

Review of the generic level classification of New World Mantispidae (Neuroptera)

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Abstract

The higher classification of New World Mantispidae is reviewed. Keys are provided to subfamilies, tribes and genera for the New World. The genus *Fusa* is synonymized with *Gerstaeckerella*, *Nobrega* with *Climaciella*, *Bellarminus* with *Nolima*; *Anchieta* is resurrected. The genus *Mantispa* is divided into four species groups, and the genus *Entanoneura* is redefined.

INTRODUCTION

Mantispidae are distinctive members of the Neuroptera, with elongate pronota and raptorial forelegs. In these respects they closely resemble praying mantids, but the wing venation and complete life cycle readily identify them as neuropterans. All mantispids are parasitic on other arthropods, from spider eggs to aculeate wasps to scarab beetles and lepidopterous larvae.

Eggs are laid on short stalks in large numbers on tree trunks. Upon hatching, the young larvae will hide under bark seeking out suitable hosts (McKeown & Mincham, 1948).

SYSTEMATICS

There never has been a modern, comprehensive treatment of the whole family, although the basic classification was first proposed by Enderlein (1910). Rehn (1939) reviewed the higher classification for North America and Williner & Kormilev (1959) described the species from Argentina. Handschin (1960) described some species of Mantispinae for South America, while Parker & Stange (1965) reviewed the status of the Platymantispini.

Stange (1968) listed the species from Argentina, and Penny (1977) listed 111 species in 15 genera for South and Central America.

Family MANTISPIDAE Leach, 1815

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

Type Genus: Mantispa Illiger (1798).

Adult Mantispidae are separated from other neuropterous families by the short antennae, numerous unbranched costal crossveins of the wing, elongate prothorax and raptorial forelegs. Larvae are scarabaeiform with short mandibles not bearing internal teeth. The family is found throughout temperate and tropical America, although they are much more common in the tropical zone. The family is usually divided into two subfamilies, although Lambkin (personal communication) indicates that a new study, soon to be published, will break the Platymantispinae into three subfamilies.

KEY TO SUBFAMILIES OF MANTISPIDAE

- 1a. Anterior tarsi each with only one claw and without arolia (Fig. 2) Mantispinae
- 1b. Anterior tarsi each with two claws and an arolium (Fig. 1) Platymantispinae

Subfamily PLATYMANTISPINAE Rehn, 1939b

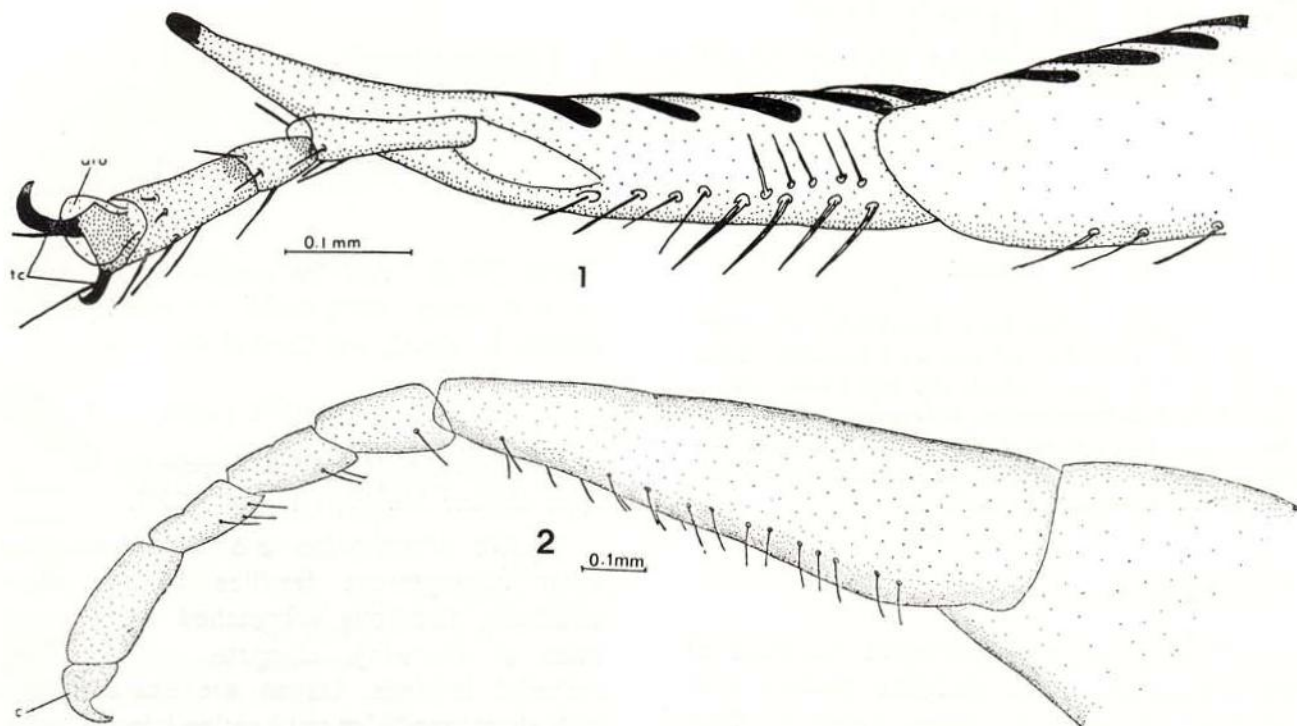
Symphrasini Navás, 1909, *Mem. R. Acad. cienc. artes Barcelona*, 7 (10): 484. (invalid name, based on synonymized generic name).

Anisopterinae Enderlein, 1910, *Stett. ent. Ztg.*, 71: 342. (invalid name, based on a homonomous generic name).

Platymantispinae Rehn, 1939b, *Ent. News*, 50: 82. (2)

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(2) — The name Platymantispinae would also be invalid because the type genus name *Platymantispa* is a junior synonym of *Anchieta*. However, Article 40 of the *International Code of Zoological Nomenclature* indicates that the name Platymantispinae must be retained, as the invalidity of its type genus was not recorded before 1961.



Figures 1-2 — Lateral view of right tarsi of 1) *Trichoscelia varia* (Walker) and 2) *Mantispa interrupta* Say. aro = arolium, tc = .tarsal claw.

Type Genus: Platymantispa Rehn, now considered a synonym of *Anchieta*.

This subfamily is the smaller in number of species, and is confined to Australia and the Americas. There are two claws on the fore tarsi. Although the Platymantispinae are easily identified, much confusion has existed as to the name. For a fuller discussion of synonymy, see the sections on *Trichoscelia* and *Anchieta*.

The Platymantispinae are generally divided into four American tribes: Platymantispini, Theristriini, Drepanicini and Nolimini.

KEY TO TRIBES OF PLATYMANTISPINAE

- 1a. Anterior first tarsal segment with a dentiform process (Fig. 1); adult female bearing ovipositor (Fig. 4); male penisfilum coiled (Fig. 3) Platymantispini
- 1b. Anterior first tarsal segment without dentiform process; adult female not bearing ovipositor; male penisfilum not coiled 2

- 2a. Subcosta of forewing entering costal margin far anterior to pterostigma (Fig. 8); fore tarsal claws bifid Nolimini
- 2b. Subcosta of forewing entering costal margin in area of pterostigma (Fig. 9); fore tarsal claws not forked 3
- 3a. Pterostigma of forewing isolated from R₁; only one Sc crossvein (Fig. 9) . Drepanicini
- 3b. Pterostigma filling costal area between R₁ and forewing margin; two Sc crossveins (Fig. 7) The istriini

Tribe Drepanicini Enderlein

Drepanicini Enderlein, 1910, *Stett. ent. Ztg.*, 71: 343.

Type Genus: Drepanicus Blanchard (1851), designated by Enderlein (1910).

There is only one known genus of this tribe in the New World: *Drepanicus* Blanchard from Chile and Argentina.

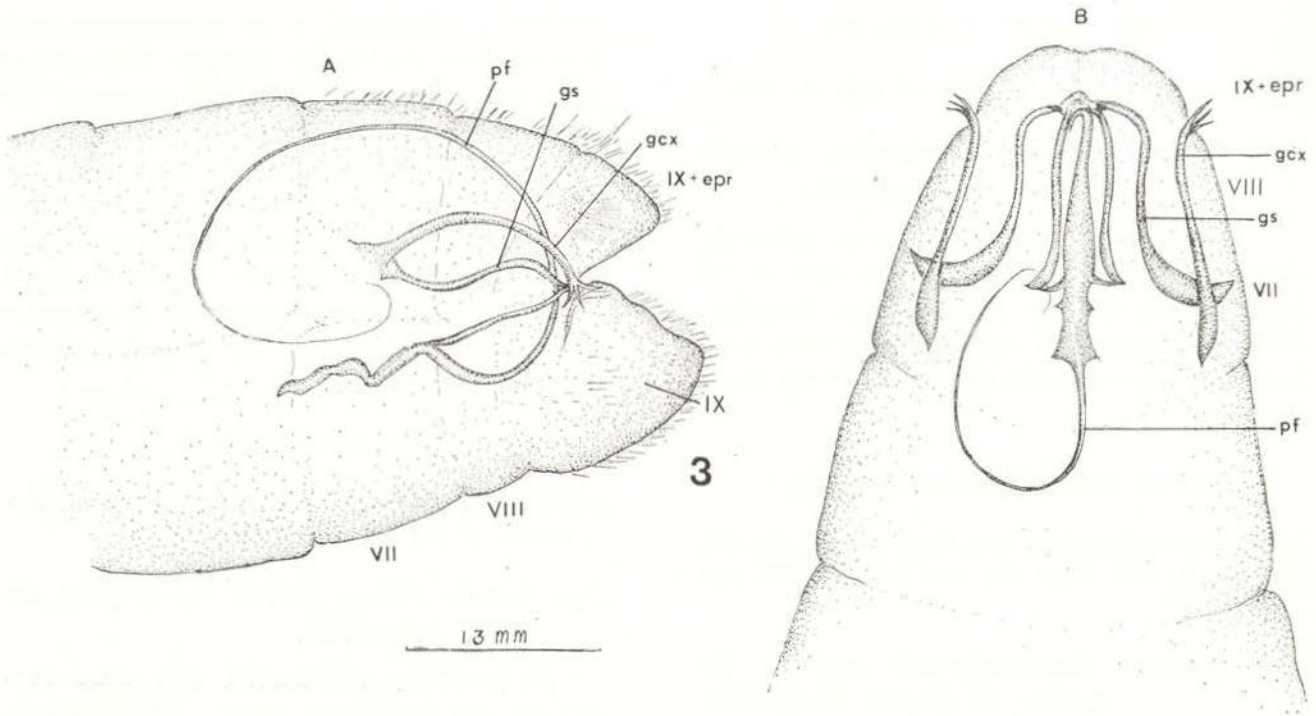
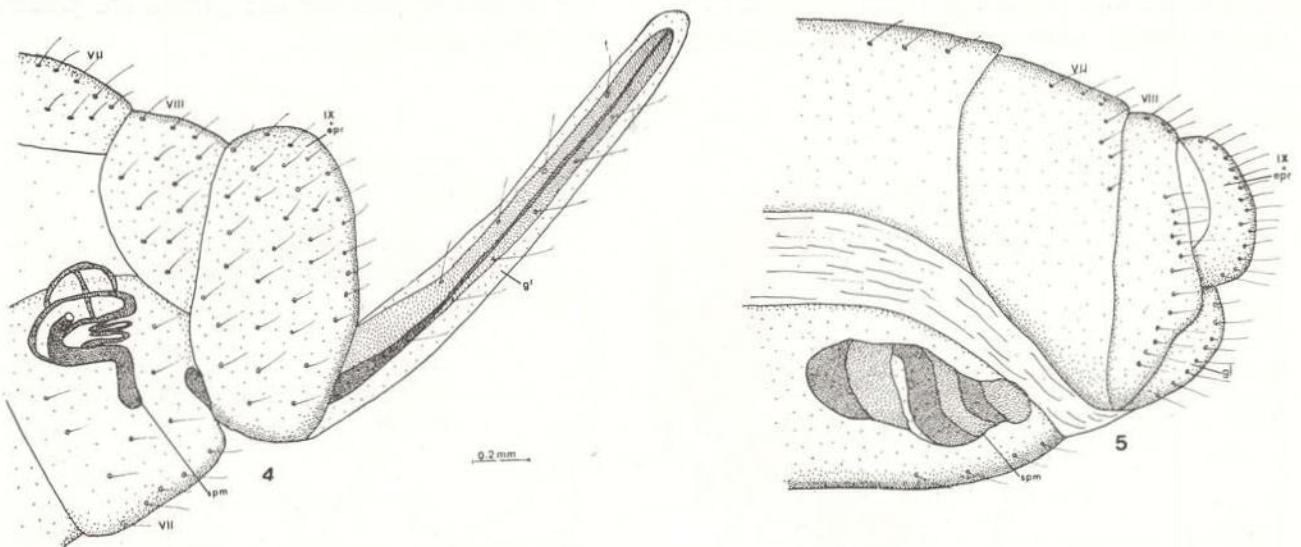


Figure 3 — Abdomen of *Trichoscelia santaremi* Navás A. Lateral view. B. Dorsal view, epr = ectoproct, gs = gonarcus, gcx = gonocoxite, pf = penisfilum.



Figures 4-5 — Lateral view of abdomen of 4) *Trichoscelia varia* (Walker) (female), and 5) *Mantispa flavomaculata* Latreille (female). epr = ectoproct, gl = gonapophyses laterales, spm = spermatheca.

Genus *Drepanicus* Blanchard

Drepanicus Blanchard, 1851, in Gay, *Histoire fisica de Chile*, 6: 130.

Molinella Navás, 1910, *Revta chil. Hist. nat.*, 14: 239.

Type Species: Drepanicus gayi Blanchard, designated by Enderlein (1910).

This genus is only known from two species, *D. gayi* and *D. chrysopinus* Brauer. All specimens are large and green, and *Drepanicus gayi* appears very similar to the leaf-mimicing katydids (Orthoptera: Tettigoniidae). The genus *Molinella* Navás was synonymized with *Drepanicus* by Banks (1913).

Tribe Theristriini Enderlein

Theristriini Enderlein, 1910, *Stett. ent. Ztg.*, 71: 343.

Type Genus: Theristria Gerstaecker, designated by Enderlein (1910).

This tribe has a distinctly longer subcostal vein and completely free medius vein of the wing, lacking in the related tribe Nolimini. Only one genus is recognized in this tribe from the Americas, *Gerstaeckerella* from South America.

Genus *Gerstaeckerella* Enderlein

Gerstaeckerella Enderlein, 1910, *Stett. ent. Ztg.*, 71: 368.

Fusa Navás, 1925, *Revta chil. Hist. nat.*, 29: 307. new synonymy.

Type Species: Gerstaeckerella gigantea Enderlein, by original designation. Type species of *Fusa* is *Fusa pirioni* Navás, by monotypy.

This is the only South American genus of Theristriini. The genus *Fusa* was described by Navás (1925) without giving differentiating

characters. However, it is synonymous with *Gerstaeckerella chilensis* (Hagen). This species does not differ markedly from others of the genus, although it is the smallest species. Penny (1977) mentioned seven species in the two genera, ranging from Chile and Argentina north to Colombia. The only specimen of this genus known from outside southern South America is the type specimen of *Gerstaeckerella gigantea* Enderlein. The Colombia record is probably erroneous.

Tribe Nolimini Navás

Nolimini Navás, 1914, *Mem. R. Acad. cienc. artes Barcelona*, 11 (7): 100.

Type Genus: Nolima Navás, by original designation.

As presently constituted, this tribe consists of one Australian genus, *Calomantispa*, and one Central American genus, *Nolima*. The character separating the two nominal American genera is a very weak one (relative length of the pronotum), and the two genera are presently being synonymized.

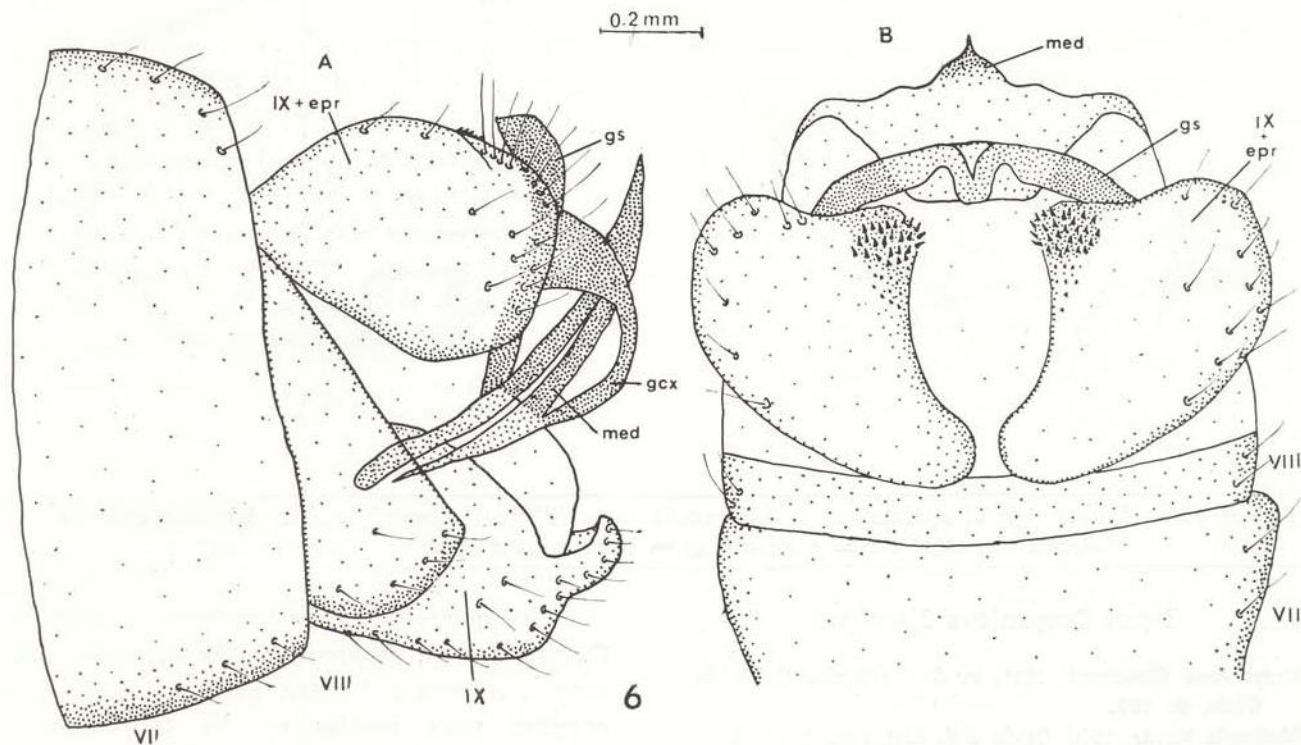
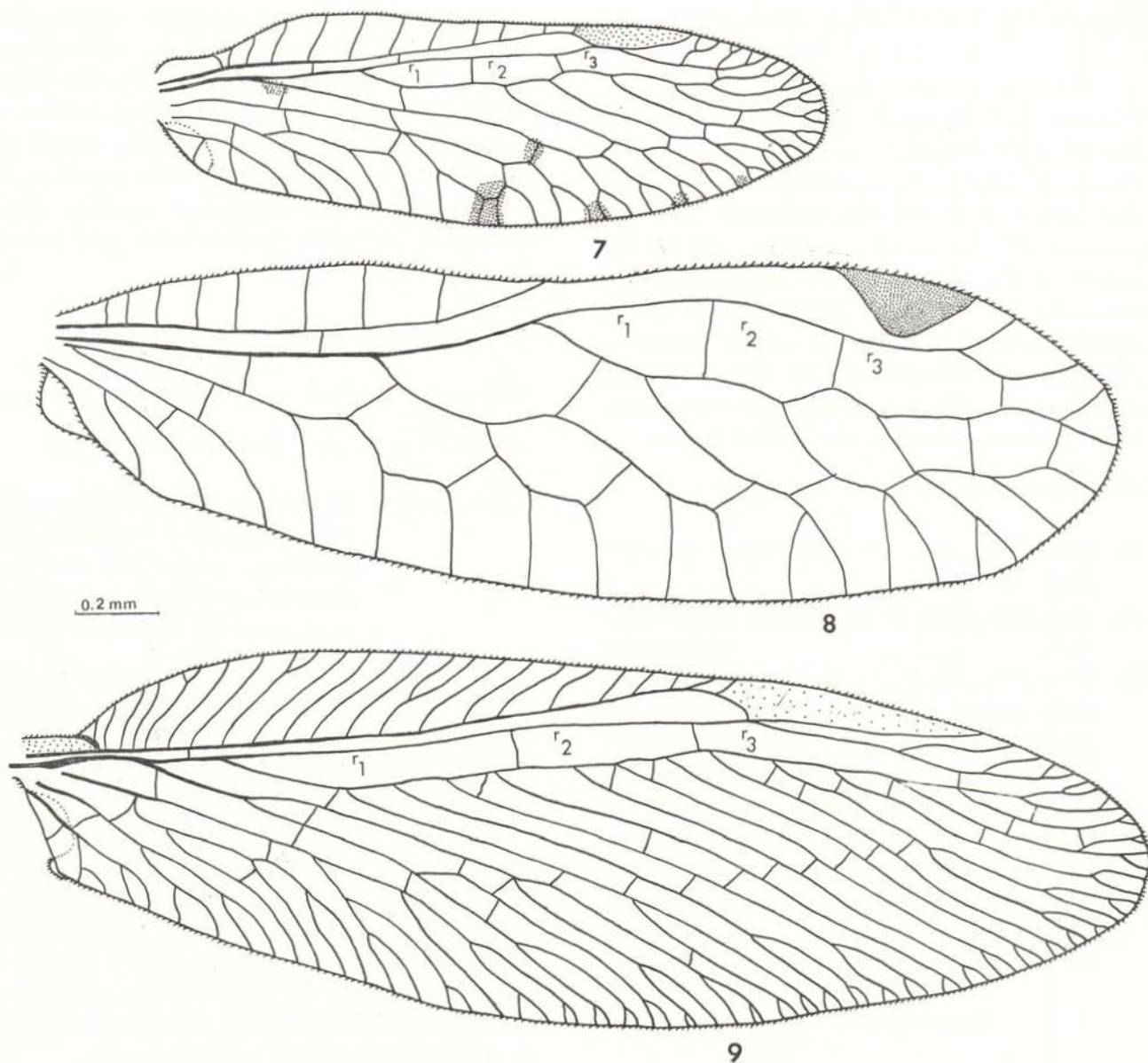


Figure 6 — Abdomen of *Mantispa flavomaculata* Latreille (male). A. Lateral view. B. Dorsal view. epr = ectoproct, gs = gonarcus, gcx = gonocoxite, med = mediuncus.



Figures 7-9 — Right forewings of 7) *Gerstaeckerella chilensis* (Hagen), 8) *Nolima infensus* Navás (modified from Navás, 1924), and 9) *Drepanicus chrysopinus* Brauer. r_1 = first radial cell, r_2 = second radial cell, r_3 = third radial cell.

Genus *Nolima* Navás

Nolima Navás, 1914a, *Mem. R. Acad. cienc. artes Barcelona*, 11 (7): 100.

Bellarminus Navás, 1914a, *Mem. R. Acad. cienc. artes Barcelona*, 11 (7): 102. (new synonymy).

Type Species: *Nolima victor* Navás, by original designation.

This genus has been separated from *Bellarminus* by the shorter, wider pronotum. After examining the type species of *Bellarminus* in the Paris Museum, no substantial differences could be noted, except that *B. pugnax* is the

smallest known species of this genus, and the pronotum is proportionally somewhat narrower. This author does not feel that these differences are sufficient for generic recognition.

Tribe Platymantispini Rehn

Symphrasini Navás, 1909, *Mem. R. Acad. cienc. artes Barcelona*, 7 (10): 484. (invalid name, based on a synonymized generic name).

Anisopterini Enderlein, 1910, *Stett. ent. Ztg.*, 71: 343. (invalid name, based on a homonymous generic name).

Platymantispini Rehn, 1939b, *Ent. News*, 50: 82.

Type Genus: Platymantispa Rehn, designated by Rehn (1939b).

Because of the considerable generic homonymy and synonymy in this tribe, the name has changed several times, although Platymantispini is easily characterized by the large first tarsal segment, the elongate terminal process of this tarsal segment, and the insertion of the second tarsal segment before the apex of the first. Males have a coiled penisfilum, while female bear a long ovipositor. As presently constituted, the Platymantispini contains only three American genera, ranging from Argentina north to the United States.

KEY TO GENERA OF PLATYMANTISPINI

- 1a. Subbasal spine of fore femur present (Fig. 11, 12) 2
- 1b. Subbasal spine of fore femur absent (Fig. 10) *Trichoscelia*
- 2a. Forewing with five radial veins originating from second radial cell; second radial cell of forewing straight; first and second radial cells of forewing frequently bearing setae on the membrane (Fig. 14) . *Anchieta*
- 2b. Forewing with two radial veins originating from second radial cell; second radial cell curving around wing apex; first and second radial cells of forewing devoid of setae on the membrane (Fig. 13) *Plega*

Genus *Plega* Navás

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

Type Species: Symphrasis signata Hagen, by original designation.

This genus was synonymized with *Symphrasis* by Tjeder (1959), but Parker & Stange (1965) found *Symphrasis* to be a synonym of *Trichoscelia* (confirming the synonymy originally proposed by Gerstaecker, 1888). However, Parker and Stange found several consistent differences between the type species of *Plega* and *Trichoscelia*, thus reestablishing the former generic name. The morphological features of *Plega* include, on the fore femur a "distal median row of sharp tubercles that splits into two rows near the basal one-half. Lateral of

the tubercles is a row of setae restricted to the distal half of the femur". Additionally, *Plega* has a subbasal spine on the fore femur and the second tarsomere of the fore tarsus is longer than in *Trichoscelia*. Penny (1977) recorded six species of *Plega* from Brazil north to Mexico. Three additional species were described by Rehn (1939a) from the United States.

Genus *Trichoscelia* Westwood

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

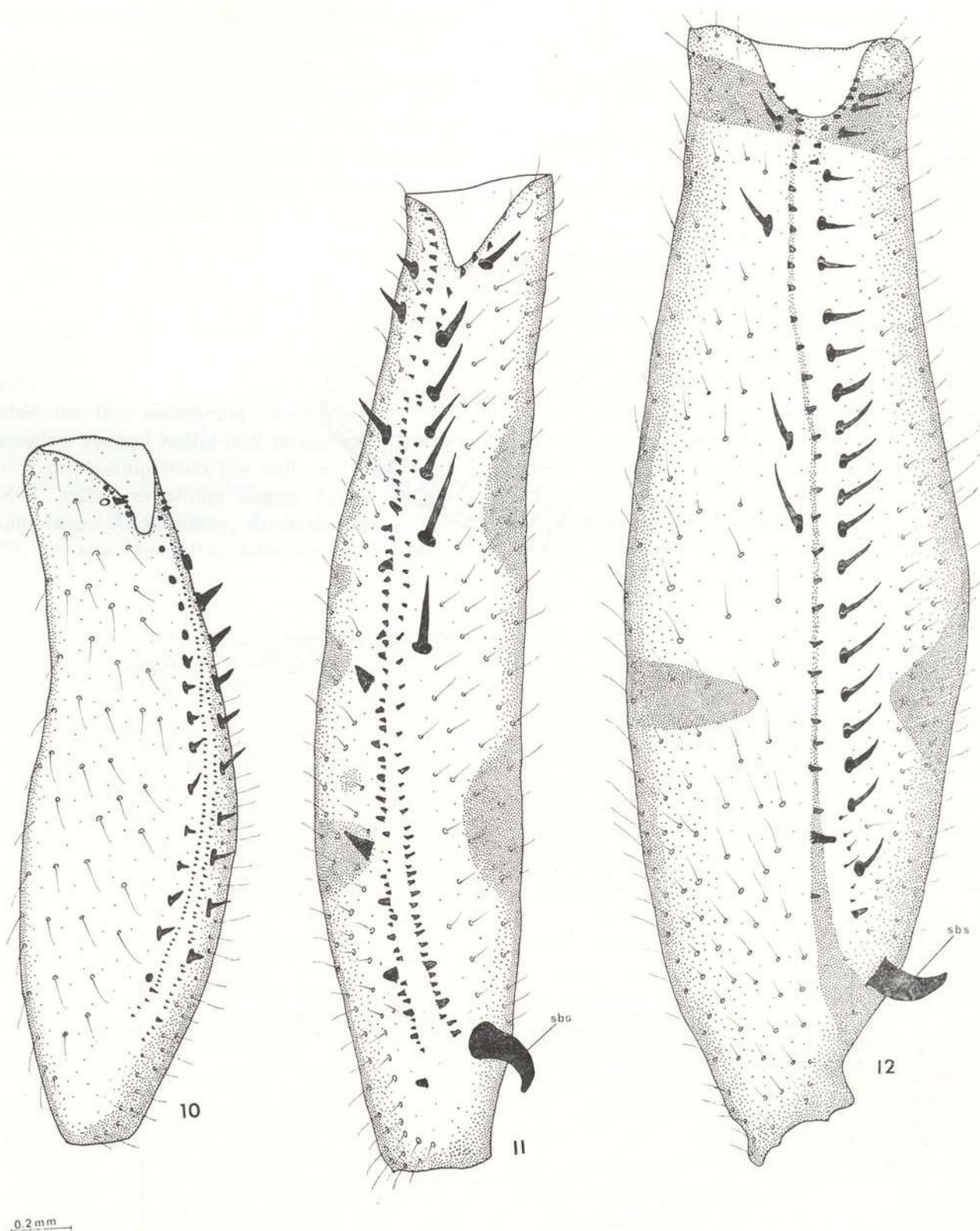
Symphrasis Hagen, 1877, *Stett. ent. Ztg.*, 38: 208.

Type Species: of *Trichoscelia* is *Mantispa fenella* Westwood, designated by Enderlein (1910) and of *Symphrasis* is *Rhaphia varia* Walker, designated by Enderlein (1910).

The synonymy and homonymy in this genus has led to various tribal and subfamily names, but the current synonymy is as follows: *Trichoscelia* and *Symphrasis* were synonymized with *Anisoptera* Schneider by Gerstaecker (1888). The synonymy of *Trichoscelia* with *Anisoptera* Schneider was confirmed by Banks (1913) and of *Symphrasis* with *Trichoscelia* by Parker & Stange (1965). However, *Anisoptera* Schneider is an *Anchieta*, with a subbasal spine on the fore femur and other distinctive morphological features. Thus, only *Symphrasis* is presently a synonym of *Trichoscelia*.

Trichoscelia was separated from *Plega* by Parker & Stange (1965) on the structures of the fore femur- "a submedian double row of setae mesad of which is a double row of minute tubercles, so that there are four parallel rows of setae and tubercles extending along most of the length of the closing face". *Trichoscelia* also lacks a subbasal spine on the fore femur and the first and second tarsomeres of the foreleg are relatively equal in size.

Penny (1977) recorded 14 species from South and Central America, although several of these species must be transferred to the genus *Anchieta*. The known range of *Trichoscelia* is from Argentina north to Mexico.



Figures 10-12 — Fore femur of 10) *Trichoscelia varia* (Walker) (left), 11) *Plega hagenella* (Westwood) (right), and 12) *Anchieta nobilis* Navás right.

Genus *Anchieta* Navás

Anisoptera Schneider, 1843, *Mon. Raphidiae*, p. 32 (preoccupied by *Anisoptera* Berthold, 1827, and *Anisoptera* Herrich-Schaeffer, 1840).

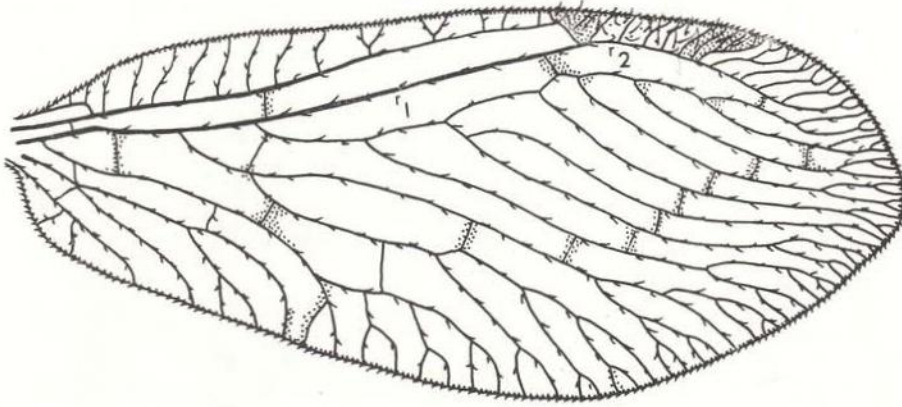
Anchieta Navás, 1909, *Mem. R. Acad. cienc. artes Barcelona*, (3): 7: 483.

Platymantispa Rehn, 1939b, *Ent. News*, 50: 82. (new synonymy).

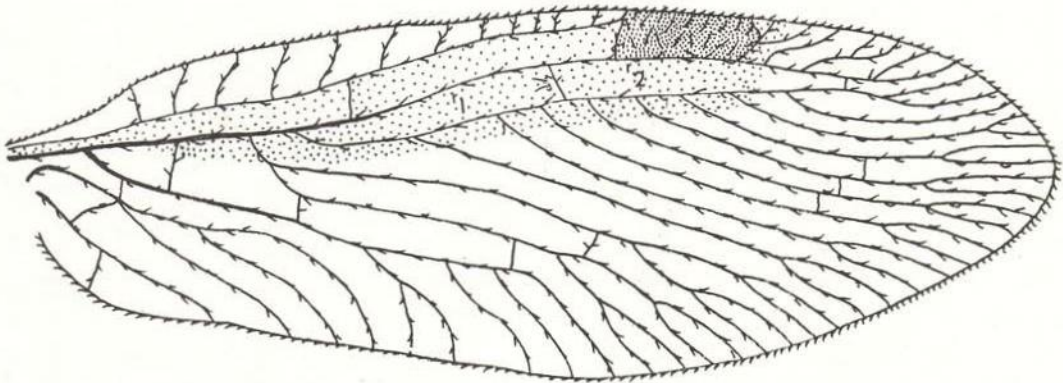
Anisopterana Strand, 1942, *Folia zool. hydrobiol.*, 11: 389 (new synonymy).

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

The generic name *Anchieta* was synonymized with *Anisoptera* by Enderlein (1910) and

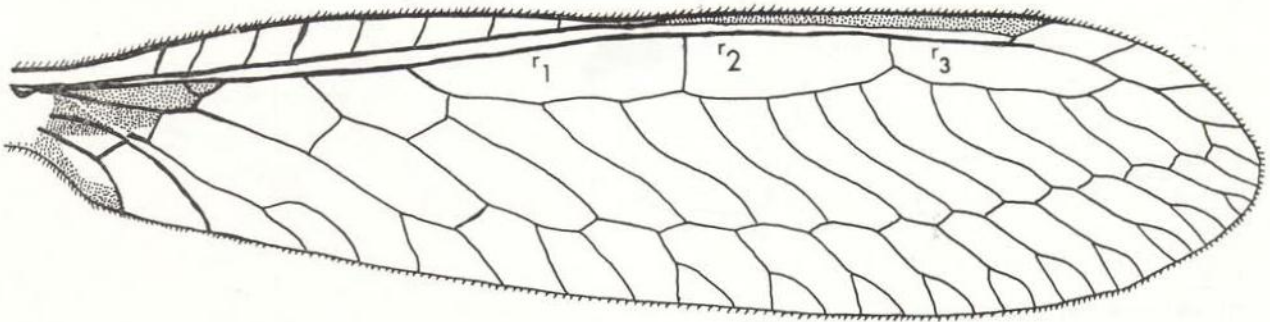


13



14

0.2mm



15

Figures 13-15 — Right forewing of 13) *Plega hagenella* (Westwood), 14) *Anchieta nobilis* Navás, and 15) *Entanoneura chopardi* Navás.

this synonymy was confirmed by Banks (1913). It is here reconfirmed. The names *Platymantispa* Rehn (1939b) and *Anisopterana* Strand (1942) are unnecessary additions to the literature when it was independently realized that *Anisoptera* Schneider was a junior homonym.

This genus possesses the subbasal fore femoral spine of *Plega*, but the longitudinal row of denticles is reduced to a single row in *Anchieta*. The majority of differences are found in the radial cells of the forewing. Both *Trichoscelia* and *Plega* have the second radial cell curved around the wing apex, with two or three veins originating from this cell, and without setae on the membrane. *Anchieta* has the forewing second radial cell straight, with five veins originating from the cell, and with both radial cells containing some setae on the membrane. Additionally, *Anchieta* has a long tuft of hairs emanating laterally to the male genitalia in the single male in the INPA Systematic Entomology Collections. This genus is known from southern Brazil northward to the Amazon Basin and French Guiana. In addition to *A. notha* and *A. nobilis*, *A. fumosella* (Westwood, 1867), *A. partheniella*

(Westwood, 1867), *A. eurydella* (Westwood, 1867) and *A. bella* (Westwood, 1867) are all members of this genus.

Subfamily Mantispiinae Leach

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

Mantispiini Navás, 1909, *Mem. R. Acad. cienc. artes Barcelona*, 7 (10): 184.

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

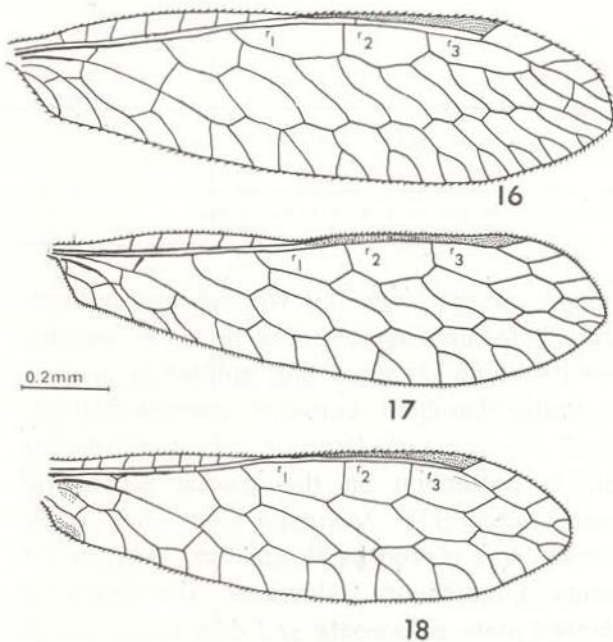
Type Genus: Mantispa Illiger (1798).

The Mantispiinae are frequently larger than Platymantispiinae, have only one tarsal claw, and usually thicker, longer antennae.

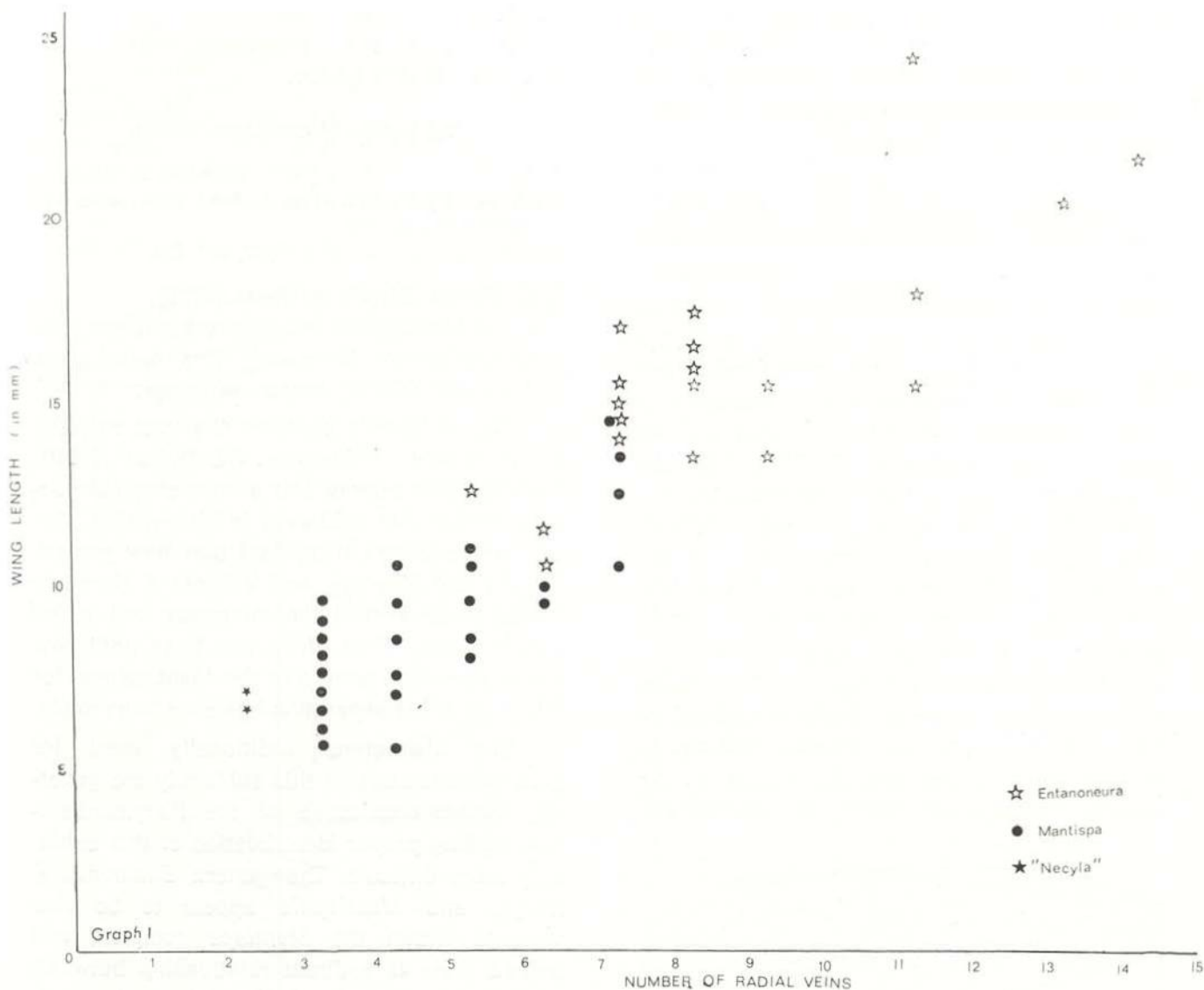
This subfamily contains the vast majority of American mantispids. Enderlein (1910) included four genera and a subgenus (*Mantispiilla*) within this subfamily in his revision. Navás subsequently described two new genera, *Necyla* and *Nobrega*, and Williner & Kormilev (1959) synonymized the subgenus and added a new genus. Thus, there has been until now seven American genera in the Mantispiinae, for which no tribal separation has ever been made.

The characters traditionally used for generic separation in this subfamily are generally weaker than those of the Platymantispiinae, making proper identification of this subfamily more difficult. The genera *Entanoneura*, *Necyla* and *Mantispiilla* appear to be size variants within the *Mantispa* complex, and indeed there is a direct relationship between wing length, length of the third radial cell, and number of radial veins (Graphs 1 and 2). Color patterns indicate that the *Entanoneura* probably are sister species (as herein defined), and the size reduction in *Necyla* and *Mantispiilla* could also be an evolutionary development of sister groups, although it is not difficult to find specimens of "Mantispa" having the loss of one radial vein of "Mantispiilla". Because this character state is so instable, the generic synonymy of *Mantispiilla* and *Mantispa* is upheld here.

The single described species of *Necyla* from the New World, *Necyla uniformis* Navás, has male genitalia quite unlike African and Asian species of this genus, but quite similar to several species of "Mantispa". As was pointed out in graph 1, the number of radial



Figures 16-18 — Right forewing of 16) *Mantispa gracilis* Erichson, 17) *Mantispa flavomaculata* Latreille, and 18) *Mantispa uniformis* (Navás).



Graph 1 — Wing length versus number of radial cells in three genera of Mantispa.

veins seems to be a function of size, so that the genus *Necyla*, as originally delimited, would contain the smallest members of any evolutionary sequence within the Mantispa. Thus, the true *Necyla*, with elongate male ectoprocts, does not occur in the New World.

The genera *Paramantispa*, *Climaciella* and *Entanoneura*, as constituted in this study, are felt to be natural groupings showing uniting apomorphic character states. However, their exclusion from the genus "Mantispa" would leave this genus in a paraphyletic state, unless other natural groupings were also separated as distinct genera. I have chosen to do this

in the present keys, but without giving these groups formal names, due to some parallel results being obtained and published upon in Australia (Lambkin, personal communication). Thus, the "*gracilis*" group has a distinctive double projection on the medial surface of male ectoprocts. *Mantispa phthisica* Gers-taecker was placed by Handschin (1960) in the genus *Entanoneura*. However, the elongate, pointed male ectoprocts and dark-tipped wings indicate a closer relationship to some African species of *Pseudoclimaciella* than to any other American group, and thus is placed in a group by itself. All of the preceding species, and

Mantispa costalis Erichson, have well developed hypomeres, and all the preceding except *M. costalis* have a heavily sclerotized membrane (mp of Tjeder, 1963) between the gonarcus and penisfilum of the male genitalia. *M. costalis* must form a group by itself due to presence of these characters, and lack of the distinctive characters mentioned for the "gracilis" and "phthisica" groups. Additionally, there is a group of small species which lack the sclerotized mp, and the hypomeres, but which have a well-developed medial process of the gonarcus. These species also generally have the male ninth sternite apically constricted. The species *M. januaria* Navás and *M. brunneonigra* (Handschin), placed by Handschin (1960) in *Entanoneura* do not show close relationships with this genus, and probably form a group of their own, but until male specimens can be examined, their placement

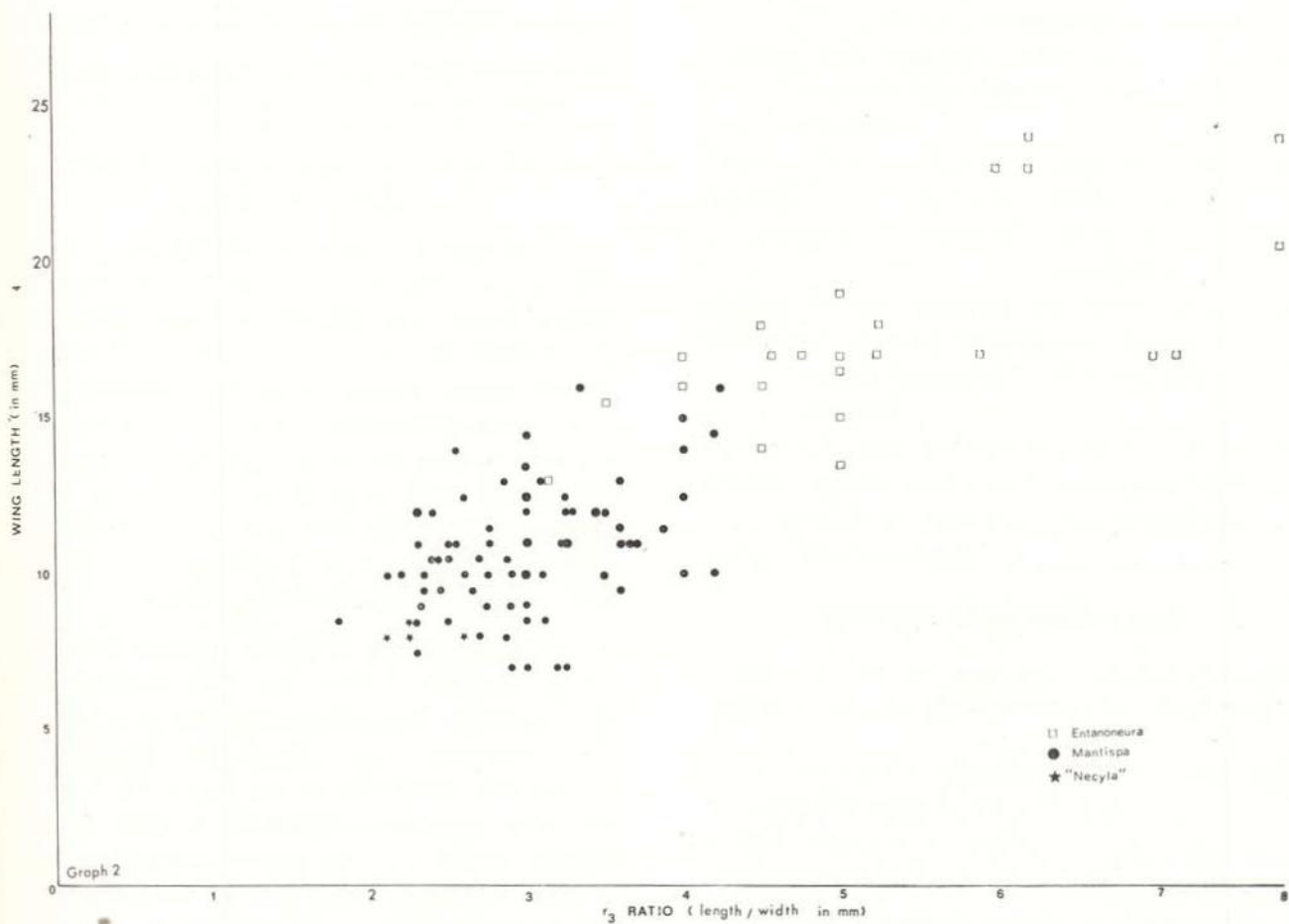
is uncertain. Thus, American Mantispinae can be placed in the following groups: *Entanoneura*, *Climaciella*, *Paramantispa*, "gracilis" group, "phthisica" group, "costalis" group, "flavomaculata" group, and perhaps the "januarina" groups.

Nobrega Navás is only a specimen of *Climaciella semihyalina* lacking much of costal coloration. Thus, this name is herein synonymized.

The Mantispinae range from Argentina north to the United States. No members of this subfamily are known from Chile.

KEY TO AMERICAN GENERA AND SPECIES GROUPS OF MANTISPINAE

- 1a. Cubitus of hindwing nearly straight and never coming close to first anal vein (Fig. 20) *Climaciella*



Graph 2 — Wing length versus r_3 ratio in three genera of Mantispinae.

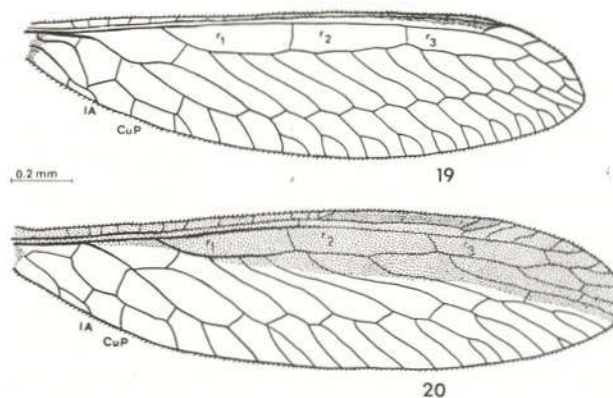
- 1b. Cubitus of hindwing bending sharply towards first anal vein, then bending sharply away again (Fig. 19) 2
- 2a. Cubitus of hindwing only briefly touching first anal vein, then angling sharply away again; occipital margin of head often wide (Fig. 22) *Paramantispa*
- 2b. Cubitus of hindwing joined to first anal vein for a short distance, then angling sharply away again; occipital margin of head always absent, with eyes reaching hind margin (Fig. 21) 3
- 3a. Crescent or semicircular marks on prozonal region of pronotum *Entanoneura*
- 3b. Prozonal region of pronotum with longitudinal stripes or small transverse marks, but without semicircular yellow markings 4
- 4a. Male ectoprocts bearing two elongate medial projections "*gracilis*" group
- 4b. Male ectoprocts bearing at most one medial projection 5
- 5a. Male ectoprocts elongate and pointed; hypomeres very thin and elongate "*phthisica*" group
- 5b. Male ectoprocts extending only slightly beyond ninth sternite, and apically rounded; male hypomeres, if present, not thin and elongate 6
- 6a. Male ectoprocts bearing medial pointed projection; hypomeres present, but small; medial process of gonarcus absent "*costalis*" group
- 6b. Male ectoprocts bearing low, flat medial field of spines; hypomeres absent; medial process of gonarcus well developed "*flavomaculata*" group

Genus **Climaciella** Enderlein

Climaciella Enderlein, 1910, *Stett. ent. Ztg.*, 71: 360.
Nobrega Navás, 1914b, *Broteria*, 12: 233, new synonymy.

Type Species: of *Climaciella* is *Mantispa brunnea* Say, by original designation;
of *Nobrega* is *Nobrega tinctus* Navás, by original designation.

Climaciella is similar to larger species of *Entanoneura* in having a very elongate third radial cell. However, the hindwing of *Clima-*



Figures 19-20 — Right hindwing of 19) *Entanoneura choardi* Navás, and 20) *Climaciella duckei* Navás.

ciella always has a straight cubitus, and the anterior border of the wings is darkened. *Climaciella* is a small genus, with only five species described from Argentina north to the United States.

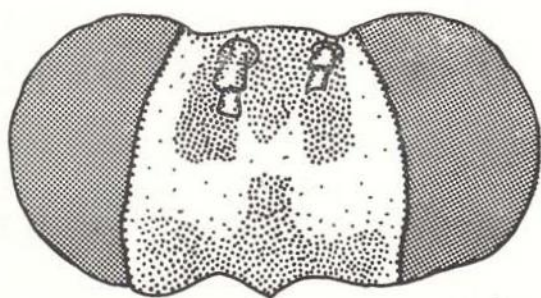
Genus **Paramantispa** Williner and Kormilev

Paramantispa Williner & Kormilev, 1959, *Revta Soc. ent Argent.*, 21: 10.

Type Species: *Mantispa decorata* Erichson, by original designation.

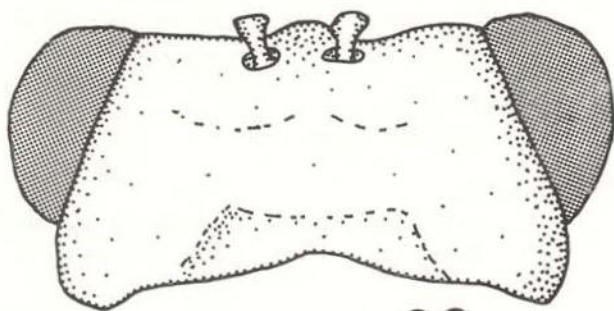
This genus is closely related to some of the larger "*Mantispa*s" and *Entanoneura* in having hypomeres absent, no development of the medial lobe of the gonarcus, but with a well-developed projection on the medial surface of the male ectoprocts. Some of these species are also among the most colorful of American mantispids, with large areas of the wing fully darkened. Four species are known from Argentina, Paraguay, Bolivia and southern Brazil, with one doubtful record from Surinam.

This genus was originally erected by Williner & Kormilev (1959) for two dark-winged species which had a large occipital area behind the compound eyes. Handschin (1960) expanded the definition of the genus to include two other species much closer to other "*Mantispa*s" based on the brief contact of the cubitus and first anal vein of the hindwing. This has made the genus harder to characterize, although these four species probably do form a natural lineage.



21

0.2 mm



22

Figures 21-22 — Dorsal view of vertex of 21) *Mantispa gracilis* Erichson, and 22) *Paramantispa decorata* (Erichson).

Genus *Entanoneura* Enderlein

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

Type Species: Mantispa limbata Gerstaecker, by original description.

This genus has had a variable history due to the weak nature of separating characters. Banks (1913) synonymized *Entanoneura* with *Mantispa*, while Williner & Kormilev (1959) accorded it subgeneric status, and Handschin (1960) described many of the South American species, giving it generic status once again. Penny (1977) listed eight species ranging from Argentina north to Costa Rica.

As defined in this study, *M. costalis*, *M. phthisica*, and probably *M. januaria* and *M. brunneonigra* are not closely related to other species of *Entanoneura*, based on the male genitalia, especially the hypomeres and mp. Thus, the genus *Entanoneura* has a much more

restricted number of included species, although the geographical distribution is not changed.

"*phthisica*" species group

Among all American Mantispa, this group stands farther apart than the rest, because of the distinctive form of the male genitalia. At present, only one species is included in this group. The male hypomeres and sclerotized area (mp) between the mediuncus and gonarcus indicate a primitive position for this species. However, among the American species, none has such elongate hypomeres, nor such elongate, pointed ectoprocts. Some African species appear to have this general configuration of the ectoprocts, but without more detailed study of the genitalia, no closer associations can be determined.

"*gracilis*" species group

Like the "*phthisica*" group, this species group has well-developed hypomeres and a sclerotized mp. 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. Included in this group are *M. gracilis*, *M. moulti*, *M. lineaticollis* and at least one species from North America. The geographical distribution of this group is from Argentina to the United States.

"*flavomaculata*" species group

This group is characterized as having very stout male ectoprocts with a low, flat field of medial spines; no hypomeres; no sclerotized area between the gonarcus and mediuncus; reduced size; and often a constricted apex to the ninth sternite. However, the characteristic feature is the development of a medial projection on the apex of the gonarcus which often shows externally above the mediuncus. Many of the species are pale yellow to green in color, although dark species also occur. Thus, the pale green, small species occurring over most of South America, which have been

identified as *flavomaculata*, *viridula*, and the North American species called *viridis* are included in this group, as are several species from Australia. The geographical distribution thus includes Australia, and in the New World from Argentina north to Wisconsin.

"costalis" species group

This group is intermediate between the first two groups and the "*flavomaculata*" group, having hypomeres present, but no mp in the male genitalia. Only one species is presently included in this group, *M. costalis*, which also has a number of dense spines on the apex of the ninth sternite. This species is only known from southern Brazil.

Many species of Mantispinae from Central America and some of the North and South American species are still known only from females, or from markings of the wing and body. As these become better known, the present concepts can be better refined, or modified. Then, more considerations on zoogeography can be attempted with the African and Asian species, which also are very poorly known, especially with respect to male genitalia.

SUMÁRIO

A classificação superior de Mantispidae no Novo Mundo é revisado. Chaves são fornecidas para subfamílias, tribos e gêneros para o Novo Mundo. O gênero *Fusa* é sinonimizado com *Gerstaeckerella*, *Nobrega* com *Climaciella*, *Bellarminus* com *Nolima*; e *Anchieta* é ressurgido. O gênero *Mantispa* é dividido em quatro grupos de espécies, e o gênero *Entanoneura* é redefinido.

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. Thierr.*, p. 409.

BLANCHARD, E.

- 1851 — In Gay, C., *Historia fisica de Chile*, zool. Orden V. Névroptères. 6: 85-142. Paris.

ENDERLEIN, G.

- 1910 — Klassifikation der Mantispiden nach dem Material des Stettiner Zoologischen Museums. *Stett. ent. Ztg.*, 71: 341-379.

GERSTAECKER, A.

- 1888 — Weitere Beiträge zur Artenkenntnis der Neuroptera Megaloptera. *Mitt. naturw. Ver. Neu-Vorpomm.*, 19: 89-130.

HAGEN, H.A.

- 1877 — *Symphrosis*, 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 — In Kugelmann, *Verzeichniss der Käfer Preussens* — — — etc. (Halle, Gebauer), 8: 1-510.

LEACH, W.E.

- 1815 — "Entomology" (Brewster). *Edinb. Encyclo.*, 9: 57-172.

McKEOWN, K.C. & MINCHAM, V.H.

- 1948 — The biology of an Australian mantispid (*Mantispa vittata* Guerin). *Aust. Zool.*, 11: 207-224.

NAVÁS, L.

- 1909 — Mantépidos nuevos. *Mems R. Acad. Cienc. Artes Barcelona*, 7: 1-15.
 1910 — Neurópteros chilenos. *Rvta chil. Hist. nat.*, 14: 235-241.
 1914a — Neuropteros nuevos ó pouco conocidos. Segunda Serie. *Mems R. Acad. Cienc. Barcelona*, 11 (8): 1-17.
 1914b — Neurópteros sudamericanos. Primeira Serie. *Broteria*, 12: 45-57, 215-235.
 1925 — Insectos neotrópicos. *Rvta chil. Hist. nat.*, 29: 305-313.
 1928 — Insectos neotrópicos (3.ª Serie). *Rvta chil. Hist. nat.*, 31 (1927): 316-328.

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 Amazonica* (suplemento). 7 (4): 1-61.

REHN, J.W.H.

1939a— Studies in North American Mantispidae. **Trans. Am. ent. Soc.**, 65: 237-263.

1939b— **Anisoptera** Schneider a Homonym (Neuroptera: Mantispidae). **Ent. News**, 50: 82.

SCHNEIDER, W.G.

1843 — **Mon. Raphidiae**, p. 32.

STANGE, L.A.

1968 — Catálogo de Neuroptera de Argentina y Uruguay. **Acta zool. lilloana**, 22: 5-86.

STRAND, E.

1942 — Miscellanea nomenclatorica zoologica et paleontologica. **Folia zool. hydrobiol.**, 11: 386-402.

TJEDER, B.

1959 — Neuroptera-Planipennia. The lacewings of southern Africa. 2. Family Berothidae. **South African Animal Life**, 6: 256-314.

1963 — A new **Necyla** from Uganda (Neur. Mantispidae). **Opusc. Ent.**, 28: 121-126.

WESTWOOD, J.O.

1852 — On the genus **Mantispe**. **Trans. R. ent. Soc. Lond.**, 1: 252-270.

WILLINER, G.J. & KORMILEV, N.A.

1959 — Notas sobre Mantispidae neotropicales, I. (Neuroptera). **Rvta Soc. ent. argent.**, 12: 1-18.

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