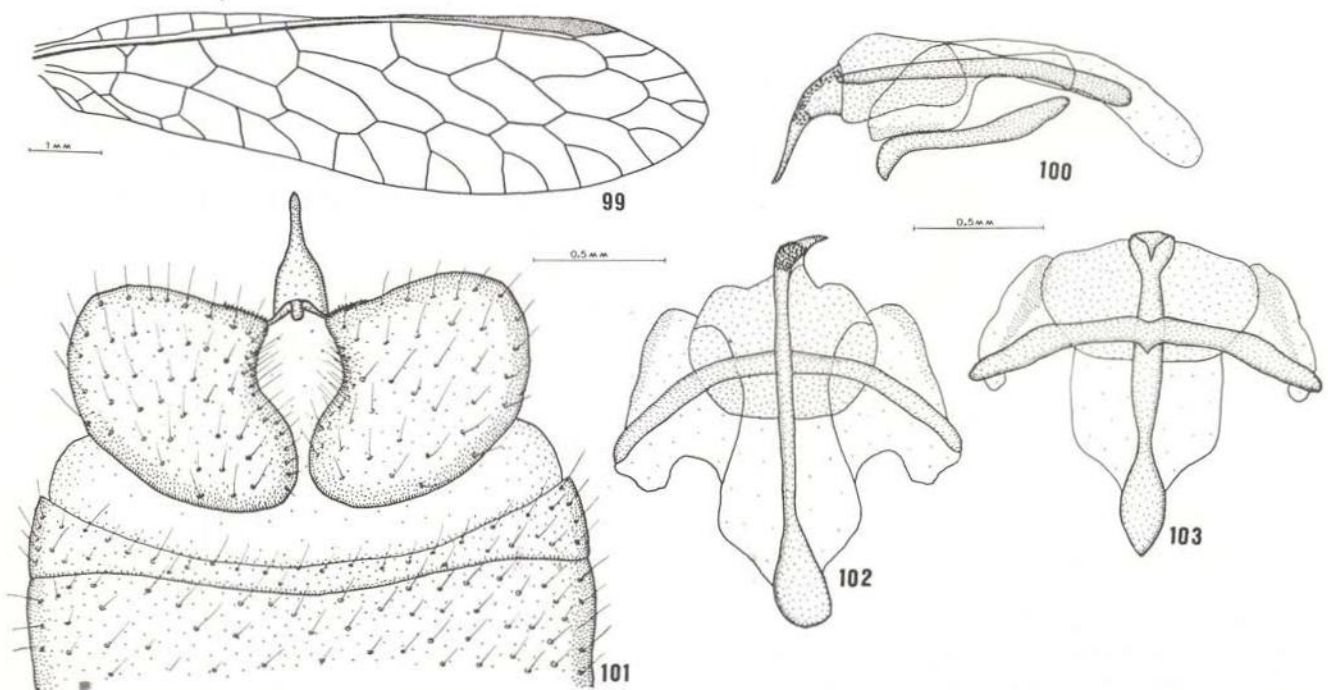
There is also an allotype female with badly torn wings in the Museu Paraense Emílio Goeldi from **Brazil:** Pará, Gorotire Xingu, 14-XI-1977, D. A. Posey.

These are the only specimens that I have seen from Brazil with only three radial veins in the forewing. The only other species with such a reduced number of radial veins is *Mantispa uniformis* (Navás) from Central America, which is much darker in body coloration. The name *parvula* comes from the Latin *parvus*, meaning little.

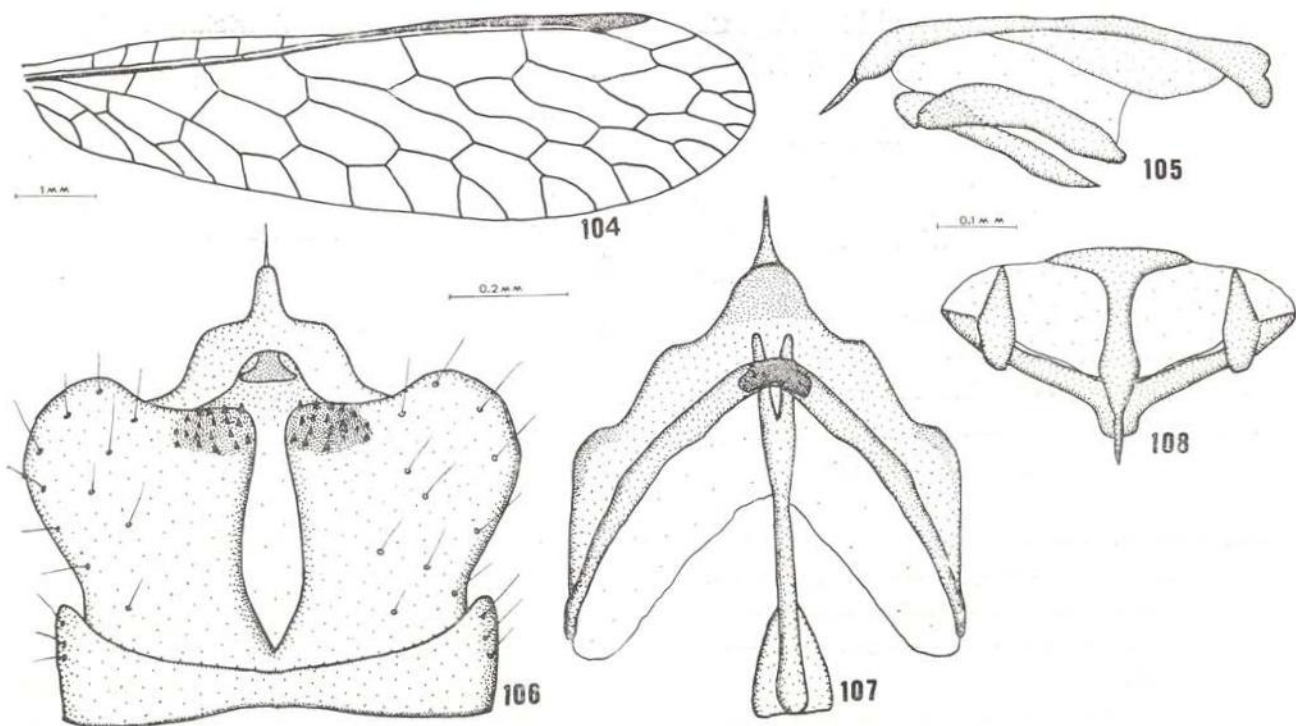
Mantispa minuta (Fabricius, 1775)

- Mantispa minuta* Fabricius, 1775, *Systema Entomologiae*, p. 278.
Mantispa minuta (Fabricius) Erichson, 1839, *Z. Ent.*, 1: 171.
Mantispa flavomaculata Latreille, 1805, *Histoire naturelle des Crust.*, 13: 94, new synonymy.
Mantispa liliputiana Olivier, 1811, *Encycl. meth.*, 7: 640, new synonymy.
Raphidia margaritacea Fischer, 1834, *Bullet. Acad. Moscow*, 7: 322, new synonymy.
Mantispa flaveola Erichson, 1839, *Z. Ent.*, 1: 168, new synonymy.
Mantispa viridula Erichson, 1839, *Z. Ent.*, 1: 170, new synonymy.
Mantispa viridis Stitz, 1913, *Mitt. zool. Mus. Berl.*, 7: 29, nec. Walker, 1853, new synonymy.
Mantispa pallescens Navás, 1914a, *Broteria*, 12: 229, nec. Stitz, 1913, new synonymy.
Mantispilla flavescens Navás, 1914a, *Broteria*, 12: 231, new synonymy.
Mantispa flavescens (Navás) Penny, 1977, *Acta Amaz.*, (supl.), 7 (4): 35.
Mantispa trichostigma Navás, 1921, *Estudios Revista Acad. Literaria Plata, Buenos Aires*, 1921: 51, new synonymy.
Mantispa trichostigma (Navás) Penny, 1977, *Acta Amaz.*, (supl.), 7 (4): 36.

Location of type of *Mantispa flavomaculata* Latreille is unknown. Whereabouts of types of



Figures 99-103 — *Mantispa parvula* n.sp. 99) right forewing; 100) male genitalia, lateral view; 101) male genitalia, dorsal view; 102) male genitalia, ventral view; 103) male genitalia, caudal view.



Figures 104-108 — *Mantispa minuta* (Fabricius). 104) rightforewing; 105) male genitalia, lateral view; 106) male terminalia, dorsal view; 107) male genitalia, ventral view; 108) male genitalia, caudal view.

M. viridula and *M. flaveola* unknown, but presumed in Humboldt University Museum. Holotype (abdomen missing) of *M. trichostigma* in the Paris Museum. Holotype males of *M. pallescens* Navás and *M. flavescens* in the British Museum (Natural History). Three syntype females of *M. viridis* Stitz in the Berlin Museum of Humboldt University, D. D. R., Present description based on types of *M. pallescens* Navás, *M. flavescens*, *M. trichostigma*, and 18 males, 22 females, 6?, pinned.

HEAD: Occiput slightly depressed to slightly raised; pale green to yellow, without markings or sometimes with oblique red lines between antennae and compound eyes. Frons and labrum pale green to yellow, sometimes with fuscous to red markings between antennae and along medial line. Mandibles yellow to yellowish brown apically. Maxillary and labial palpi yellow. Antennal scape pale green to yellow below and fuscous above; pedicel and 27 to 30 flagellar segments fuscous, becoming black apically. Flagellomeres twice as wide as long.

THORAX: Pronotum expanded anteriorly; pale green to yellow, occasionally with antero-

lateral red spots on prozona. Meso- and metanota pale green to yellow, without markings. Pleural areas pale green to yellow, without markings.

LEGS: All leg segments pale green to yellow. Numerous tubercles and one large central spine on fore femur. First fore tarsal segment slightly longer than other four tarsomeres combined. One fore tarsal claw, and without arolium.

WINGS: Forewing without recurrent humeral crossvein. Zero to one subcostal crossveins. Pterostigma very elongate; expanded apically; pale green to yellow. Veins pale green to yellow, except crossveins, vein forks and apical endings black. Forewing membrane transparent. One to two radial veins originating from first radial cell of forewing; one to three veins from second radial cell; one to three veins from third radial cell. Six to ten gradate crossveins of forewing. Hindwing without subcostal crossveins. One or two radial veins originating from first radial cell of hindwing; two or three veins from second radial cell; one or two veins from third radial cell. Six to nine

gradate crossveins in hindwing. Cu bends towards IA until briefly touching, then bends sharply away again.

ABDOMEN: Yellow to pale green, occasionally with two lateral, longitudinal rows of red. These longitudinal lines may be somewhat curved on each segment, and may be dark to very pale to absent. Male ninth sternite with apical, rounded projection. Male ectoprocts stout, rounded, with medial field of small, dark teeth. Male gonarcus bears a ventro-medial projection, which is apically expanded (Figs. 105-108).

BODY LENGTH: 4-12 mm.

FOREWING LENGTH: 7.5 — 11 mm.

GEOGRAPHICAL DISTRIBUTION: This is perhaps the most common and widely distributed species of Mantispidae in South America. Latreille's original type was from *French Guyana*. Erichson's type of *M. viridula* was from BRAZIL. This species has been collected under various names from *Argentina* and *Uruguay*. It is common in the Amazon Basin, and probably is found throughout most of northern South America, although due to variability in size and red markings, there are probably specimens described as other species. I have seen specimens in the collection of the U.S. National Museum, Washington from Rancho Grande, in the northern coastal mountains of VENEZUELA; Other specimens in the Systematic Entomology Collection of INPA, Manaus, are from ECUADOR. Within the Amazon Basin, the type male of *M. flavescens* was collected at BRAZIL: Pará, Santarém (without date and collector). Specimens in the INPA collection are from BRAZIL: Rondonia, Porto Velho, BR-364, km 48, 21-I-1980, J.R. Arias, 1 female; Amazonas, AM-010, km 264, 12-16-VII-1979, J. R. Arias, 1 male, 3 females, 2?, light trap; Amazonas, Manaus, 25-IX-1976, N.D. Penny, 1 female; Manaus, 7-XII-1977, B.C. Ratcliffe, 1 female; Amazonas, Manaus, Lago Castanho, 14-IV-1977, B. Mascarenhas, 1 female; Amazonas, AM-010, km 244, 20-I-1977, N. D. Penny, 1 male; Manaus, 7-XIII-1977, B. C. Ratcliffe, 1 ?; Amazonas, Reserva Ducke, AM-010, km 26, 14-III-1977, N. D. Penny, 1 female; Mato Grosso, Aripuanã, 20-III-1977, N. D. Penny, 1 female.

Museu Goeldi has one male from Pará, Belém, Mocambo Forest, 3-VII-1981, G. B. Fairchild and I. Gorayeb, flight trap.

VARIATION: There is a great deal of variation in body size, dark pigmentation along forewing veins, and red markings on the head and abdomen. Although a person would reasonably assume that specimens of much different size, and of much lesser or greater degree of markings on the body would be different species, I have seen specimens collected together on the same night that show much of the variation mentioned, and there appears to be no variation whatsoever in the male genitalia. Thus, *M. trichostigma* was based on a specimen with a great deal of red pigmentation on the occiput behind the antennae, while *M. flavescens* Navás was based on a very small, perhaps teneral specimen, without red markings. As no consistent differences between specimens, other than these quite variable ones, can be found, there seems to be no reason for maintaining these names. There are also several pale green species with red markings described from Central America that will probably eventually be placed in synonymy with *M. minuta*.

The frequently small size, with reduced number of forewing radial veins, the apical lobe of the male ninth sternite, and the projection of the male gonarcus link this species with *M. compellens* and *parvula*, n. sp. However, the pale green body coloration separates this species from *M. parvula*, and the pale green to yellow forewing pterostigma separates it from *M. compellens*.

SUMÁRIO

As 27 espécies de Mantispidae conhecidas da Bacia Amazônica são descritas, chaves são apresentadas para sua identificação e distribuições arquivadas. Sete novas espécies são descritas pela primeira vez: *Plega beardi*, *Plega duckei*, *Plega paraense*, *Trichoscelia anae*, *Climaciella amapaensis*, *Mantispa ariasi*, e *Mantispa parvula*. Dezenove nomes são sinonimizados: *Anisoptera romani* Esben-Petersen = *Anchieta bella* Westwood; *Anchieta nobilis* Navás = *Anchieta fumosella* (Westwood); *Mantispa cognatella* Westwood = *Plega hagenella* (Westwood); *Anisoptera amoenula* Gerstaecker = *Trichoscelia egella* Westwood; *Mantispa* (Tri-

choscelia) *basella* Westwood = *Trichoscelia iridella* Westwood; *Anisoptera jocosa* Gerstaecker e *Symphra-
sis thaumasta* Navás = *Trichoscelia latifascia* MacLa-
chlan; *Nobroga tinctus* Navás = *Climaciella semihya-
lina* (Serville); *Entanoneura chopardi* Navás, *Entanoneu-
ra jocosa* Navás e *Entanoneura similis* Handschin = *En-
tanoneura batesella* (Westwood); *Mantispa trilineata*
Navás e *Mantispa gounellei* Navás = *Mantispa gracilis*
Erichson; *Mantispa viridis* Stitz, *Mantispa pallescens*
Navás, *Mantispa viridula* Erichson, *Mantispa flavo-
veola* Erichson, e *Mantispa flavomaculata* Latreille =
Mantispa minuta (Fabricius); e *Mantispa debilis* Ger-
staecker = *Mantispa compellens* Walker. Lectotipos são
designados para cinco espécies: *Anchieta nobilis* Na-
vás, *Trichoscelia partheniella* Westwood, *Trichoscelia
iridella* Westwood, *Mantispa myrapetrella* Westwood, e
Mantispa moulti Navás.

REFERENCES

- BANKS, N.
1913 — Synopses and descriptions of exotic Neuroptera. *Trans. Am. ent. Soc.*, 39: 201-242.
- BERTHOLD,
1827 — In Latreille, P.A., *Nat. Fam. Trierr.*, p. 409.
- BURMEISTER, H.C.C.
1839 — *Handbuch der Entomologie*, 2: 757-1050. Berlin.
- ENDERLEIN, G.
1910 — Klassifikation der Mantispiden nach dem Material de Stettiner Zoologischen Museums. *Stett. ent. Ztg.*, 71: 341-379.
- ERICHSON, W.F.
1839 — Beiträge zu einer Monographie von *Mantispa*, mit einleitenden Betrachtungen über die Ordnungen der Orthopteren und Neuropteren. *Z. Ent.*, 1: 147-175.
- ESBEN-PETERSEN, P.
1917 — Neue und wenig bekannte Mantispiden. *Ark. Zool.*, 11 (10): 1-15.
- FABRICIUS, J.C.
1775 — *Systema Entomologiae*. Flensburgi, Lipsiae. 832pp.
- FISCHER, von Waldheim G.
1834 — Notice sur quelques Orthoptères et Neuroptères du Brésil. *Bullet. Acad. Moscow*, 7: 322.
- GERSTAECKER, A.
1885 — Vier Decaden von Neuropteren aus der Familie Megaloptera, *Burm. Mitt. naturw. Ver. Neu-Vorpomm.*, 16: 1-89.
1888 — Weitere Beiträge zur Artenkenntniss der Neuroptera Megaloptera. *Mitt. naturw. Ver. Neu-Vorpomm.*, 19: 89-130.
- HAGEN, H.A.
1861 — Synopsis of the Neuroptera of North America, with a list of the South American species. *Smithson. misc. Collns.*, 4: 1-347.
1866 — Hemerobidarus Synopsis synonymica. *Stett. ent. Ztg.*, 27: 369-462.
1877 — *Symphra-sis*, eine neue Mantispiden-Gattung. *Stett. ent. Ztg.*, 38: 208-211.
- HANDSCHIN, E.
1960 — Zur revision süd-amerikanischer Mantispiden. *Rev. Suisse Zool.*, 67: 523-558.
- HERRICH-SCHAEFFER
1840 — *Nomencl. Entom.*, 2: 57.
- ILLIGER, J.C.W.
1798 — Kugelmann, *Verzeichniss der Käfer Preussens...* etc. (Halle, Gebauer). 8: 1-510.
- LATREILLE, P.
1805 — *Histoire naturelle*, générale et particulière, des Crustacés et des Insectes: Bd. 13, 1-432. Paris.
- LEACH, W.E.
1815 — "Entomology" (Brewster). *Edinb. Encycl.*, 9: 57-172.
- LINSLEY, E.G. & MacSWAIN, J.W.
1955 — Two new species of *Piega* from Mexico (Neuroptera, Mantispidae). *Pan-Pacif Ent.*, 31: 15-19.
- MACLACHLAN, R.
1867 — New genera and species of Neuropterous Insects; and a revision of Mr. F. Walker's British-Museum catalogue of Neuroptera, part II (1853), as far as the end of genus Myrmeleon. *J. Linn. Soc. Lond.*, 9: 230-281.
- NAVÁS, L.
1909 — Matéspidos nuevos. *Mems R. Acad. Cienc. Artes Barcelona*, 7. 1-15.
1914 — Neurópteros sudamericanos. Primera Serie. *Broteria*, 12: 45-57, 215-235.
1915 — Neue Neuropteren. I & II. *Ent. Mitt.*, 4: 146-153, 194-202.
1916 — Neurópteros nuevos e poco conocidos. (Sexta Serie). *Mems R. Acad. Cienc. Artes Barcelona*, 12 (7): 119-136.
1917 — Neurópteros nuevos o poco conocidos. (Novena Serie). *Mems R. Acad. Cienc. Artes Barcelona*, 13 (26): 393-406.
1921 — Algunos insectos de Santa Fe (República Argentina). *Estudios Revta Acad. Literaria Plata, Buenos Aires*, 1921: 49-55.
1923 — Estudios sobre Neurópteros (Insectes). *Arx. Inst. Cienc.*, 7: 79-203.
1926 — Insectos exóticos Neurópteros y afines. *Broteria*, 23: 79-93.
1927 — Insectos del Museo de Paris. *Broteria*, 24: 5-33.
1928a — Insectos del Museo de Hamburgo. *Boln Soc. ent. Esp.*, 11: 59-67, 90-100, 121-138.

- 1928b— Insectos neotrópicos (3ª Serie). *Revta chil. Hist. nat.*, 31 (1927): 316-328.
- 1929 — Insectos de la Argentina (5ª Serie). *Revta Soc. ent. argent.*, 2: 219-225.
- 1930 — Insectos neotrópicos. *Revta chil. Hist. nat.*, 34 (1930): 62-75, 299-307.
- 1933 — Insectos suramericanos. *Revta R. Acad. Cienc. exact. fis. nat. Madr.*, 30: 303-314.
- 1934 — Insectos suramericanos. *Revta R. Acad. Cienc. exact. fis. nat. Madr.*, 31: 9-28, 135-184.
- OLIVIER, M.
1811 — *Encyclopédie méthodique*. Histoire naturelle. Insectes. 8: 1-722.
- PARKER, F.D. & STANGE, L.A.
1965 — Systematic notes on Platymantispini. *Can. Ent.*, 97: 604-612.
- PENNY, N.D.
1977 — Lista de Megaloptera, Neuroptera e Raphidioptera do México, América Central, ilhas Caraíbas e América do Sul. *Acta Amaz.* (supl.), 7 (4): 1-61.
1982 — Review of the generic level classification of the New World Mantispidae. *Acta Amaz.*, 12 (1): 209-223.
- PENNY, N.D. & ARIAS, J.R.
1981 — *Insects of an Amazon Forest*. Columbia University Press, New York. 280pp.
- PETERSON, A.
1960 — Larvae of Insects. Part 2. Columbus Ohio.
- REHN, J.W.H.
1939 — *Anisoptera* Schneider a Homonym (Neuroptera: Mantispidae). *Ent. News*, 50: 82.
- SCHNEIDER, G.T.
1843 — *Monographia generis Rhapsidiae* L. Breslau.
- SERVILLE, J.G.A. & St. FARGEAU
1831 — In Olivier, *Encyclopédie méthodique*. Dictionnaire des Insectes. Paris.
- STITZ, H.
1913 — Mantispiden der Sammlung des Berliner Museums. *Mitt. zool. Mus. Berl.*, 7: 1-49.
- STRAND, E.
1942 — Miscellanea nomenclatorica zoologica et paleontologica. *Folia zool. hydrobiol.*, 11: 386-402.
- TJEDER, B.
1954 — Genital structures and terminology in the order Neuroptera. *Entom. Medd.*, 27: 23-40.
1956 — Neuroptera-Planipennia I, In Handström, B., Brinck, P., and Rudebeck, G., *South African Animal Life*, 4: 95-188.
- WALKER, F.
1853 — List of the specimens of neuropterous insects in the collections of the British Museum. Part II, (Sialidae-Nemopterides). London: 193-476.
1858 — Characters of undescribed Neuroptera in the collection of W.W. Saunders. *Trans. R. ent. Soc. Lond.*, 5: 176-199.
- WERNER, F.
1962 — Synopsis 189 (of address given at the Phoenix meetings of the Entomological Society of America). *Bull. ent. Soc. Amer.*, 8: 161.
- WESTWOOD, J.O.
1852 — On the genus *Mantispe*. *Trans. R. ent. Soc. Lond.*, 1: 252-270.
1867 — Descriptions of new species of Mantispidae in the Oxford and British Museums. *Trans. R. ent. Soc. Lond.*, 3rd Series. 5: 501-508.
- WOGLUM, R.S.
1935 — *Symphrasis signata* Hagen *Pan-Pacif. Ent.*, 11: 119.

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