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Source: Journal of Orthoptera Research, 10(1) : 89-104

Published By: Orthopterists' Society

URL: https://doi.org/10.1665/1082-6467(2001)010[0089:TMFEWS]2.0.CO;2

The mantids from Ecuador, with some biogeographic considerations

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Abstract

The authors studied a rich collection of mantids from Ecuador, belonging to the Pontificia Universidad of Quito. Forty species were identified, among them 18 are new for the Ecuadorian fauna and *Chopardiella poulaini* is new to science.

Key words

Mantodea, Ecuador, *Chopardiella*, new species.

Introduction

Faunistic knowledge of mantids from Ecuador is extremely poor. To some old works by Giglio-Tos (1898) (11 species), Francisco Campos (1923) (5 species) and Hebard (1924) (10 species), we can add only a little additional taxonomic data, gathered from the entomological literature. Of these most recent are Terra (1994), Lombardo (1996, 1999a, b, 2000) and Lombardo & Ippolito (2001). Thanks to the extensive collections of Giovanni Onore and his staff, deposited at the Pontificia Universidad de Quito, it has now been possible to examine the mantid fauna of this important biogeographic area. This has allowed us to add to the previous list more than 18 species of which *Chopardiella poulaini* is new. Thus in Ecuador are present 49 species (Table 1), currently belonging to 32 genera and 5 families, equal to about 15.5% of all the mantid fauna of South America, and of these 28.5% are endemics. The regions of Napo and Pichincha, with 59.1% and 34.6% respectively of all species present in Ecuador, are the best known (Table 2). This is because these two regions allow good access and have two important biological stations (Otonga in Pichincha and Yasunì in Napo) that attract many researchers from all over the world.

Through corrected identification, some species such as: *A. falcata* Stål, *Pseudacanthops spinulosa* Saussure, *Choeradodis laticollis* Serville, *Oxyopsis rubicunda* (Stoll), *Stagmatoptera binotata* Scudder, and *Stagmatoptera supplicaria* (Burmeister), must be removed from Ecuador's fauna (Lombardo & Ippolito 2001; Lombardo 2001 in press; Terra 1995).

Materials and methods

The material examined in this study is deposited in the following institutions: Pontificia Universidad de Quito, Departamento de Biologia y Museo (QCAZ); Muséum d'histoire naturelle Paris (MNHN) and in the collection of the authors. Drawings were made using a Leica MZ8 stereomicroscope and camera lucida.

Species list examined

Acontista concinna (Perty, 1833)
(Figs 1, 4, 6, 9)

Reference.— Giglio-Tos, 1898, Santiago Valley.

Material examined.— NAPO: San Rafael 20-X-92, 1 ♀ , VIII-91, 1 ♀ and 1 ♂ (Leg. Onore) (QCAZ); I-82, 1 ♀ (Leg. Arguello) (QCAZ); Pto Murieldo Conhuencio 12-XI-87, 1 ♀ (Leg. Cordova) (QCAZ); Sunka I-89, 1 ♀ (Leg. Sandoval) (QCAZ); Coca III-85, 1 ♀ (Leg. Onore) (QCAZ); Tena 26-XII-95, 1 ♂ (Leg. Ayala) (QCAZ).
PICHINCHA: Pto Quito 28-X-92, 1 ♀ (Leg. Noboa) (QCAZ).
MORONA SANTIAGO: Macas V-85, 1 ♀ (Leg. Onore) (QCAZ).
SUCUMBIOS: El Reventador 19-XI-93, 1 ♂ (Leg. Garcés) (QCAZ); Rio Aguarico 25-XII-95, 1 ♀.
PASTAZA: Villano 7-VII-96, 1 ♂ (Leg. Narajio) (QCAZ).

Remarks.— These specimens correspond very well to the original description of the species. We take this opportunity to describe the male genitalia because these structures are a valid diagnostic.
Male genitalia: ventral phallomere (Figs 6, 9) more or less rhomboidal, longer than broad; anterior margin with a long and robust process; distal process short and acuminate. Left phallomere not well sclerified, with membranous phalloid apophysis.

Distribution.— This species is widely distributed in French Guyana, Brazil, Ecuador, Peru, Bolivia, Paraguay.

Acontista festae Giglio-Tos, 1915
(Figs 2, 8, 11)

Reference.— Giglio-Tos, 1898, Santiago Valley.

Material examined.— PICHINCHA: Rio Guajahto 14-II-87, 1 ♂ (Leg. Grjalsu) (QCAZ); Carchi: Chical 7-VII-83, 2 ♂♂

Table 1. List of known species of Ecuadorean mantids (*first report).

Fam. HYMENOPODIDAE Giglio-Tos, 1927
Subfam. Acontistinae Giglio-Tos, 1919
Acontista concinna (Perty, 1833)
Acontista ecuadorica (Hebard, 1924)
Acontista festae Giglio-Tos, 1915
*Raptrix fusca** (Oliver, 1792)
Raptrix perpiscua (Fabricius,1787)
Tithrone latipennis Lombardo, 1996
Callibia diana (Stoll, 1813)
Subfam. Acanthopidae Burmeister, 1838
Acanthops erosula Stål, 1877
Acanthops royi Lombardo & Ippolito, 2001
Acanthops onorei Lombardo & Ippolito, 2001
*Metilia brunneri** (Saussure, 1871)
Subfam. Stenophyllinae Giglio-Tos, 1919
Stenophylla lobivertex Lombardo, 2000

Fam. THESPIDAE Giglio-Tos, 1919
Subfam. Thespinae Giglio-Tos, 1919
*Musonia surinama** (Saussure,1869)
Macromusonia conspersa (Saussure, 1870)
Subfam. Miopteriginae Kirby, 1904
Calopteromantis hebardi Terra, 1982
Calopteromantis otongica Lombardo & Ayala, 1998
Subfam. Pseudomiopteriginae Giglio-Tos, 1919
Pseudomiopterix festae (Giglio-Tos, 1898)

Fam. MANTIDAE Stål, 1877
Subfam. Angelinae Giglio-Tos, 1927
Angela armata (De Hann, 1842)
*Angela guianensis** Rehn, 1906
*Angela peruviana** (Giglio-Tos, 1916)
Subfam. Oligonicinae Giglio-Tos, 1919
Thesprotiella festae (Giglio-Tos, 1898)
Thesprotiella similis Chopard, 1916
*Thrinaconyx fumosus** Saussure & Zehntner, 1894
*Pseudomusonia lineativentris** (Stål, 1877)
*Bantia fusca** Chopard, 1912
Pseudopogonogaster mirabilis Beier, 1942
Carrikerella cheratophora Hebard, 1922
Subfam. Liturgusinae Giglio-Tos, 1919
*Liturgusa cayennensis** Saussure, 1869
Liturgusa charpentieri Giglio-Tos, 1927
*Liturgusa maya** Saussure & Zehntner, 1894
*Liturgusa peruviana** Giglio-Tos, 1915
Subfam. Photinae Giglio-Tos, 1919
*Macromantis hyalina** (Degeer, 1773)
Metriomantis occidentalis Lombardo, 1999
Subfam. Mellierinae Giglio-Tos, 1919
Xystropeltis meridionalis Lombardo, 2000
Subfam. Mantinae Kirby, 1904
Stagmomantis theophila Rehn, 1904

Fam. VATIDAE Stål, 1877
Subfam. Stagmatopterinae Giglio-Tos, 1919
Parastagmatoptera flavoguttata (Serville, 1839)
Stagmatoptera flavipennis (Serville, 1839)
Subfam. Vatinae Stål, 1877
Phyllovates cingulata(Drury, 1773)
Phyllovates brevicornis (Stål, 1877)
*Heterovates pardalina** Saussure, 1872
*Vates biplagiata** Sjostedt, 1930
Vates festae Giglio-Tos, 1898
*Vates weyrauchi** Beier, 1954
*Vates pctinicornis** (Stål, 1877)
Oxyopsis festae (Giglio-Tos, 1914)
Catoxyopsis dubiosa Giglio-Tos, 1898
*Chopardiella poulaini** n.sp.

Fam. CHOERADODIDAE Kirby, 1904
Subfam. Choeradodinae Kirby, 1904
Choeradodis laticollis Serville, 1831
Choeradodis rhobicollis (Latreille, 1883)
Choeradodis stalii Wood-Mason, 1880

(Leg. Rawlins) (QCAZ); Pailon 9-X-83, 1 ♂ (Leg. Levy) (QCAZ).

Remarks.— These specimens agree exactly with the description of the holotype. As for the previous species, we give a brief description of the male genitalia.
Male genitalia: ventral phallomere (Figs 8, 11) longer than broad with anterior process more narrow than in the former species; distal process with two lobes separating a large excavation. Left phallomere as long as it is broad with a membranous phalloid apophysis.
This species is related to *A. concinna,* but differs in the following characters: the pronotum (Figs 1, 2) is larger and more robust; the distal process of the ventral phallomere is smaller and less acute.

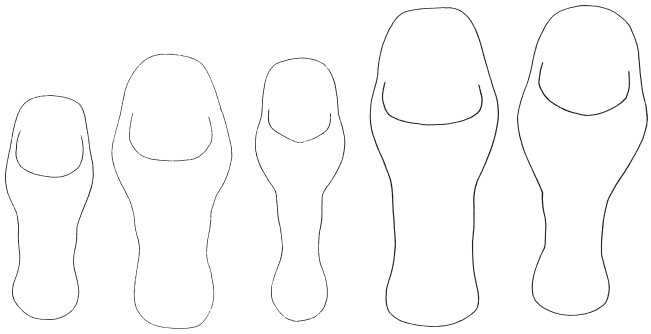
Distribution.— This species is endemic to Ecuador.

Acontista ecuadorica Hebard, 1924
(Figs 3, 5, 7, 10)

Reference.— Hebard, 1924, Rio Pescado, Cuenca, Canton Azuay.

Material examined.— COTOPAXI: Otonga Sto Domingo de las Pampas 8-III-96, 1 ♀ (Leg. Lombardo) (Coll. Lombardo); Sto Domingo 7/8. XII-84, 1 ♂ (Leg. S. Sture) (QCAZ); Sto Domingo XII-91, 1 ♂ (Leg. F. Silva) (QCAZ).
NAPO: Archidona 750m 30-II-91, 1 ♂ (Leg. Vasquez) (QCAZ).
PICHINCHA: Pto Quito V-84, 1 ♀ (Leg. Onore) (QCAZ).

Remarks.— This species has been adequately described by its author; we furnish the description of the male genitalia because it is lacking.



Figs 1-5. Pronotum: **1, 4** *A. concinna* ♂ and ♀ ; **2** *A. festae* ♂ ; **3** *A. ecuadorica* ♂; **5** *A. ecuadorica* ♀.

Male genitalia: ventral phallomere (Figs 7, 10) longer than broad, anterior process long and narrow; distal process short and stocky. Phalloid apophysis membranous.
This species differs from the previous species by the following characters: pronotum (Figs 3, 5) longer and more narrow, distal process of the ventral phallomere shorter and more stocky.

Distribution.— The species is endemic to Ecuador.

Raptrix fusca (Oliver, 1792)

Reference.— Giglio-Tos, 1898, Gualaquiza.

Material examined.— NAPO: Yasunì Puce 11/23-IX-95, 2 ♂♂ (Leg. E. Baquero, F. Maza) (QCAZ); 10-II-97, 1 ♂ (Leg. Andrade) (QCAZ); 9-II-97, 1 ♂ (Leg. Tapia) (QCAZ); 2-VI-97, 1 ♂ (Leg. Onore) (QCAZ); 6-II-97, 1 ♂ (Leg. Timpe) (QCAZ). Rio Puyamino: 2-VI-97, 1 ♂ (Leg. Salazar) (QCAZ).

Remarks.— The specimens correspond completely with the type species, except for the presence of a large black spot on the base of the big internal spines of the anterior femora.

Distribution.— This species is distributed in French Guyana, Suriname, Brazil, Ecuador and Bolivia.

Callibia diana (Stoll, 1813)

Reference.— Hebard, 1924, Canelos, Rio Bobonza, Tungurahua.

Material examined.— MORONA SANTIAGO: Macas V-85, 1 ♀ (Leg. Onore) (QCAZ).

Distribution.— This species is distributed in Venezuela, French Guyana, Brazil, Ecuador and Bolivia.

Acanthops erosula Stål, 1877

Material examined.— NAPO: Shushufindi III.1985, 1 ♂ (leg. Ernest Martinez) (QCAZ); Paute III.1982, 1 ♂ (Leg. Onore) (QCAZ).

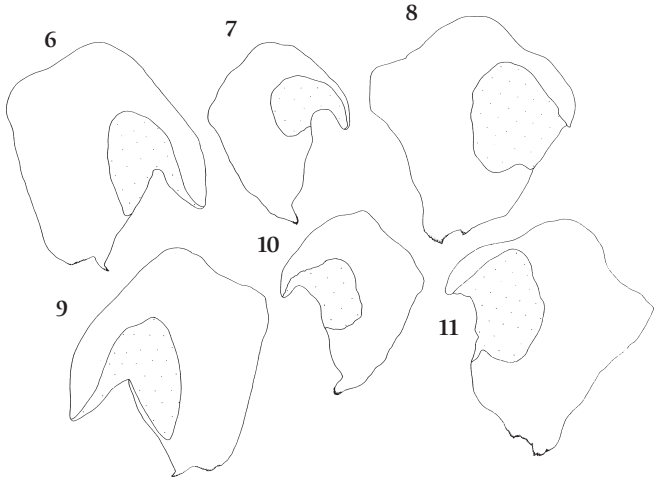
Remarks.— These specimens correspond completely with the type species.

Distribution.— The species was known only in Peru and Bolivia; thus it is new for the Ecuadorian fauna.

Metilia brunneri Stål, 1877

Material examined.— NAPO: Coca 23-XII-1980, 1 ♂ (Leg. Vartas) (QCAZ).

Remarks.— The specimen agrees exactly with the description of the holotype.



Figs 6-11. Ventral phallomere: **6, 9** *A. concinna*; **7, 10** *A. ecuadorica*; **8, 11** *A. festae*.

Distribution.— This species is known from: Nicaragua, Costa Rica, French Guyana, Brazil and Peru. This is a first report for the Ecuadorian fauna.

Gen. ***Angela*** Serville, 1839

This genus is widely distributed in Central-South America; in Ecuador there are 3 described species: *A. armata* (De Haan), *A. guyanensis* Rehn and *A. peruviana* (Giglio-Tos).

Key to species

Males:

1. Discoidal field of the metathoracic wings with dark brown marks and 3-4 vertical bands not reaching the posterior margins of the wings ……..……*A. armata*
— Discoidal field of the metathoracic wings with a large apical dark spot……..…….....…2

2. Apical spot of the metathoracic wings uniformly brown .....……..….*A. guianensis*
— Apical spot of the metathoracic wings violaceous, shiny, with some yellow transverse bands ….....….....
.....……. *A. peruviana*

Table 2. Percent species present in each region.

ESMERALDAS	20.4
MANABI	6
CARCHI	-
IMBABURA	6
PICHINCHA	34.6
COTOPAXI	14.2
LOS RIOS	10.2
BOLIVAR	6
TUNGURAHUA	4
CHIMBORAZO	2
GUAYAS	8
CANAR	-
AZUAY	4
EL ORO	2
LOJA	6
ZAMORA	6
NAPO	59.1
PASTAZA	10.2
MORONA SANTIAGO	6
SUCUMBIOS	20.4

Females:

1. Lateral margins of the pronotum with teeth..... .... *A. armata*
— Lateral margins of the pronotum smooth ..……2

2. Pronotum slender (ratio of length : maximum width 19.02), discoidal field of the metathoracic wings with 2 dark brown bands ….....……..... *A. guianensis*
— Pronotum more robust (ratio of length : maximum width 9.25), discoidal field of the metathoracic wings with 3 dark brown bands …….. *A. peruviana*

Angela armata (De Haan, 1842)
(Figs 12, 15, 18, 19, 22, 23, 26, 28)

Reference.— Giglio-Tos, 1898, Santiago Valley.

Material examined—NAPO: Coca VII-84, 1 ♀ (Leg. Onore) (QCAZ); Volcan Reventador 9-I-87, 1 ♂ (Leg. Plaza) (QCAZ); La Serena 450m 9-V-93, 1 ♂ (Leg. Santander) (QCAZ); San Rafael 1100m 27-XII-94, 1 ♂ (Leg. Santiago Espinosa); Rio Hollin 18-III-96, 1 ♂ (Leg. Lombardo) (Coll. Lombardo).
SUCUMBIOS: Tarapoa 280m 27-X-96, 1 ♀ (Leg. Zapata) (QCAZ).
COTOPAXI: Sto Domingo Colorados 800m 17-I-87, 1 ♀ (Leg. Casares) (QCAZ).

Remarks.— This species has been incompletely described by Haan, therefore it is opportune to furnish a brief description of both sexes.

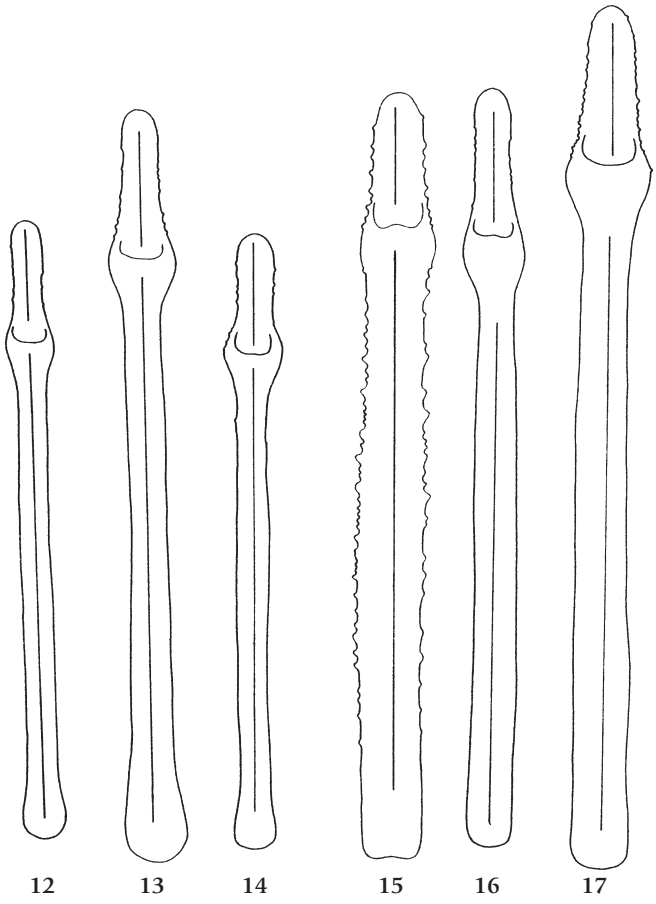
Description.—**Male.** Head: about 0.85 times as wide as the prozona; eyes large and globose; vertex narrow, lower than an imaginary line joining the apex of eyes; frontal shield very transverse, upper margins sinuous.
Thorax: pronotum slender (Fig. 12); prozona with dark brown, denticulated lateral margins; those of the metazona smooth; supracoxal dilatation distinct with rounded lateral margins. Anterior legs slender, dark brown; coxae about 0.49 times as long as metazona; anterior margins with scattered small granules; apical lobes divergent, with external one larger and more acute. Femora 0.51 times as long as the metazona, and 12.2 times as long as its minimum width; external surface with irregular, small dark spots; 3 discoidal spines, with the third one longer, 4 external spines all dark with black apex, internal spines dark. Tibiae 0.26 times as long as metazona with 5 external spines all dark with black apex, and 11-15 internal dark spines. Tegmina narrow, chestnut color, 5.77 times as long as their maximum width, with subrounded apex. Metathoracic wings with costal field chestnut, discoidal field hyaline with chestnut concentric bands some of which fuse to form transverse bands not reaching external margins of the wings.
Abdomen: dark cylindrical narrow; supra-anal plate triangular with acute apex and short medial carina; cerci with last article flattened and longer than wide.
Male genitalia: ventral phallomere longer than wide, without distal process; posterior margin (Figs 18, 19) with large pit; anterior process developed. Phalloid apophysis long and sinuous (Figs 22, 23).

Description.—**Female.**
Head: brown, 0.2 times as wide as metazona length. Eyes globose, transverse frontal shield. Thorax: pronotum (Fig.15) more robust than in male, 9.35 times as long as its maximum width; lateral margins with robust teeth; the teeth are less robust in the female specimen from Pichincha. Anterior legs similar to male. Wings not well developed, reaching the distal margin of the second urotergites. Mesothoracic wing brown, 3.1 times as long as its maximum width, with subrounded apex; metathoracic wings with costal discoidal area violaceus, shiny with 3-4 transverse yellow bands.
Abdomen: abdomen similar to male, distal margins of tergites with a small medial tooth; supra-anal plate and cerci like those of male.

Distribution.— This species is distributed in Costa Rica, French Guyana, Ecuador and Peru.

Angela guianensis Rehn, 1916
(Figs 13,16, 20, 24, 27, 29)

Material examined.— NAPO: Lagartochocha XI-91, 1♀ (Leg. Saugge) (QCAZ); Cuyabeno III-84, 1 ♀ (Leg. Asanza) (QCAZ); Yasuni Puce 400m 11/23-IX-95, 1 ♂ (Leg. Baquero, Maza) (QCAZ); Yasuni 15-XI-96, 4 ♂♂ (Leg. Onore) (QCAZ); Yasuni Puce 400m 27-XI-95, 1 ♂ (Leg. Tapia) (QCAZ); Yasuni 250m 16-XI-96, 1 ♂ (Leg. Paucar) (QCAZ); Yasuni 250m 2-VI-97, 6 ♂♂ (Leg. Onore) (QCAZ); Yasuni 1-IV-97, 2 ♂♂ (Leg. Onore) (QCAZ); Yasuni 250m 10-XI-96, 1 ♂ (Leg. Torres) (QCAZ); Yasuni 250m 30-I-97, 1 ♂ (Leg. Andrade) (QCAZ); Yasuni 250m 6-II-97, 1 ♂ (Leg. Cisneros) (QCAZ); Coca IX-86, 1 ♂ (Leg. Onore) (QCAZ); Coca XI-85, 1 ♂ (Leg. Martinèz) (QCAZ); Misahualli VIII-91, 1 ♂



Figs 12-17. Pronotum slender: **12** *A. armata* ♂; **13** *A. guianensis* ♂; **14** *A. peruviana* ♂; **15** *A. armata* ♀; **16** *A. guianensis* ♀; **17** *A. peruviana* ♀.

(Leg. Zapata) (QCAZ); Layo Aysio X-82, 1 ♂ (Leg. Garzòn) (QCAZ); Orellana 29-I-82, 1 ♂ (Leg. Sierra) (QCAZ); Sarayacu 20-VIII-80, 1 ♂ (Leg. Pumisacho) (QCAZ); C. Aoga 26-I-89, 1 ♂ (Leg. Sandoval) (QCAZ); Yuturi 25-II-90, 2 ♂♂ (Leg. Sandoval) (QCAZ); Baeza 1600m 15-V-97, 1 ♂ (Leg. Jasinski) (QCAZ).
ESMERALDAS: Quininde 560m Herrera Lay 8-III-97, 1 ♂ (Leg. Tapia) (QCAZ).
COTOPAXI: Sto Domingo XII-71, 1 ♂ (Leg. Venedict) (QCAZ).

Remarks.— These specimens agree exactly with the description of the holotype.

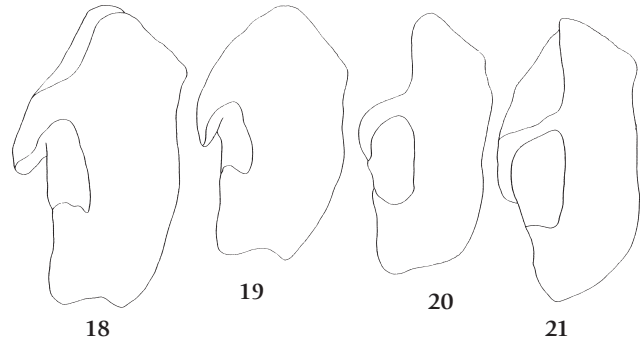
Distribution.— This species is distributed in Costa Rica, French Guyana, Venezuela, Panama. This is the first report for Ecuador.

Angela peruviana (Giglio-Tos, 1916)
(Figs 14, 17, 21, 25, 30)

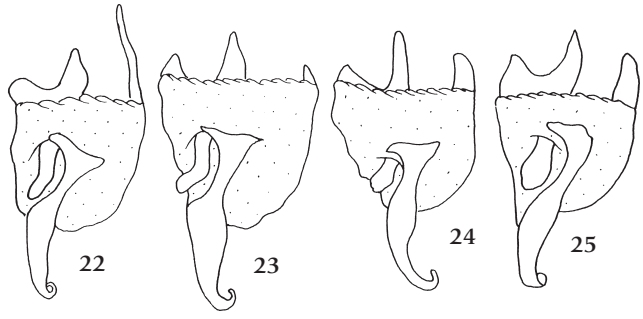
Material examined.— NAPO: Yasuni 2-Juni-1997, 1 ♂ (Leg. Onore) (QCAZ).
SUCUMBIOS: Tarapoa 2-XI-96, 1 ♀ (Leg. Zapata) (QCAZ).

Remarks.— Known previously only by a male specimen, the finding of specimens of both sexes enables us to complete the description of the species.

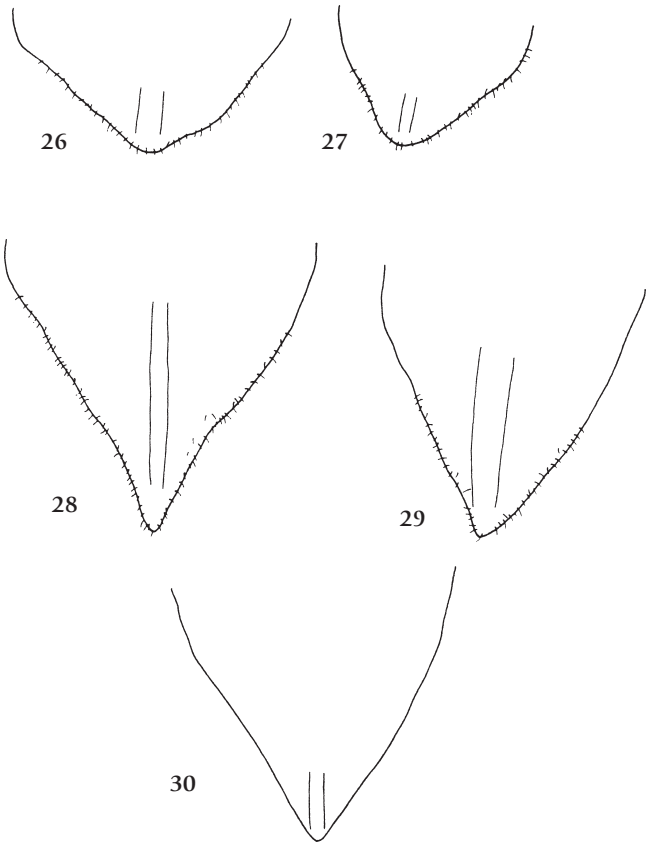
Description.—**Male.** Head: head 0.42 times as wide as metazona of the pronotum; eyes large, globose; antennae long and slender, with dark brown scape and flagellum; vertex straight; frontal shield transverse, pentagonal; upper margins sinuous.
Thorax: pronotum brown (Fig. 14), slender, about 11 times as long as pronotal supracoxal dilatation; lateral margins finely denticulated on prozona; smooth on metazona; supracoxal dilatation distinct with rounded lateral margins. Anterior legs slender; coxae brown, 0.56 times as long as metazona, anterior margins with about 9 small brown spines; apical lobes divergent with the external one larger and with denticulated margin; femora 0.74 times as long as metazona and 13.5 times as long as its maximum width, with 3 discoidal spines, the third one longer; tibiae with 15 external spines. Tegmina 5.83 times as long as its maximum width, hyaline with short brown bands on principal nervatures; oval and subrounded apex; metathoracic wings hyaline with shiny violaceus apical area with irregular yellow bands.
Abdomen: dark, cylindrical, distal margin of urotergites with small median tooth, supra-anal plate triangular with small apical tooth. Subgenital plate with 2 small styles.
Male genitalia: ventral phallomere (Fig. 21) longer than wide, without distal process; anterior process very devel-



Figs 18-21. Ventral phallomere: **18, 19** *A. armata*; **20** *A. guianensis*; **21** *A. peruviana*.



Figs 22-25. Left phallomere: **22, 23** *A. armata*; **24** *A. guianensis*; **25** *A. peruviana*.



Figs 26-30. Supra-anal plate: **26** *A. armata* ♂; **27** *A. guianensis* ♂; **28** *A. armata* ♀; **29** *A. guianensis* ♀; **30** *A. peruviana* ♀.

oped; left phallomere not well developed, phalloid apophysis (Fig. 25) long with enlarged apex.

Description.—**Female**. Similar to male but more robust.
Head: 0.18 times as wide as metazona length, with globose large eyes; frontal shield transverse.
Thorax*:* pronotum (Fig. 17) similar to male. Anterior legs slender, similar to male. Tegmina chestnut 3.3 times as long as maximum width, rounded apex; stigma distinct. Wings not reaching the distal margin of second urotergite. Metathoracic wings with chestnut costal area, discoidal area violaceus shiny with 3 irregular yellow spots.
Abdomen*:* Similar to male.

Distribution.— The species was known only from the Peruvian region; this is the first report of it in Ecuador.

Musonia surinama (Saussure, 1869)

Reference.— Hebard, 1924, Milagro, Guayas.

Material examined.— BOLIVAR: Caluma 31-III-88, 1 ♂ (QCAZ).
ESMERALDAS: Tachina 5-IV-93, 1 ♂ (Leg. Suãret) (QCAZ).
MANABI: Pto Diejo 6-XII-85, 1 ♂ (Leg. Bravo) (QCAZ); Cabo Pasado 2-VIII-96, 1 ♂ (Leg. Ayala) (QCAZ); Pto Cayo 9-IV-97, 1 ♂ (Leg. Onore) (QCAZ).
LOJA: La Toma 29-V-83, 1 ♂ (Leg. Onore) (QCAZ).

Distribution.— Nicaragua, Panama, Suriname, Trinidad, Tobango, Colombia, Ecuador.

Macromusonia conspersa (Saussure, 1870)

Reference.— Giglio-Tos, 1898, Gualaquiza and Santiago Valley.

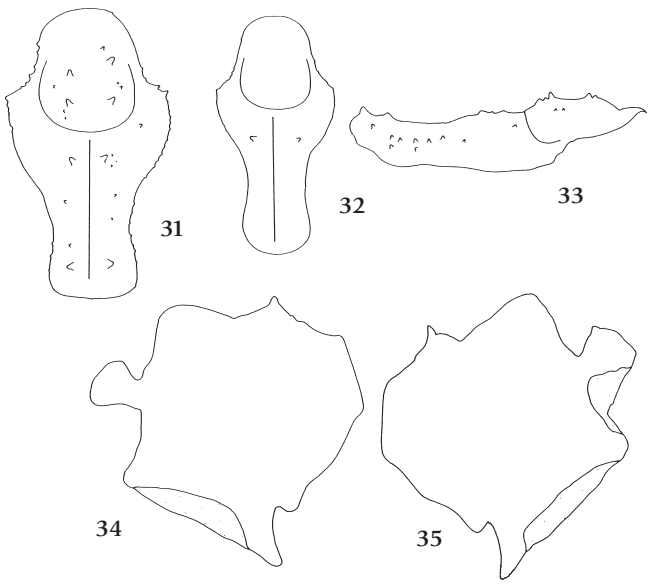
Material examined.— PASTAZA: Puyo 13-V-95, 1 ♂ (Leg. Yuniseva) (QCAZ).
NAPO: Yasuni 18-III-97, 2 ♂♂ (Leg. Onore) (QCAZ).
ZAMORA: Rio Nangaritza 12-IV-97, 1♀ (Leg. Tirira) (QCAZ).
SUCUMBIOS: Rio Zàbalo 8/18-II-1997, 1 ♀ (Leg. P. Salvador) (QCAZ).

Distribution.— French Guyana, Brazil (AM), Ecuador, Peru.

Calopteromantis hebardi Terra, 1982

Reference.— Terra, 1982, Cerro Bulan; Lombardo & Ayala, 1999, Santiago Valley and Loja.

Material examined.— LOJA: Saraguro 3100m 27-IV-97, 1 ♀; Saraguro 3100m 22-IV-97, 1 ♀; Saraguro 3110m 25-IV-97, 1 ♀; Saraguro 3100m 26-V-97, 1 ♀; Saraguro 3100m 20-III-97, 2 ♀♀; Saraguro Cordillera Cordonellio 3130m 27-XI-87, 1 ♀ (Leg. D. Rawlins) (QCAZ); Saraguro 3100m 2-I-97, 1 ♂ + 1 ♀ (Leg. Lombardo) (Coll. Lombardo); Saraguro



Figs 31-35. *Pseudomiopteryx festae*: **31, 33** Pronotum of ♀; **32** Pronotum of ♂; **34, 35** Ventral phallomere.

3100m 1-I-97, 1 ♂ (Leg. Onore) (QCAZ); Saraguro 3100m 29-V-97, 1 ♂ (Leg. Onore) (QCAZ); Saraguro Villonaco 300m 10-VIII-91, 2 ♂♂ (Leg. Onore) (QCAZ).

Distribution.— Ecuador.

Pseudomiopteryx festae (Giglio-Tos, 1898)
(Figs 31, 32, 33, 34, 35)

Reference.— Giglio-Tos, 1898, Santiago Valley.

Material examined.— MORONA SANTIAGO: Macas 6-IV-87, 1 ♀ (Leg. Onore) (QCAZ).
ESMERALDAS: Los Lagunalay Este de El Mirador XI-93, 1 ♀ (Leg. Coloma) (QCAZ).
SUCUMBIOS: Rio Zàbalo 8/18-II-97, 1 ♂ (Leg. Salvador) (QCAZ).
ZAMORA: Rio Nangaritza 12-IV-97, 1 ♂ (Leg. Tirira) (QCAZ).
NAPO: Yasuni Puce 11/23-IX-95, 1 ♀ (Leg. Baquero, Maza) (QCAZ); Yuturi 27-II-90, 1 ♀ (Leg. Sandoval) (QCAZ); Cascada San Rafael II-V-86, 1 ♂ (Leg. Paz) (QCAZ); Coca VII-84, 2 ♂♂ (Leg. Onore) (QCAZ); Tena VIII-86, 1 ♂ (Leg. Onore) (QCAZ); Yasuni Rio Tiputini San Francisco 16-VI-96, 1 ♂ (Leg. Cuesta) (QCAZ); Tena 24-VI-96, 1 ♂ (Leg. Chavez) (QCAZ); Yasuni, 6-II-97, 1 ♀ (Leg. Cisneros) (QCAZ).

Remarks.— This species was incompletely described by Giglio-Tos, therefore it is opportune to furnish a brief description of both sexes.

Description.— **Male.** Short in size (body length 2.5 cm) dark brown in color.
Head: 1.40 times as wide as pronotal supracoxal dilatation; eyes large and globose; frontal shield pentagonal, upper angle acute; antennae long and slender with short hairs. Median ocellus with short acuminate process.
Thorax: pronotum (Fig. 32) 1.87 times as long as pronotal supracoxal dilatation; prozona with finely denticulated lateral margins, dorsal surface with 2 pairs of conical tubercules; metazona with smooth lateral margins, dorsal surface with median carina and a pair of tubercles. Anterior coxae 1.68 times as long as pronotal supracoxal dilatation, triangular with prismatic section; distal lobes convergent, with external one larger. Anterior femora slender, 2.14 times as wide as pronotal supracoxal dilatation and 3.7 times its maximum width; 4 external spines, 11 internal spines, all brown with black apex; anterior tibiae 1.5 times as long as supracoxal dilatation, external surface brown with 3 dark parallel bands; 8 external spines, 10-11 internal spines, all brown with black apex; wings well developed, exceeding apex of abdomen. Tegmina 3.06 times its maximum width, distal margins with short hairs.
Abdomen: abdomen dark; supra-anal plate longer than wide, triangular with median carina and acute apex; cerci with 10 articles with short setula. Subgenital plate quadrangular with 2 short styles.
Male genitalia: ventral phallomere (Figs 34, 35) quadrangular, well sclerified, distal process short and robust; phalloid apophysis well developed with recurved posterior branch.

Description.—**Female.** Similar to male, but distinctly more robust and apterous.
Head: about 1.19 times as wide as pronotal supracoxal dilatation; frontal shield transverse, similar to male, medium ocellus with a small acute process.
Thorax: pronotum (Figs 31, 33) 1.76 times as long as supracoxal dilatation; dorsal surface with numerous large tubercles. Lateral margins with black teeth. Anterior coxae 1.47 times as long as supracoxal dilatation; distal lobes contiguous, with external one larger and having an acute apex. Anterior femora 1.84 times as long as supracoxal dilatation; 4 external spines, 10 internal spines, all dark; external surface with 8 alligned black median granules; internal surface with large dark spot. Anterior tibiae 3.20 times supracoxal dilatation; 9 external spines, 8 internal spines, all dark.
Abdomen: cylindrical, urotergites with median carina; supra-anal plate triangular, longer than wide with median carina; cerci similar to male.

Distribution.— Ecuador.

Gen. ***Thesprotiella*** Giglio-Tos, 1915

In Ecuador there are 3 known species : *T. festae* Giglio-Tos, *T. similis* Giglio-Tos and *T. fronticornis* Chopard. They are known from only a few specimens, some only by one sex, and the older species definitions lack detail. The descriptions are very similar and do not furnish any striking features that cannot be attributed to intraspecific variability. In fact, Giglio-Tos distinguished his species on the basis of the opacity or transparency of the costal field of the tegmina, while Chopard, in distinguishing his species, used the different shape of the internal spines of the anterior tibiae. We have compared eight specimens (3 ♂♂, 5 ♀♀), all from the same locality or adjacent areas, with the holotypes of *T. festae* and *T. similis* and except for the feature of the costal field they do not show any further differences in both sexes. There are not sufficient reasons to maintain the two Giglio-Tos species separately. Thus, *T. similis* is a junior subjective synonym of *T. festae*. For *T. fronticornis*, because we have as yet no sound arguments, we consider it a valid species.

Thesprotiella festae (Giglio-Tos, 1898)
(Figs 36-45)

Thesprotiella similis Giglio-Tos, 1915 **syn. nov**.

Reference.— Giglio-Tos, 1898, Gualaquiza, Santiago Valley; Giglio-Tos, 1915, Ecuador.

Material examined.— COTOPAXI: Las Pampas 20-III-97, 1 ♂ and 3 ♀♀ (Leg. Ayala) (QCAZ); Las Pampas 6-III-97, 1 ♂ and 1 ♀ (Leg. Ayala) (QCAZ); Otonga 30-II-95, 1 ♀ (Leg. Tapia) (QCAZ).

PICHINCHA: La Forida X-81, 1 ♂ (Leg. Coloma) (QCAZ); Minda Santiago Espinosa (Leg. Onore) (QCAZ) 8-VII-95, 1 ♀.

Distribution.— Ecuador.

Trinaconyx fumosus Saussure & Zhentner, 1894

Material examined.— PICHINCHA: Alluriquin III-83, 2 ♂♂ (Leg. Coloma) (QCAZ); Tandapi 21-XII-84, 1 ♂ (Leg. Galeaza) (QCAZ); Pto Quito 9-VI-85, 1 ♂ (Leg. Sanchio) (QCAZ); Vicente Maldonado 25-VI-96, 1 ♀ (leg. Olen) (QCAZ); Los Bancos 12-91, 1 ♂ (Leg. Aviles) (QCAZ).
ESMERALDAS: Mayronga 15-II-93, 1 ♂ (Leg. Onore) (QCAZ); Mayronga 7-XII-93, 1 ♂ (Leg. Onore) (QCAZ); Mayronga 25-X-93, 1 ♂ (Leg. Onore) (QCAZ).

Distribution.— Costa Rica, Panama, Brazil (AP), Ecuador, Bolivia.

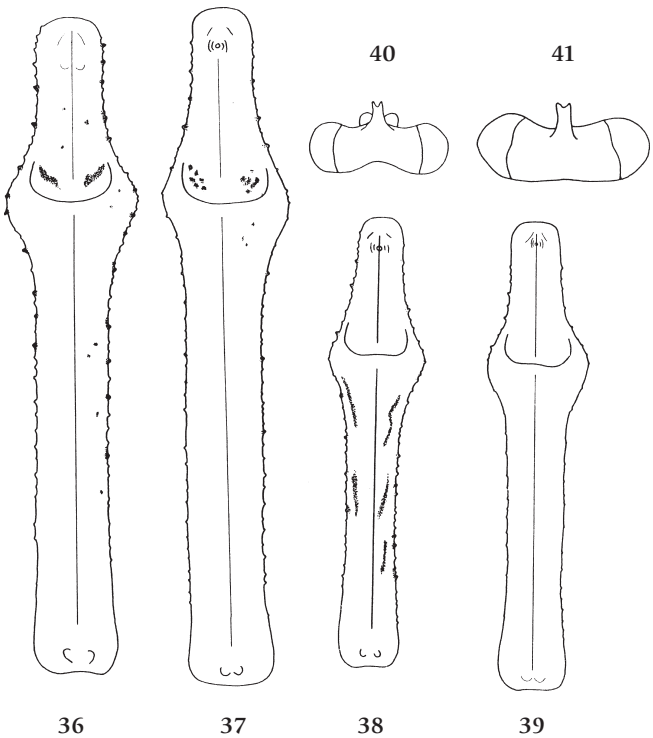
Pseudomusonia lineativentris (Stål, 1877)

Material examined.— ESMERALDAS: Mayronga 100m 15-IX-93, 1 ♂ (Leg. Onore) (QCAZ).

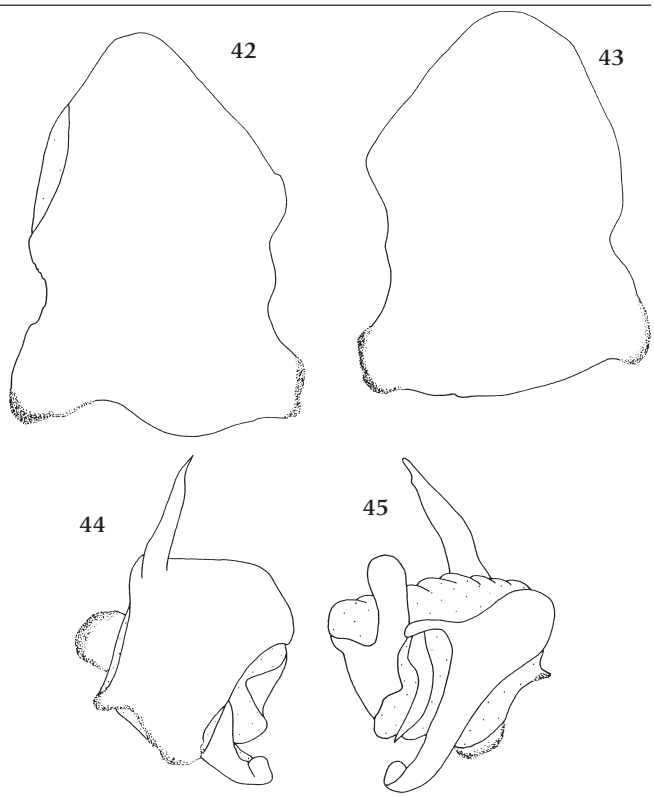
Distribution.— Panama, Colombia, Ecuador.

Bantia fusca Chopard, 1912.

Material examined.— NAPO: Via Hollin Loreto 1100m 6-XII-87, 1 ♂ (Leg. Oclo, Torre) (QCAZ).



Figs 36-41. *Thesprotiella festae*: **36, 37** Pronotum of ♀; **38, 39** Pronotum of ♂; **40, 41** Head of ♂.



Figs 42-45. *Thesprotiella festae*: **42, 43** Ventral phallomere; **44, 45** Left phallomere.

Distribution.— French Guyana, Ecuador.

Liturgusa cayennensis Saussure, 1869.

Reference.— Hebard, 1924, Pasaje El Oro.

Material examined.— COTOPAXI: Sto Domingo de los Colorados 16-X-77, 2 ♀♀ (Leg. Morante) (QCAZ).

Distribution.— Mexico, Guatemala, Panama, Brazil, Ecuador.

Liturgusa maya Saussure & Zehentner, 1894.

Material examined.— NAPO: Misahualli 28-VI-94, 1 ♀ (Leg. Bueno) (QCAZ); Tena 3-XI-79, 1 ♀ (Leg. Caruajal) (QCAZ); Cotococha 850m 15-IV-95, 1 ♂ (Leg. Cisneros) (QCAZ); Coca, Primavera 270m 28-XII-96, 1 ♂ (Leg. Muñoz) (QCAZ).
ESMERALDAS: Atacames El Playen 100m 17-VII-96, 1 ♂ (Leg. Delgado) (QCAZ); Borbon Los Pinos 20-VI-96, 1 ♀ (Leg. Tirira) (QCAZ).
SUCUMBIOS: Cuyabeno 20-IX-96, 1 ♂ (Leg. Espinosa) (QCAZ); San Pablo De Kantesya 14-XI-96, 2 ♀♀ (Leg. Nischk) (QCAZ).
COTOPAXI: Las Pampas 25-III-97, 1 ♀ (Leg. Onore) (QCAZ).
MANABI: El Carmen 250m 6-I-95, 1 ♂ (Leg. Guarderas) (QCAZ); El Carmen 250m 7-I-95, 1 ♀ (Leg. Ordoñez) (QCAZ).

Distribution.— Mexico, Guatemala, Brazil (PA), Ecuador.

Liturgusa peruviana Giglio-Tos, 1915.

(This species is synonym of *L. nubeculosa*)

Material examined.— NAPO: Jatun Sunka VIII-94, 1 ♂ (Leg. Ohaio Univ.); Archidona, Santa Rita 800m 27-IV-96, 1 ♂ (Leg. Merino) (QCAZ).
PASTAZA: Puyo 12-VII-85, 1 ♂ (Leg. Lilian Real) (QCAZ).
SUCUMBIOS: Cuyabeno 220m 20-IX-96, 1 ♀ (Leg. Espinosa) (QCAZ).

Distribution.— Ecuador, Peru.

Macromantis hyalina (Degeer, 1773).

Material examined.— NAPO: Yasuni Puce 400m 11/23-X-95, 1 ♂ (Leg. Baquero, Maza) (QCAZ); Yasuni 250m 10-XI-96, 3 ♂♂; 18-II-96, 1 ♂; 2-IV-96, 3 ♂♂ ; 1-IV-97, 1 ♂ (Leg. Onore) (QCAZ); Yasuni 20-IV-97, 1 ♂ (Leg. Baus) (QCAZ).
SUCUMBIOS: Tiputini II-96, 9 ♂♂ (Leg. Lombardo) (Coll. Lombardo); San Pablo de Kantesya Rio Aguharo 25-V-92, 1 ♂ (Leg. Frommer) (QCAZ).

Distribution.— Nicaragua, Costa Rica, Surinam, Colombia, Brazil, Guyana, Ecuador, Peru.

Metriomantis occidentalis Lombardo, 1999a
(Figs 46-48)

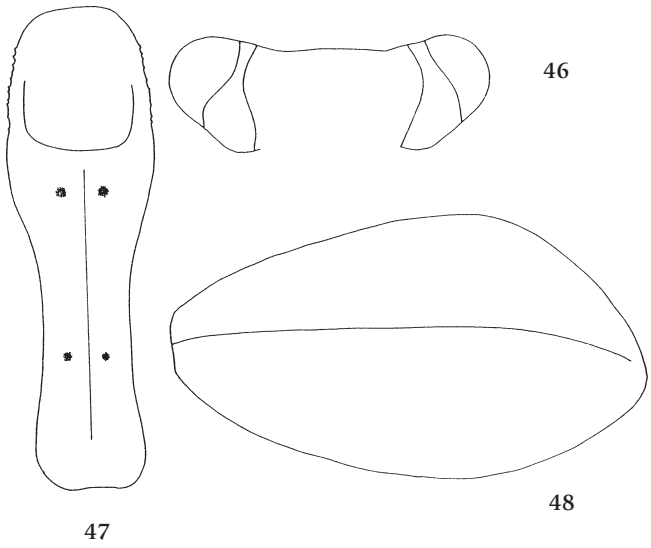
The genus *Metriomantis* is a synonym of *Photina* Terra, 1995: 74.

Material examined.— NAPO: Puerto Napo, Ahuano 450m, 16.VIII/ 06.IX. 1991 (Amedegnato / Poulaini) (MNHN).

Remarks.— The female specimen described below comes from the same locality as the holotype male of *M. occidentalis*, and was compared with type material. While it shows no conflicting differences with the male type, there are notable departures from the female type in, above all, the shape of the pronotum and tegmina.

In the light of this comparison we believe that the true female of *M. occidentalis* is this female specimen from Ecuador, while it will be necessary to institute for the specimen from Colombia a new species name.

Description.—**Female.**
Head: (Fig. 46) about 1.78 times as wide as frontal supracoxal dilatation, eyes oval, vertex moderately arcuate and higher than an imaginary line joining the eyes; frontal shield transverse pentagonal with obtuse upper angle; antennae long with green scape and dark flagellum.
Thorax: pronotum (Fig. 47) slender, 5.56 times as long as its maximum width, lateral margins finely denticulate; supracoxal dilatation not well developed, metazona with delicate median carina. Anterior coxae 2.34 times as long as pronotal supracoxal dilatation; lateral margins spinulate,



Figs 46-48. *Metriomantis occidentalis*: **46** Head; **47** Pronotum; **48** Mesothoracic wing (tegmen).

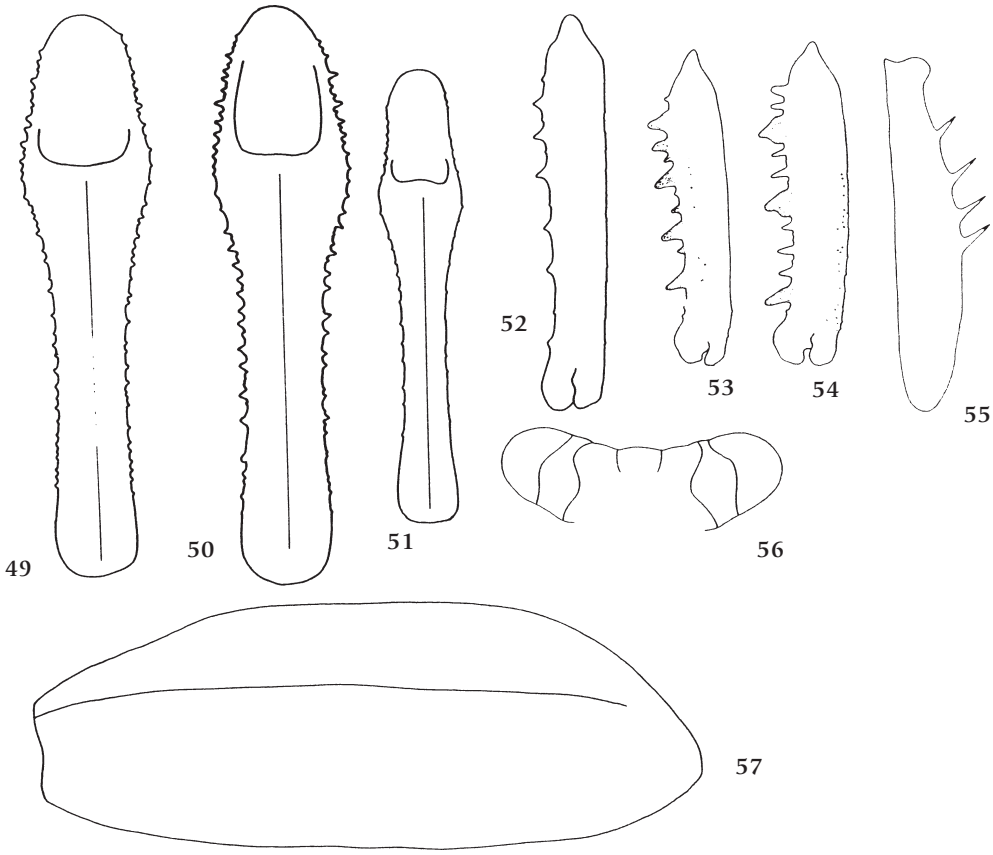
distal lobes divergent, the external one larger, apex acute. Anterior femora 4.3 times as long as its width and 2.95 times as long as pronotal supracoxal dilatation; 6 external spines all ochraceous with black apex, 14 internal spines with the largest one black; upper margins moderately arcuate and with minute spines. Anterior tibiae 2.43 times as long as pronotal supracoxal dilatation; 14-16 external spines, 16 internal spines all ochraceous with black apex; anterior surface with longitudinal dark line; anterior metatarsi with black internal surface. Posterior legs long and slender, green-ochraceous, femora with small black spines; posterior metatarsus longer than combined total length of other segments. Wings not reaching abdominal apex; Tegmina (Fig. 48) green, 1.72 times as long as their maximum width, oval, with subrounded apex; costal area opaque about as large as discoidal area; metathoracic wings as long as tegmina, transparent with narrow yellow bands on secondary nervatures. Abdomen: ochraceous, very enlarged; supra-anal plate triangular with rounded apex; cerci with short hairs.

Distribution.— Ecuador.

Stagmomantis theophila Rehn, 1904.
(Figs 49-62)

Reference.— Rio Lita (VI. 1904), Paramba (Imbabura), Duran, Bucay (Guyas).

Material examined.— PICHINCHA: Tandapi 7-III-92, 1 ♀ (Leg. Marin) (QCAZ); Sto Domingo 5-IV-97, 1 ♀ (Leg. Neira) (QCAZ); Sto Domingo 25-III-97, 1 ♀ (Leg. Neira) (QCAZ); Sto Domingo VI-72, 1 ♀ (Leg. Wenedictioff) (QCAZ); Mindo 1400m 19-VIII-96, 1 ♀ (Leg. Chaves) (QCAZ).
COTOPAXI: Las Pampas V-86, 1 ♀ (Leg. Onore) (QCAZ); Las Pampas 5-III-97, 1 ♀ (Leg. Ayala) (QCAZ); Rio Silanche 760m 1-V-95, 2 ♂♂ (Leg. Sancho) (QCAZ); Guabal 200m



Figs 49-57. *Stagmomantis theophila*: **49, 50** Pronotum of ♀; **51** Pronotum of ♂; **52** Anterior coxa of ♂; **53, 54** Anterior coxae of ♀; **55** Anterior femora of ♂; **56** Head of ♀; **57** Mesothoracic wing (tegmen) of ♀.

15-XI-94, 1 ♂ (Leg. Morales) (QCAZ); Sto Domingo 500m 17-VI-95, 1 ♂ (Leg. Marchian) (QCAZ); Sto Domingo V-72, 1 ♂ (Leg. Venedict) (QCAZ); Sto Domingo I-88, 1 ♂ (Leg.Hernandez) (QCAZ); Sto Domingo V-85, 1 ♂ (Leg. Cuesta) (QCAZ); Pto Quito 28-VI-84, 1 ♂ (Leg. Adredabbo) (QCAZ); Pto Quito XII-82, 1 ♂ (Leg. Matinez) (QCAZ); Aliuroni 14-I-82, 1 ♂ (Leg. Almiras) (QCAZ); Sdol 800m 27-XII-89, 1 ♂ (Leg. Parmiñu) (QCAZ); Golf Pi Tindalia Bei Sto Domingo 700m 16/19-VI-77, 1 ♂ (Leg. Schacht) (QCAZ); Alluriquin 25-XII-95, 1 ♂ (Leg. Onore) (QCAZ).

LOS RIOS: Rio Palenque IV-83, 1 ♀ (Leg. Coloma) (QCAZ).

BOLIVAR: Balzapamba 4-VIII-88, 1 ♀ (Leg. Aldas) (QCAZ). (QCAZ)

ESMERALDAS: Guininde XII-91, 1 ♂ (Leg. Silva) (QCAZ); La Bonita San Lorenzo 9-VI-85, 1 ♂ (Leg. Casres); Atacames El Playon 17-VII-96, 1 ♂ (Leg. Delgado) (QCAZ); Uzhcurrumi 7-IV-95, 2 ♂♂ (Leg. Piñas) (QCAZ); Maldonado 760m 30-V-95, 1 ♂ (Leg. Capio) (QCAZ);

LOS RIOS: Quevedo X-83, 1 ♂ (Leg. Garcia) (QCAZ); Rio Palenque II-89, 1 ♂ (Leg. Dodson) (QCAZ).

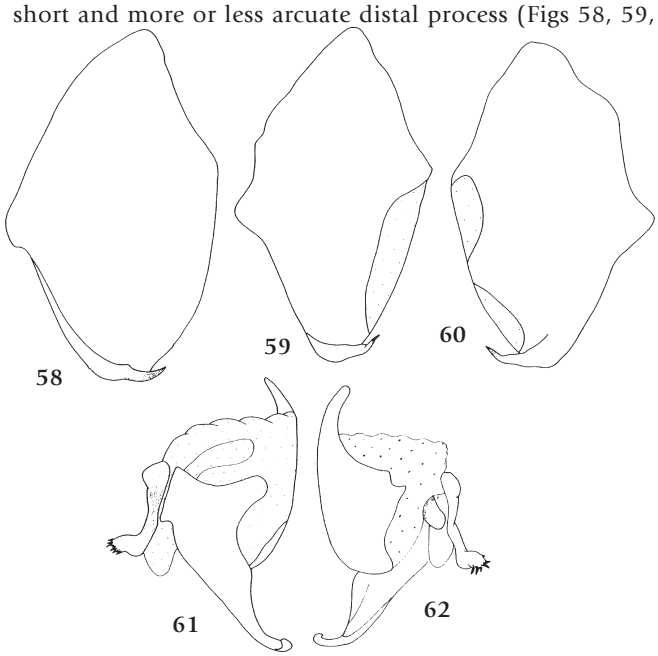
COTOPAXI: La Mana Gusanga 500m IV-95, 1 ♂ (Leg. Abarragan) (QCAZ).

NAPO: Via Hollin Loreto Rio Guataracu 18-II-95, 1 ♂ (Leg. Campo) (QCAZ).

TUNGURAHUA Aurhaua: Rio Topo XII-71, 1 ♂ (Leg. Venedict).

Remarks.— This species, widely distributed in Central South-western America, is easily distinguishable due to the pronotum of both sexes having robust spines and the anterior coxae of females having very big tubercles.

Male genitalia: ventral phallomere longer than wide with a short and more or less arcuate distal process (Figs 58, 59,



Figs 58-62. *Stagmomantis theophila:* **58-60** Ventral phallomere; **61, 62** Left phallomere.

60). Left phallomere with very well developed phalloid apophysis (Figs 61, 62).
Distribution.— Nicaragua, Costa Rica, Panama, Colombia, Ecuador.

Stagmatoptera flavipennis (Serville, 1839).

Material examined.— SUCUMBIOS: Tiputini II-96, 14 ♂♂ (Leg Lombardo).
PASTAZA: Montalvo: 1983, 1 ♂ (Leg. Coloma); Lorachachi 220m 16/27-II-96, 2 ♂♂ (Leg. Caprio) (QCAZ).
PICHINCHA: Sto Domingo XI-72, 1 ♂ (Leg. Venedict) (QCAZ).
IMBABURA: Chota 25-I-92, 1 ♂ (Leg. Rodriguez) (QCAZ).
NAPO: Yasuni 250m 2-II-97, 5 ♂♂ (Leg. Onore) (QCAZ); Yasuni 1-IV-96, 6 ♂♂ (Leg. Onore) (QCAZ); Yasuni 15-XI-96, 12 ♂♂ (Leg. Onore) (QCAZ); Yasuni Puce 400m 11/23-IX-95, 10 ♂♂ (Leg. Baquero, Maza) (QCAZ); Yasuni Puce 400m 10/16-IX-96, 3 ♂♂ (Leg. Torres) (QCAZ); Yasuni 250m 30-I-97, 2 ♂♂ (Leg. Andrade) (QCAZ); Yasuni 250m 6-II-97, 2 ♂♂ (Leg. Cisneros) (QCAZ).

Distribution.— French Guyana, Brazil (AM, RS), Ecuador.

Parastagmatoptera flavoguttata (Serville, 1839)

Reference.— Hacienda Roma (Guayas).

Material examined.— NAPO: Coca V-85, 2 ♂♂ (Leg. Onore) (QCAZ); Yasuni Puce 400m 11/23-IX-95, 5 ♂♂ and 5 ♀♀ (Leg. Baquero, Maza) (QCAZ); Yasuni 15-XI-96, 10 ♂♂ (Leg. Onore) (QCAZ); Yasuni 250m 16-XI-96, 3 ♂♂ (Leg. Paucar) (QCAZ); Yasuni Puce 400m 18-VII-95, 1 ♂ (Leg. Ayala) (QCAZ); Olpump Lumbaqui 900m 8-VI-77, 1 ♂ (Leg. Schacht) (QCAZ); Yasuni 250m 10/16-XI-96, 1 ♂ and 1 ♀ (Leg. Torres) (QCAZ); Yasuni 18-II-97, 1 ♂ (Leg. Itapia) (QCAZ); Yasuni 250m 2-II-97, 28 ♂♂ (Leg. Onore) (QCAZ); Yasuni 11-III-97, 1 ♂ (Leg. Mancero) (QCAZ); Yasuni 250m 1-IV-97, 2 ♂♂ (Leg. Onore) (QCAZ); Yasuni 18-II-97, 1 ♂ (Leg. Onore) (QCAZ); Yasuni 6-II-97, 1 ♂ and 1 ♀ (Leg. Cisneros) (QCAZ).

Distribution.— French Guyana, Colombia, Ecuador.

Phyllovates cingulata (Drury, 1773)

Material examined.— PICHINCHA: Pto Quito m 103, 4.XII.82, 1 ♂ (leg. P. Casares) (QCAZ); via Choha Km 26, 5.VI.92, 1 ♂ (Leg. J. C. Arajuco) (QCAZ).
MANABI: Porto Lopez 20.XI.1993, 4 ♀♀ (leg. L. Bartolozzi) (QCAZ).
ESMERALDAS: (Cupa), V.85 1 ♀ (Leg. V. Mera) (QCAZ) (ex Paso China).

Distribution.— Mexico, Cuba, Haiti, French Guyana, Brazil (PA), Colombia, Ecuador.

Phyllovates brevicornis (Stål, 1877).

Material examined.— NAPO: SC Station Yasuni Puce 400 m 11-23-9-1995, 9 ♂♂ . (Leg. E. Bequero, F. Maza) (QCAZ); Archidona, 12-1982, 1 ♂ (Leg. M. Garcia) (QCAZ); Coca, V-1985, 1 ♂ (Leg. G. Onore) (QCAZ).
IMBABURA Ambuqui, 4-1994 1 ♀ (Leg. G. Onore) (QCAZ).

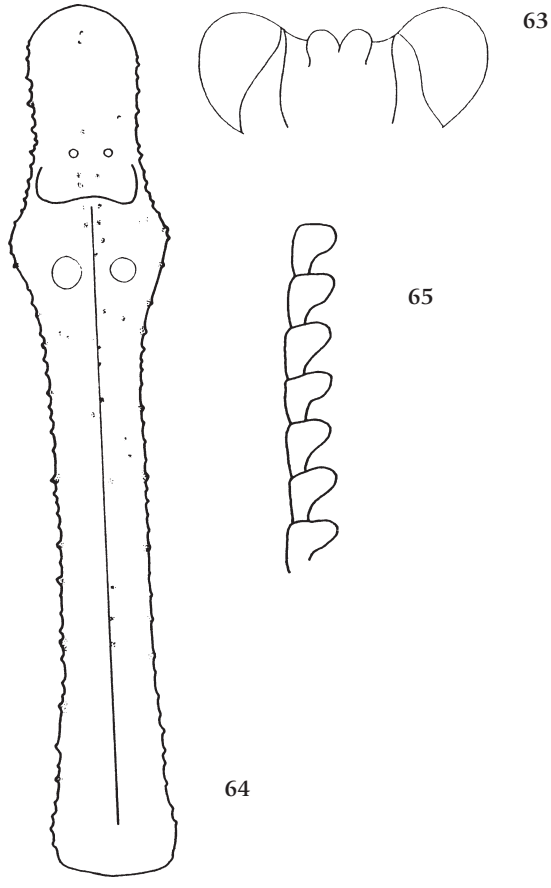
Distribution.— Brazil, Colombia, Ecuador.

Heterovates pardalina Saussure, 1872a
(Figs 63-69)

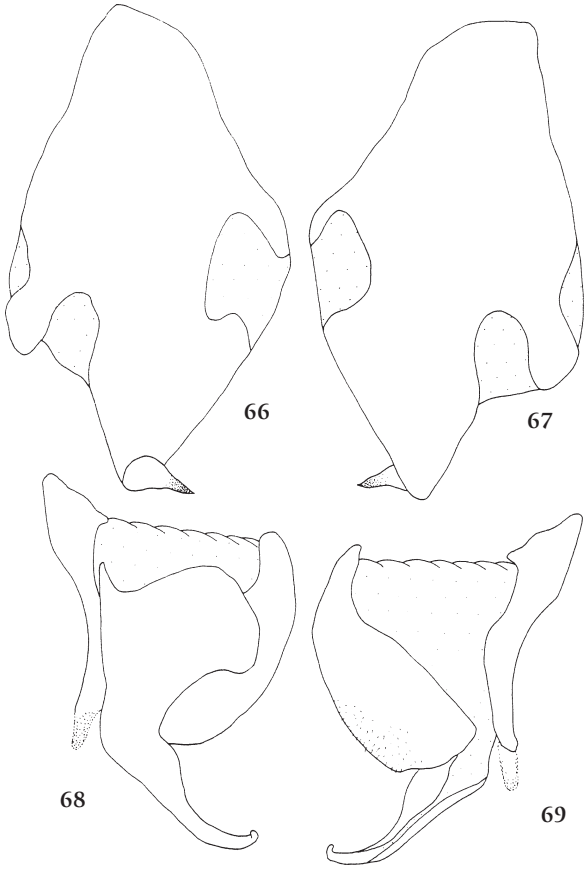
Material examined.— NAPO: Yasuni 250m 2-VI-97, 1 ♂ (Leg. Onore) (QCAZ).

Remarks.— This species was known previously only by the description of the type from Brazil. It has been insufficiently described by the author and it is now possible to give a brief description.

Description.— **Male.**
Head: (Fig. 63) about 1.47 times as wide as frontal pronotal supracoxal dilatation. Eyes large globose; upper margin of vertex arcuate, lower than an imaginary line joining the eyes; antennae (Fig. 65) long with dark scape and flagellum; frontal shield transverse, ivory with 2 rounded black spots;



Figs 63-65. *Heterovates pardalina*: **63** Head; **64** Pronotum; **65** Antenna.



Figs 66-69. *Heterovates pardalina*: **66, 67** Ventral phallomere; **68,69** Left phallomere.

maxillary and labial palpi with black internal surface.
Thorax: pronotum (Fig. 64) brown with minute black granules, slender 6.4 times as long as its minimum width, lateral margins with large black teeth; prozona short, dorsal surface with median carina and a pair of large tubercules above supracoxal sulcus. Anterior legs slender, brown with small black spots; coxae 3.42 times as long as pronotal supracoxal dilatation, internal surface ochraceous with black distal band; distal lobes contiguous; external margins with 17 small black spines. Femora 0.86 times as long as its maximum width; external surface with black minute granules; internal surface ochraceous with 2 large black bands; 4 external spines ochraceous, with black apex; 15 internal spines. Tibiae with 18 internal spines and 14 external spines, all ochraceous with black apex. Middle and hind legs slender with short distal lobe; posterior metatarsi as long as all the other articles together. Wings hyaline, extending well beyond apex of abdomen.
Abdomen: cylindrical, ochraceous; cerci with 11 articles; supra-anal plate, short, triangular with rounded apex. Subgenital plate large. Male genitalia: ventral phallomere (Figs 66, 67) longer than wide, distal process very well developed, with increased base and acuminate apex. Phalloid apophysis (Figs 68, 69) well developed with 2 branches, one anterior and one posterior.

Distribution.— Brazil and Ecuador.

Gen. ***Vates*** Burmeister, 1838

This genus is represented by numerous species throughout Central and South America; in Ecuador there are four known species *V. pectinicornis*, *V. festae*, *V. biplagiata* and *V. weyrauchi*; the males are distinguished by the following keys.

Key to males

1. Ocelli process divergent to apex only; middle and hind femora with 2 distal dorsal lobes not well developed; antennae sigmoid 2
—Ocelli process divergent from base; middle and hind femora with distal dorsal lobes well developed; comb-like antennae 3

2. Lateral margins of pronotum with large teeth ..... *V. biplagiata*
— Lateral margins with weakly developed teeth ..... *V. pectinicornis*

3. Articles of antennae with a short tooth; pronotum denticulate ..... *V. festae.*
—Articles of antennae with big tooth; pronotum with minute teeth ..... *V. weyrauchi*

Vates pectinicornis (Stål, 1877)

Material examined.— NAPO: Yasuni 15/11/96, 6 ♂♂ (Leg. G. Onore) (QCAZ); 2/6/97, 3 ♂♂ (Leg. G. Onore) (QCAZ); 16/11/96, 1 ♂ (Leg. M. Torres) (QCAZ); 16/11/96, 1 ♂ (Leg. A. Paucar) (QCAZ); Yasuni Puce 23/9/95, 2 ♂♂ (Leg. E. Baquero, F. Maza) (QCAZ). Los Olmeto 1/87, 1 ♂ (Leg. Onore) (QCAZ).

Distribution.— Costa Rica, Panama, Ecuador.

Vates festae Giglio-Tos, 1898

Reference.— Giglio-Tos 1898, Gualaquiza.

Material examined.— NAPO: El Reventador V-85, 1 ♂ (Leg. Onore) (QCAZ); Coca III-86, 1 ♂ (Leg. Onore) (QCAZ); El Sumbury la Bonyta II- 86, 1 ♂ (Leg. Lombardo) (Coll. Lombardo); El Reventador 3-XII-88, (Leg. Aldos) (QCAZ); Baeza Villas 15-V-97, 1 ♂ (Leg. Yasinski) (QCAZ).

Distribution.— Ecuador.

Vates biplagiata Sjösted, 1930

Material examined.— NAPO: Yasuni 15/16-XI-96, 11 ♂♂ (Leg. Onore) (QCAZ); Yasuni Puce 16-XI-96, 2 ♂♂ (Leg. Paucar) (QCAZ); Yasuni 2-VI-96, 7 ♂♂ & 1 ♀ (Leg. Onore) (QCAZ); Yasuni 16-XI-96, 2 ♂♂ (Leg. Torres) (QCAZ);

Yasuni 27-XI-96, 1 ♂ (Leg. Tapia) (QCAZ); Yasuni Puce 23-IX-95, 2 ♂♂ & 1 ♀ (Leg. Baquero, Maza) (QCAZ); Yasuni 1-IV-97, 1 ♂ & 1 ♀ (Leg. Onore) (QCAZ); Yasuni 17-XI-96, 1 ♂ (Leg. Prado) (QCAZ); Yasuni 15-XI-96, 1 ♂ (Leg. Oquendo) (QCAZ); Yasuni 7-II-97, 1 ♂ (Leg. Timpe) (QCAZ); Tend IV-83, 1 ♀ (Leg. Chiriboed) (QCAZ).
SUCUMBIOS: Lumbaqui 17-I-97, 1 ♂ (Leg. Woolfson) (QCZA).
PASTAZA: Via Caualos XI-95, 1 ♀ (Leg. Lombardo) (Coll. Lombardo).
ESMERALDAS: Quininde Herraralay 17-XI-96, 1 ♂ (Leg. Prado) (QCAZ).

Distribution.— Brazil, Colombia.

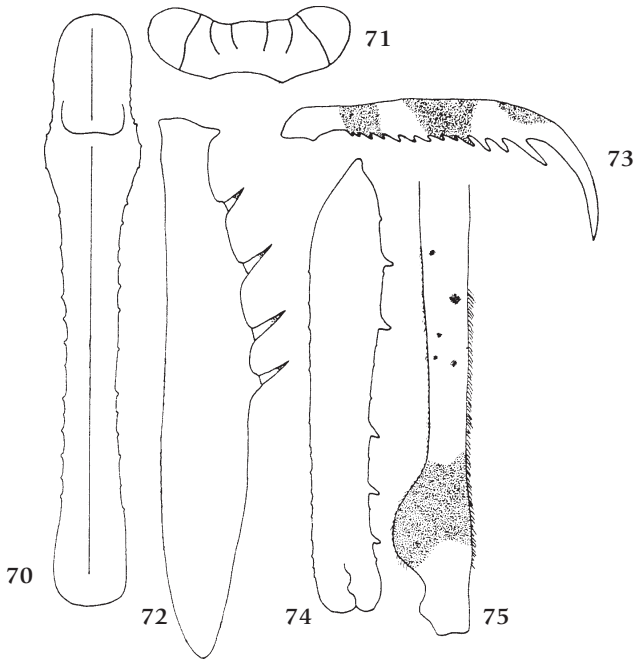
Vates weyrauchi (Beier, 1958)

Material examined.— PICHINCHA: La Florida de Alluriquin 1981, 1 ♀ (Leg. Coloma) (QCAZ); Sto Domingo IX-71, 1 ♂ (Leg. Wenedictioff) (QCAZ); Sto Domingo V-73, 1 ♂ (Leg. Venedict) (QCAZ); SDDC XI-87, 1 ♂ (LegJullos) (QCAZ).
ZAMORA: Judoza Cherr 1983, 1 ♀ (Leg. Maya) (QCAZ).
LOS RIOS: Miguel Angel Quevedo III-83, 1 ♀ (Leg. Castro) (QCAZ).
NAPO: Yasuni 6-II-97, 1 ♂ (Leg. Timpe) (QCAZ).

Distribution.— Peru, Ecuador.

Chopardiella poulaini n. sp.
(Figs 70-79)

Material examined.— Holotype ♂: Ecuador, Station Yasunì, Rios Tiputini (Napo) 5/15.2.1995 (Leg. S. Poulain) (MNHN). Paratypes: 3 ♂♂, Station Yasunì, 2-7-1997 (Leg. Onore) (QCAZ).

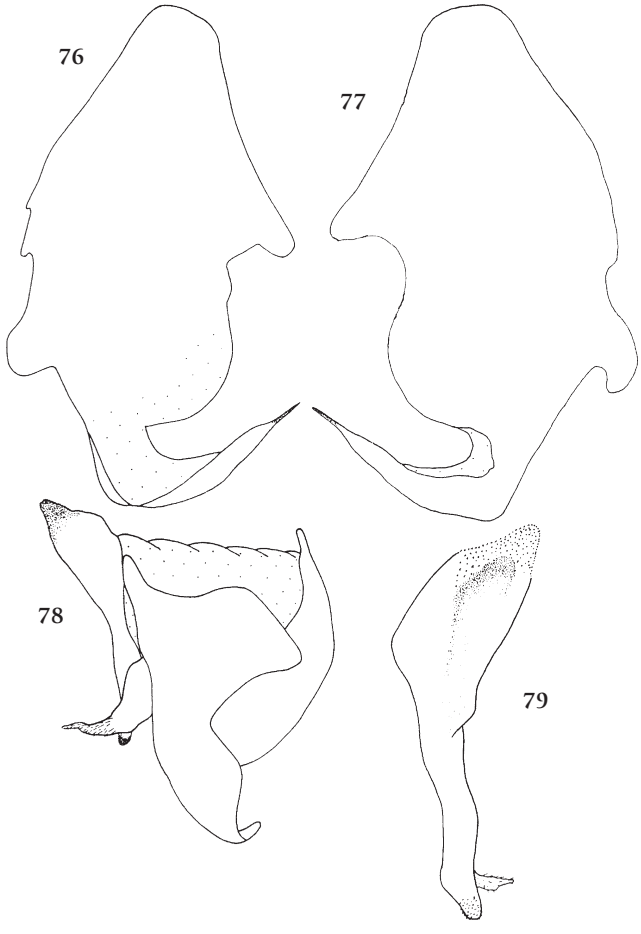


Figs 70-75. *Chopardiella poulaini*: **70.** Pronotum; **71.** Head; **72**. Anterior femur; **73.** Anterior tibiae; **74.** Anterior coxa; **75.** Middle femur.

Diagnosis.— Rather slender, green-ochraceous; wings hyaline; middle and hind legs with a distinct distal lobe.

Etymology.— Dedicated to my friend Simon Poulain for his contribution to the collection of this material.

Description.— **Male.**
Head: (Fig. 71) about 1.96 times as wide as pronotal supercoxal dilatation. Eyes ovoidal; upper margin of vertex straight, lower than imaginary line joining the apex of eyes; antennae long with ochraeceous scape and dark flagellum; frontal shield pentagonal, longer than high; maxillary and labial palpi with black internal surface.
Thorax: pronotum (Fig. 70) 10.5 times as long as its minimum width; lateral margins of prozona and supracoxal dilatation with minute teeth, the metazona with more robust teeth, supracoxal dilatation wide rounded. Anterior legs slender green-ochraceus; forecoxae (Fig. 74) anterior margins with 5-6 big ochraceous spines; distal lobes contiguous. Forefemora (Fig. 72) 6.8 times as long as its maximum width, upper margins moderately spinulate; 4 external



Figs 76-79. *Chopardiella poulaini*: **76, 77** Ventral left and right phallomeres; **78** Left phallomere; **79** Phalloid apophysis.

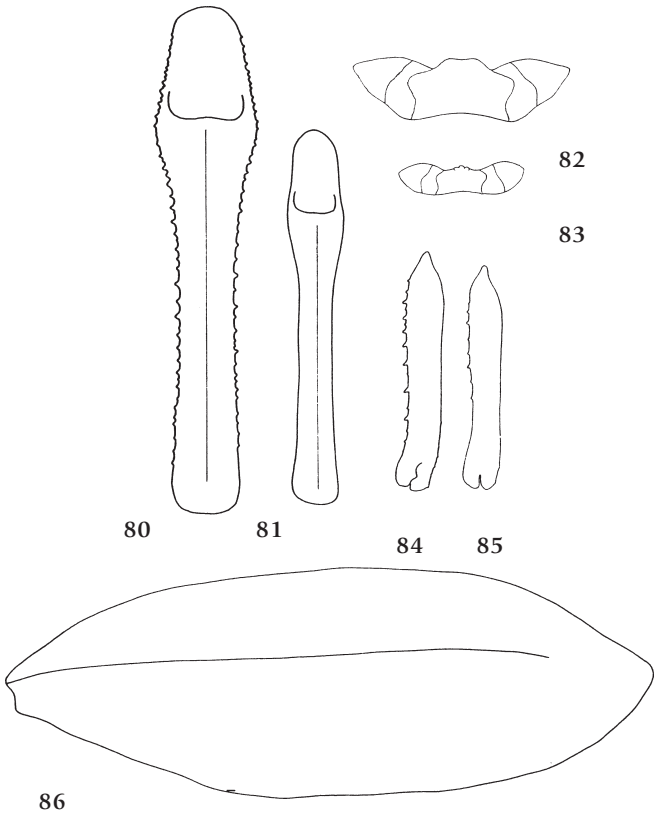
spines, with black internal surface and 15 internal spines. Foretibiae (Fig. 73) with 10-12 external spines and 14-15 internal spines, all green with black apex. Middle and hind legs with short hairs, midfemora with a distal lobe (Fig. 75); tibiae produced for about half their length. Metatarsi longer than all the articles together, wings hyaline, very well developed beyond abdomen apex; tegmina 10.2 times as long as maximum width; with rounded apex; costal field opaque green.

Abdomen: cylindrical, ochraceous; cerci long with 14 articles; supra-anal plate short triangular with rounded apex; subgenital plate well developed with 2 long styles.

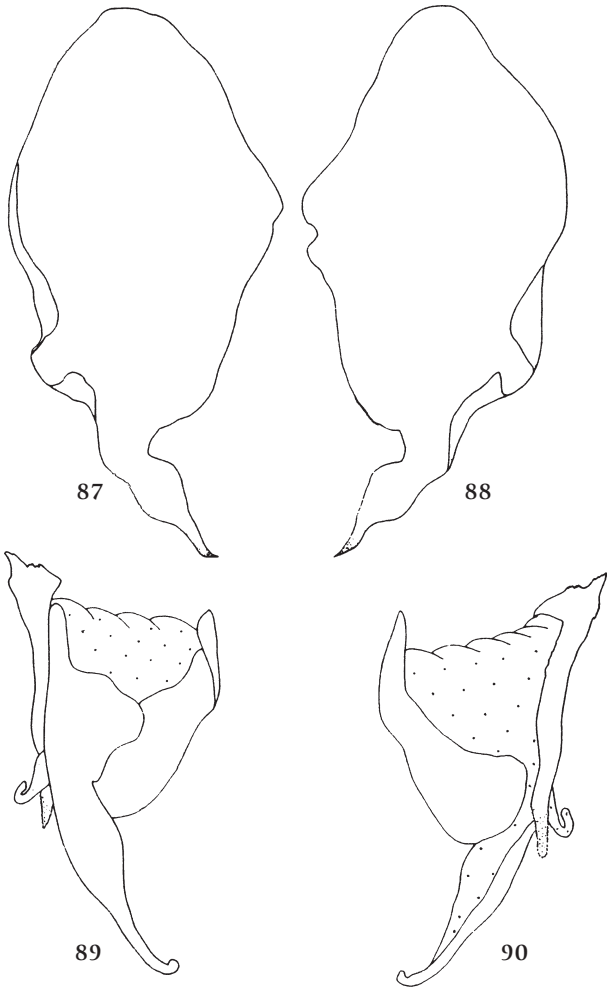
Male genitalia: ventral phallomere (Figs 76, 77) longer than wide, distal process long with acuminate apex; phalloid apophysis (Figs 78, 79) well developed with 2 branches, of which, the anterior one is wide and with minute spines; the posterior one is narrower.

This new species differs from *C. latipennis* in the following features: pronotum more robust and more denticulate; distal lobes of middle and hind legs more developed; distal process of ventral phallomere slender and not increased at the base; phalloid apophysis straighter.

Distribution.— Ecuador.



Figs 80-86. *Oxyopsis festae*: **80** Pronotum of ♀; **81** Pronotum of ♂; **82** Head of ♂; **83** Head ♂; **84** Anterior coxa of ♀; **85** Anterior coxa of ♂; **86** Mesothoracic wing (tegmen) of ♀.



Figs 87-90. *Oxyopsis festae*: **87, 88** Ventral phallomeres; **89 , 90** Left phalloid apophyses.

Oxyopsis festae Giglio-Tos, 1914.
(Figs 80-90)

Reference.— Giglio-Tos 1914, Gualaquiza.

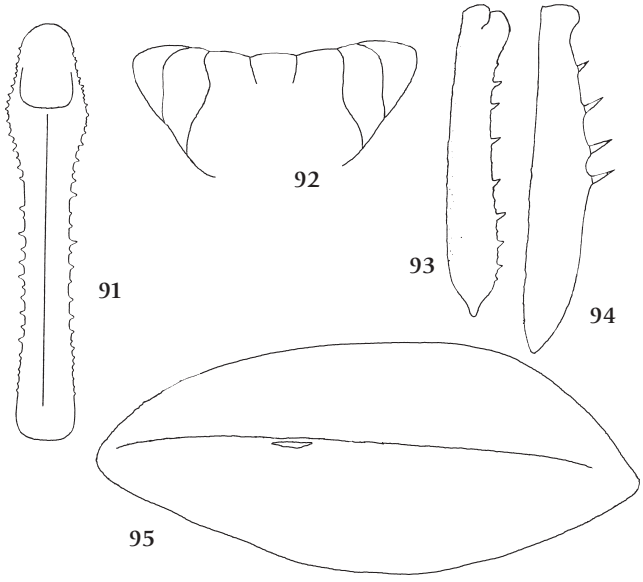
Material examined.— NAPO: Yasuni 2-VI-97, 1 ♂ (Leg. Onore) (QCAZ); Yasuni 16-XI-96, 1 ♂ (Leg. Paucar) (QCAZ); Coca V-85, 1 ♀ (Leg. Onore) (QCAZ); Coca V-88, 1 ♂ (Leg. Onore) (QCAZ); Coca XI-85, 1 ♂ (Leg. Martinez) (QCAZ); Talag 700m 10-VI-94, 1 ♀ (Leg. Onore) (QCAZ); Palmoriente 13-VI-87, 1 ♀ (Leg. Martinez) (QCAZ); Cuyabeno II-85, 1 ♀ (Leg. Garcia) (QCAZ); Archidona 3-91, 1 ♀ (Leg. Calderon) (QCAZ); Archidona 30-III-91, 1 ♀ (Leg. Vasquez) (QCAZ).

Remarks.— Previously only a single female specimen of this species was known (from Gaualaquiza). The finding of a series of 14 specimens, including some of both sexes, permits us to complete the description of the species.

Diagnosis.— **Male.** (Fig. 83) Much smaller than female. Head: about 2.5 times as wide as frontal supracoxal dilata-

tion, vertex moderately concave, eyes acute; frontal shield transverse, antennae long with scape and flagellum ochraceous.
Thorax: pronotum (Fig. 81) green, slender, 16.5 times as long as frontal supracoxal dilatation, lateral margins smooth; supracoxal dilatation not well developed. Anterior coxae (Fig. 85) 3.1 times as long as supracoxal dilatation, anterior margins with 10-11 small spines; distal lobes divergent, with one smaller. Femora 7.2 times as long as maximum width; external margins with 4 spines; internal margins with 15 spines, all ochraceous with black apex. Anterior tibiae with 10 external spines and 10-12 internal spines, all ochraceous with black apex. Wings hyaline, very well developed beyond apex of abdomen. Tegmina 3.9 times as long as maximum width, costal field green-opaque.
Abdomen: abdomen slender, ochraceous; subgenital plate longer than wide with 2 long styles.
Male genitalia: ventral phallomere (Figs 87, 88) longer than wide, distal process sinuous and robust. Phalloid apophysis (Figs 89, 90) with 2 branches of which the anterior is wider.

Description.—**Female.** Head: (Fig. 82) 1.47 times as wide as supracoxal dilatation, eyes ovoid with acute apex; vertex lower than an imaginary line joining the eyes; frontal shield transverse.
Thorax: pronotum (Fig. 80) 7.11 times as long as its maximum width; supracoxal dilatation not well developed; lateral margins denticulate; metazona with a median carina. Anterior coxae (Fig. 84) 2.68 times as long as supracoxal dilatation; anterior margins with 13 ochraceous spines; distal lobes contiguous, with external one longer. Anterior femora 5.04 times as long as maximum width; 4 external spines and 15 internal spines all ochraceous with black apex. Anterior tibiae with 15 external spines and 16 internal spines all ochraceous with black apex. Wings well developed, reaching apex of abdomen; tegmina green, (Fig. 90) 2.93 times as long as maximum width; costal field opaque, discoidal field with small hyaline windows; metathoracic wings hyaline with acuminate apex.
Abdomen: very dilated; supra-anal plate transverse.



Figs 91-95. *Catoxyopsis dubiosa*: **91** Pronotum; **92** Head; **93** Anterior coxa; **94** Anterior femur; **95** Mesothoracic tegmen.

Distribution.— Ecuador.

Catoxyopsis dubiosa (Giglio-Tos, 1898)
(Figs 91-95)

Reference.— Giglio-Tos, 1898, Santiago Valley.

Material examined.— NAPO: El Reventador V-85, 1 ♀ (Leg. Onore) (QCAZ).

Distribution.— Belize, Costa Rica, French Guyana, Suriname, Ecuador.

Choeradodis rhombicollis (Latreille, 1833)

Reference.— Saussure 1893-1899, Gualaquiza, Quevedo (Los Rios), San Rafael, Naranjae (Guayas), Ventura (Chimborazo), Rio Pescado (Azuay), Rio Topo (Tungurahua).

Material examined.— PICHINCHA: Rio Silanche 30-IV-95, 1 ♀ (Leg. Fridle) (QCAZ); Sto Domingo 14-I-94, 1 ♀ (Leg. Suarez) (QCAZ); La Esterie IV-88, 1 ♀ (Leg. Onore) (QCAZ); Alluriquin 10-XI-91, 1 ♀ (Leg. Como) (QCAZ); Pto Quito 1 ♀ (Leg. Arguello) (QCAZ); SDDC 800m 28-XII-84, 1 ♀ (Leg. Torres) (QCAZ); Pto. Quito XII-82, 1 ♀ (Leg. Lò Paz) (QCAZ); Sto Domingo 25-III-97, 1 ♀ (Leg. Neira) (QCAZ); Pto Quito 15-V-93, 1 ♂; Alluriquin 2-III-96, 1 ♂; Mindo 1-VIII-94, 1 ♂; Alluriquin I-96, 1 ♂ (Leg. Lombardo) (Coll. Lombardo); La Esterie 20-XI-87, 1 ♂ (leg. Gomez) (QCAZ); Maldonado 2-VII-91, 1 ♂ (Leg.Woolfson) (QCAZ); Megalito 1300m 2-X-92, 1 ♂ (Leg. Lopez) (QCAZ); Sto Domingo XII-71, 1 ♂ (Leg. Venedict); Alluriquin 17-I-86, 1 ♂ (Leg. Gonzales) (QCAZ); Pto Quito 26-VII-84, 1 ♂ (Leg. Gàvate) (QCAZ);
ESMERALDAS: Mayronga SE Lagarto 5-XII-93, 1 ♀ (Leg. Abarragan) (QCAZ); Mayronga 5-XII-93, 1 ♀ (Leg. Onore) (QCAZ); Mayronga 15-X-93, 1 ♂ (Leg. Onore) (QCAZ); CCRP 5-VIII-89, 2 ♂♂ (Leg. Sandoval) (QCAZ).
COTOPAXI: Las Pampas VI-85, 1 ♀ (Leg. Onore) (QCAZ).
NAPO: Yasuni 250m 18-II-97, 1 ♂ (Leg. Itapia) (QCAZ); Yasuni 1-IV-97, 1 ♂ (Leg. Onore) (QCAZ).
BOLIVAR: Ventanas Los Rocs 27-XII-97, 1 ♂ (Leg. Vezastegui) (QCAZ).
LOS RIOS: San Clemente Majogi 12-I-84, 1 ♂ (Leg. Cuesta) (QCAZ).

Distribution.— Nicaragua, Panama, Colombia, Ecuador, Peru.

Choeradodis stalii Wood-Mason, 1880

Reference.— Giglio-Tos, 1927 , Ecuador.

Material examined.— NAPO: Yuturi, 25-II-1990, 1 ♂ (Leg. Sandoval) (QCAZ).

Distribution.— Ecuador.

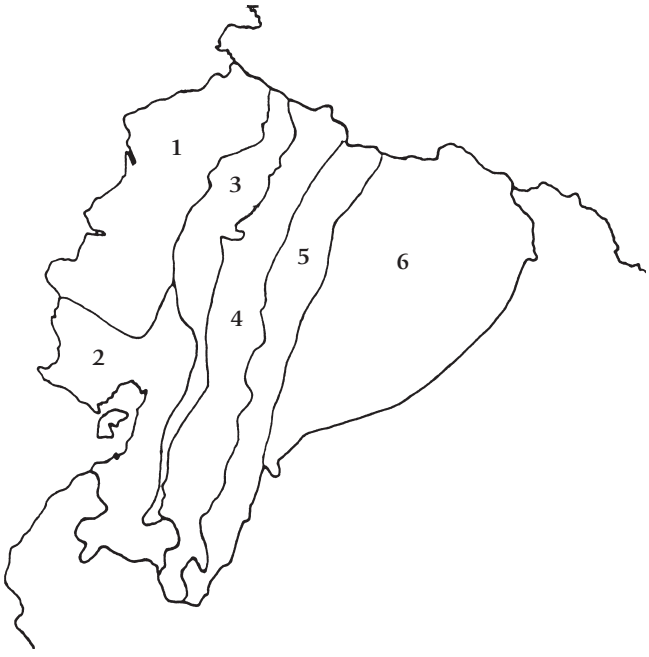


Fig. 96. Natural regions of Ecuador: 1. Dense western forest; 2. Dry western forest; 3. Western Andes; 4. Central plateau; 5. Eastern Andes; 6. Amazon region.

Biogeographic considerations

Ecuador is an important biogeographic region, because it is a line of break between northern and southern faunas. It includes the following natural regions (Lemaire, 1976): 1. Dense western forest; 2. Dry western region; 3. Western Andes; 4. Central plateau; 5. Eastern Andes; 6. Amazon region (Fig. 96).

The analysis of the distribution of the 49 species of mantids already known in Ecuador gives the following faunistic groupings:

1. *Polytopic species*.— This group includes species widely distributed in Ecuador: *Acontista concinna*, *A. ecuadorica*, *Stagmomantis theophila*, *Vates weyrauchi*, *Oxyopsis festae*, *Choeradodis rhombicollis*.

2. *Dense western forest group*.— This group includes two species: *Pseudomusonia lineativentris* and *Tithrone latipennis*.

3. *Amazon-Guyana group*.— This includes species distributed in Amazonia and in the dense western forest. It is a very interesting group, because it gives evidence of old connection of the two areas, established during the Tertiary period through the Colombian Choco. To this group belong: *Angela armata*, *A. guianensis*, *Pseudomiopteryx festae*, *Liturgusa maya*, *Vates biplagiata*, *Stagmatoptera flavipennis*.

4. *Andes group*.— To this group belong A) Species present in the western Andes region: *Acontista festae*, *Musonia surinama*, *Thesprotiella festae*, *Liturgusa cayannensis*, *Phyllovates cingulata*, *Calopteromantis hebardi*, *Calopteromantis otongica*, *Acanthops onorei*, *Xystropeltis meridionalis*, and B) Species present in theeastern Andes region: *Catoxyopsis dubiosa*, *Vates festae*, *Callibia diana*, *Acanthops erosula*, *Bantia fusca*.

5. *Amazon group*.— This group includes: *Raptrix fusca*, *Metilia brunneri*, *Angela peruviana*, *Macromusonia conspersa*, *Liturgusa peruviana*, *Macromantis hyalina*, *Metriomantis occidentalis*, *Parastagmatoptera flavoguttata*, *Phyllovates brevicornis*, *Heterovates pardalina*, *Vates pectinicornis*, *Chopardiella poulaini*, *Choeradodis stalii*, *Raptrix perspicua*, *Acanthops royi*, *Stenophylla lobivertex*.

Acknowledgements

We express our sincere thanks to our friend Giovanni Onore for the loan of material.

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