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A New Species of *Moranida* Mansell from Venezuela (Neuroptera: Nemopteridae)

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Introduction

Mansell (1983) described two new species and genera of Crocinae from Peru and Bolivia bringing the total number of South American species of this subfamily to five species. However, all five species occur well south of the equator. Recently the authors discovered a sixth species in northern Venezuela greatly extending the northern range of the family in South America. This new species belongs to the genus *Moranida* Mansell. Both adults and larvae were found and are described here with a key to the species of Crocinae of South America. We also found and reared *Moranida peruviansis* Mansell from Lambayeque, Peru, and provide this new record. This paper represents contribution No. 645 of the Bureau of Entomology.

Moranida manselli Miller & Stange new species (Figs. 1-11)

Diagnosis. *M. manselli* averages smaller in size. Notably, the male abdomen, which is about 1/3 the length of the forewing is much shorter than in the only other species of the genus, *M. peruviansis*. Also, the shorter rostrum and shorter forebasitarsus of *M. manselli* are of diagnostic value for distinguishing it from *M. peruviansis*. The larva of *M. manselli* differs from *M. peruviansis* in having a wider head capsule and dolichasters on the mandible.

Description: Holotype male. Length of body (excluding head) 7.2 mm, forewing length 10.8 mm, greatest width 2.7 mm, hindwing length 30.0 mm, length of antenna 2.0 mm,

length of rostrum (from ventral margins of antennal sockets) 0.9 mm.

Coloration: Head with rostrum pale brown with dark brown stripe ventrally from tentorial pit, transverse darker brown band near middle of clypeus, at clypeal-labral suture, at tip of labrum, and mostly darker brown posteriorly; vertex with discrete pattern of white lines or stripes on dark brown background (Fig. 4) as follows: pale along orbits, pale median stripe posteriorly, ending anteriorly as transverse pale white line in front of which are double white submedian lines which run to rostrum and expand medially; sublateral white area near posterior margin; antenna with scape (except dark medially) and pedicel off white, flagellomeres mostly light brown except paler apically, distal flagellomere dark brown; pronotum light chocolate brown with fairly broad median pale stripe and mostly pale posterolaterally; prescutum mostly light chocolate brown with sub-lateral pale stripe, mesothoracic spiracle mostly pale brown; mesoscutum dark chocolate brown with sublateral pale stripe which crosses over in front of mesoscutellum, pale spot posteriorly, mostly pale laterally; mesoscutellum mostly light chocolate brown with median pale white stripe; postnotum mostly light chocolate brown with pale medially; metascutum mostly dark brown; metascutellum with anterior half dark brown, posterior half mostly pale; pleura mostly light brown but with darker, irregular areas especially at sclerite junctures; all legs with about same color pattern except forecoxa mostly pale brown; femora and tibiae pale brown with subbasal dark area on femora and basal dark area on tibia; tarsi mostly pale brown; pretarsal claws reddish brown; forewing with hyaline membrane except some dark brown suffused crossveins (presectoral crossveins between cubital and anal vein, between anal veins and posterior margin) in basal one-half of wing; pterostigma yellowish; longitudinal veins mostly pale brownish except at crossvein junctures; crossveins mostly darker brown; hindwing mostly pale brown with darker brown crossveins; abdomen predominately dark brown with tergites and sternites pale posteriorly, ectoproct (but not postventral lobe) mostly pale brown; tergite II mostly pale.

Chaetotaxy: Head, thorax and basal part of abdomen nearly devoid of macrosetae except few pale setae on antennal flagellomeres and mouthparts, many small dark setae on pronotum and cervical sclerite, abdominal tergites III to IX with dark setae mostly on posterior area,

sternites nearly devoid of setae except posteriorly; ectoproct with fair number of dark setae, postventral lobe with many setae, especially thicker ones on inner margin which are about as long as 1/2 lobe diameter; legs with many small brown setae less than 1/5 leg diameter, longest setae at apical margins of tarsomeres; forewing veins and crossveins with setae, those on costal, subcostal, and radial veins very short (less than vein diameter), those on crossveins and other veins especially in apical field of wing and posterior margin (except basally) are over 4x as long as costal area height; hindwing with many light brown setae, on basal 1/5 of wing setae much shorter than wing width, increasing toward middle where setae become several times longer than wing width, long setae occur well beyond midpoint of wing where they decrease in length suddenly (white part of hindwing) to less than wing width.

Structure: Rostrum 1.8 times longer than interocular distance measured at vertex (Fig. 4); antenna short, with 24 flagellomeres, basal flagellomeres about 1/2 diameter of flagellomeres beyond middle; most flagellomeres much longer than wide; greatest interocular distance about 2/3's of greatest ocular width; vertex abruptly higher medially; pronotum slightly longer (as measured at midline) than greatest width; fore basitarsus about 7 x longer than wide, about as long as next 4 tarsomeres together; pretarsal claws of foreleg about as long as tarsomere II; fore wing (Fig. 11) with slightly emargined posterior margin (beyond middle); pterostigma with incrassate crossveins; forewing with 2 presectoral crossveins; 10 crowded cross-veins (mostly thickened at ends) between Rs and R; Rs branched, the first two branches curving upwards, the upper part thickening progressively before nearly touching radial vein, lower one terminating at hypostigmal area, 9 crossveins (mostly thickened where touching thickened upper branch of Rs) between these two branches; abdomen short, about 1/3 length of forewing; terminalia with tergite VIII much broader than long; tergite 9 narrowed dorsally; postventral lobe of ectoproct forcipate, about 6.0 times longer than middle diameter (Fig. 5); gonarcus arcuate with distal flange, narrowly connected to mediuncus, parameres forming nearly right angle (Figs 7, 8) near middle with distal lobes at 45° angle to each other; structure containing distal lobes of parameres not longitudinally connected to 9th sternite.

Female. About as described for male except hindwing without elongated setae on middle section; posteroventral margin of ectoproct (Fig. 10) with long brown setae and indistinct callus cerci; lateral gonapophysis mostly positioned distad of ninth tergite; extra sclerite present above lateral gonapophysis; spermatheca narrower proximally, distended in mid region, then tapering to long acute tip which is covered with small seta-like outgrowths.

Larva. Head capsule (Fig. 3) subquadrate, 1.3 times wider (measured at widest point) than long, predominately light brown, but darker laterally and posteriorly and along major head sutures; most of head capsule except about anterior one-half of venter covered with papilla often bearing white dolichasters; posterior margin ventrally and laterally with large papillae; mandible about 1.2 times longer than head capsule, uniform light brown bearing many short, white dolichasters on enlarged, papilliform setal bases along mesal and lateral margins distally to about strong mandible curvature; eyes dark brown; antenna with stout brown pedicel bearing a slender, pale brown flagellum of about 8 flagellomeres (segmentation indistinct); labial palps

brownish, basal segment largest, flattened, rectangular, cylindrical mid-segment less than 1/2 length of apical segment which is nearly cylindrical, narrowed at apex, bearing oval pit-shaped sense organ on dorsal surface.

Prothorax moderately long, about 2.5x times longer than head length; anterior region uniformly pale brown except fuscous band at dilated anterior area which is covered with small, scale-like tubercles; lateral margin with small white dolichasters borne on enlarged setal bases; mid-region of prothorax pale brown except much darkened laterally; mid-region of prothorax produced ventrally on either side of anterior region as white processes; lateral margin with many white dolichasters borne on enlarged setal bases; posterior region pale reddish brown with submedial, dark brown stripe and darker brown over spiracles, laterally with white dolichasters borne on enlarged setal bases; posterior region pale reddish brown with submedial, dark brown stripe and darker brown over spiracles, laterally with white dolichasters borne on enlarged setal bases; all coxae and femora with small dolichasters; meso- and metathorax along with abdomen pale reddish brown with irregular patchwork of darker brown areas, especially large dark brown area medially in anterior 1/3 of abdomen, and 3 pairs of dark brown submedial spots in posterior one-half; abdominal terga I-V nearly fused together, posterior margins of V to IX with few white dolichasters; abdominal integument covered by many minute scale-like structures; lateral margin of abdomen with white dolichasters, except seta-like on segments VIII and IX.

Material examined. Holotype male (FSCA), 26 male, 9 female paratypes from VENEZUELA, Aragua, San Sebastian, Gruta de Lourdes, Feb. 12, 1986, R. B. Miller and L. A. Stange (FSCA, Miller Collection, Maracay Collection, Pretoria, USNM). Two female paratypes from VENEZUELA, Guarico, San Juan de los Morros, March 2, 1986, R. B. Miller and L. A. Stange (FSCA). Five preserved larvae from Holotype locality (Miller Coll., FSCA, Pretoria). One preserved larva from VENEZUELA, Guarico, 11 miles W. Dos Caminos, March 2, 1986, R. B. Miller and L. A. Stange (Miller Coll.). This species is dedicated to Dr. Mervyn M. Mansell in recognition of his contributions to the taxonomy and biology of the Nemopteridae.

Biology. The habitat of *M. manselli* is a rocky limestone outcrop that occurs on the tops of some mountains in the states of Aragua and Guarico. These limestone caps have a decided xeric vegetation of cacti, agaves, and similar plants, but at somewhat lower elevations the vegetation is more moist with tropical vegetation. The species was first discovered by the authors during the day, sifting dry sand under rocky ledges in zones of darkness while collecting larvae of an antlion species (*Eremoleon*). However, at dusk many adults were seen bobbing around large boulders and were netted. These adults were mostly full of pollen. The only flowers we noticed were pungent blooming agaves on the summit of the cliffs.

Observations. The structural characteristics of *M. manselli* reduce the generic distinctions between *Moranida* Mansell and *Amerocroce* Mansell. *M. manselli* is similar to *M. peruviansis* in wing venation, sexually dimorphic setal structure in the hindwing, fusion of female sternites VII and VIII, structure of the female lateral gonopophysis and tergite IX and the unfused paramere ends of the male genitalia. However, other features agree with *Amerocroce boliviana* Mansell. These include the short antennae, short abdomen, and the presence of an extra sclerite above the lateral gonapophysis. It also is apparent comparing these three species that there is considerable variation in the length of the rostrum, degree of separation of the structure containing the distal lobes of the parameres from sternite IX and the development of dolichasters on the larval mandibles.

Moranida peruviansis Mansell 1983

New records. Four males, 2 females were reared from larvae collected at 6 km. S. Motupe, Lambayaque, Peru, July 20, 1982, by R. B. Miller and L. A. Stange (Florida State Collection of Arthropods, Gainesville, Florida and Miller Coll.). Also 5 larvae were preserved (FSCA, Miller Coll.)

Discussion. The conspicuous differences both in adult and larval structure of the two known species suggest that more species await discovery in South America. Adults can be common in certain habitats at the right time of the year. However, often this is during the dry season when general insect collecting is poor. Larvae also can be common but require specialized searching. The rather spotty collecting of this group in South America is probably due to these factors plus the fact that little collecting, at least by neuropterists, has been done in South America. The first South American crocine was described in 1927, the second in 1954, the third in 1981, followed by two in 1983, and finally *M. manselli*.

Key to Crocinae of South America

(Note: Generic placement of *Veurise fritzi* is uncertain since the male is unknown. Wing venation would place it in *Amerocroce* but female terminalia agrees with *Veurise*.)

Adults

1. Forewing vein 1A runs as discrete vein to hind margin; cubital vein forks near base; basal tarsomere of foreleg less than 3X longer than wide (Pastranaiini); La Rioja Province, Argentina
..... *Pastranaia riojana* Orfila

Forewing vein 1A fused with vein Cu near base (Fig. 11); cubital vein forks beyond level of origin of radial sector (Fig. 11); basal tarsomere of foreleg more than 6X longer than wide (Crocini) 2
2. Forewing vein Rs thickening progressively until fusion with radial vein, crossveins touching thickened Rs often thickened at ends (Fig. 11); rostrum (Fig. 4) less than 3X longer than interocular distance measured at vertex; male hindwing with setae much longer near middle than at basal and distal ends (*Moranida*) 3

Forewing vein Rs not thickened nor are associated crossveins; rostrum more than 3X longer than interocular distance measured at vertex; male hindwing without differentiation of much longer setae near middle 4
3. Rostrum 2.5X longer than interocular distance measured at vertex; forebasitarsus much longer than next 4 tarsomeres together; presectoral crossveins not margined with dark; male abdomen banded, more than 1/2 length of forewing; Peru
..... *Moranida peruviansis* Mansell

Rostrum 1.8X longer than interocular distance measured at vertex (Fig. 4); forebasitarsus about as long as next 4 tarsomeres together; presectoral crossveins margined with dark; male abdomen not banded, about 1/3 length of forewing; Venezuela
..... *Moranida manselli* Miller and Stange
4. Forewing vein Rs well separated from radial vein; forewing vein Cu A forks near level of origin of radial sector; rostrum about 3X longer than interocular distance; Catamarca & Salta Provinces, Argentina
..... *Veurise bruchi* Navas

Forewing vein Rs curves upward approximating radial vein (separation at nearest point less than subcostal height); forewing vein CuA forks well beyond level of origin of radial sector; rostrum about 4X longer than interocular distance measured at vertex; Bolivia..... 5

5. Maxillary palpus with 4 palpomeres; female sternites VII & VIII separate.....
..... *Amerocroce boliviana* Mansell

Maxillary palpus with 5 palpomeres; female sternites VII & VIII fused.....
..... *Veurise fritzi* Stange & Williner

Larvae

(Larvae of *Pastranaia riojana* & *Veurise fritzi* unknown)

1. Prothorax about 1.5 times longer than head; Catamarca, Argentina.....
..... *Veurise bruchi* Navas

Prothorax at least 2.5 times longer than head..... 2

2. Head longer than wide; mandible without dolichasters; coastal Peru.....
..... *Moranida peruviansis* Mansell

Head as long as wide or wider than long; mandible with at least several dolichasters proximally on mesal margin..... 3

3. Head capsule with numerous papillae bearing tiny dolichasters, especially large at posterolateral margin (Fig. 3); prothorax 2.5 times or less length of head; Aragua and Guarico, Venezuela.....
..... *Moranida manselli* Miller & Stange

Head capsule without evident papillae; prothorax 3.8 times longer than length of head; Central Bolivia.....
..... *Amerocroce boliviana* Mansell

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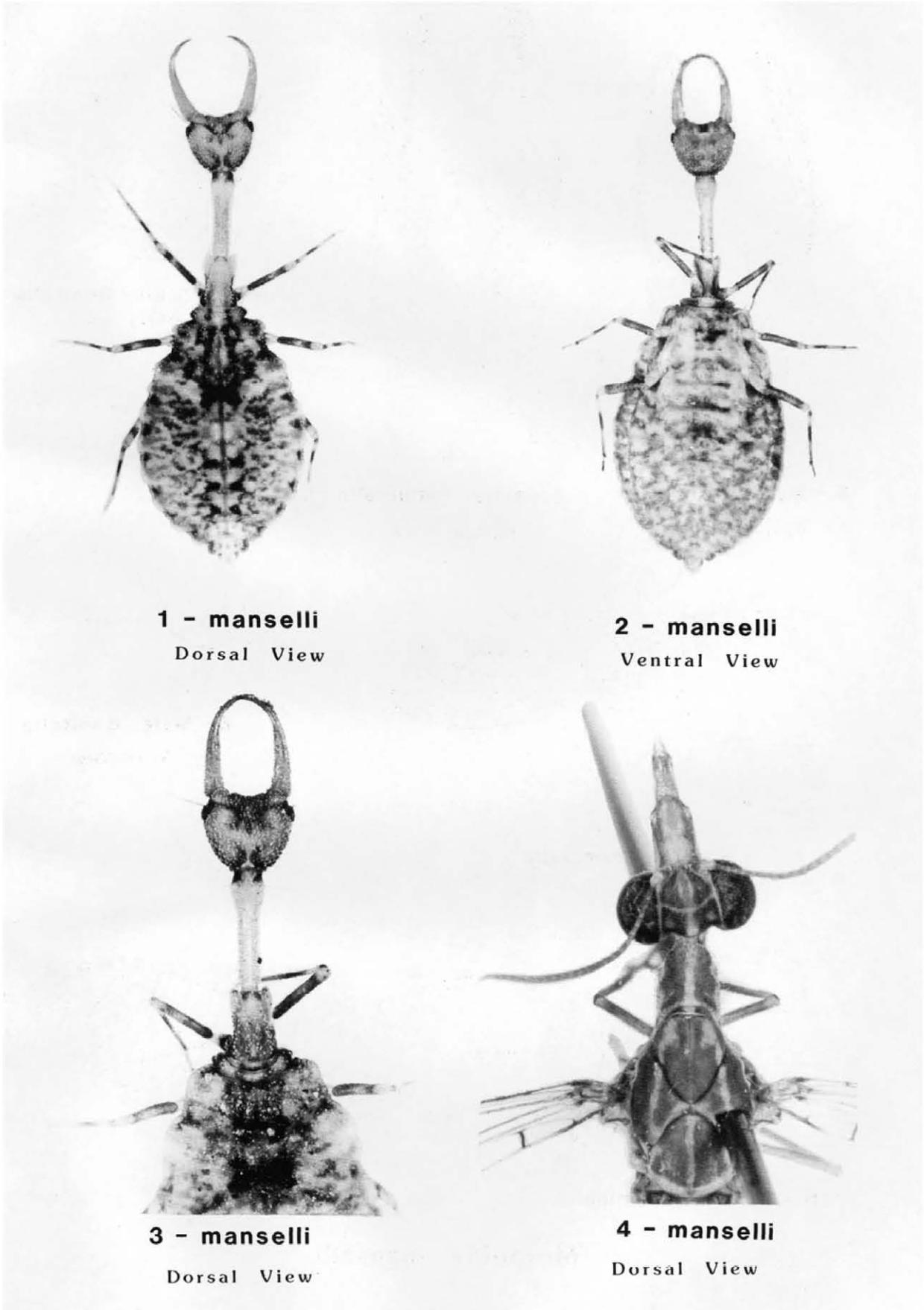
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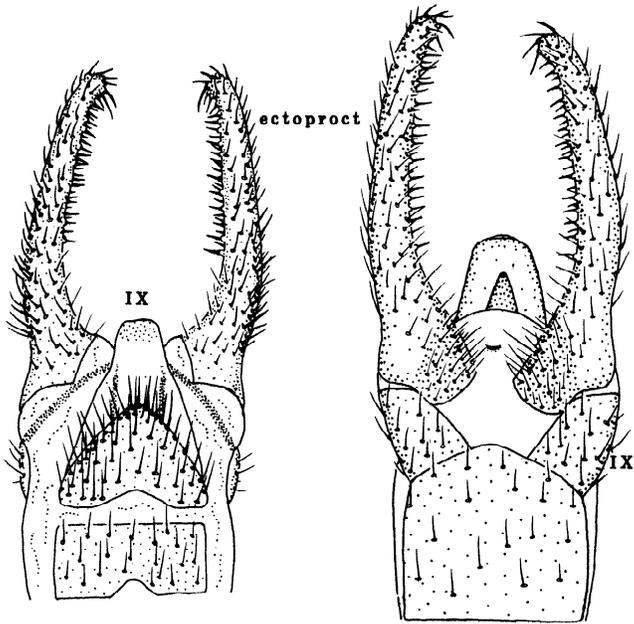
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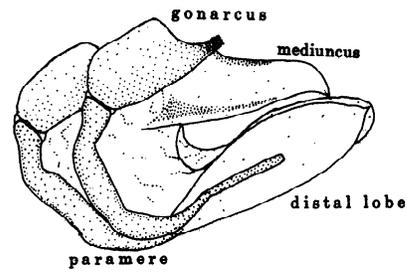
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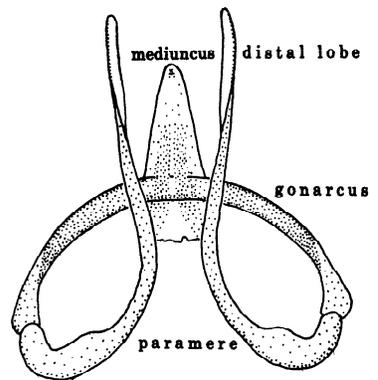


5 - Male Terminalia
Ventral View

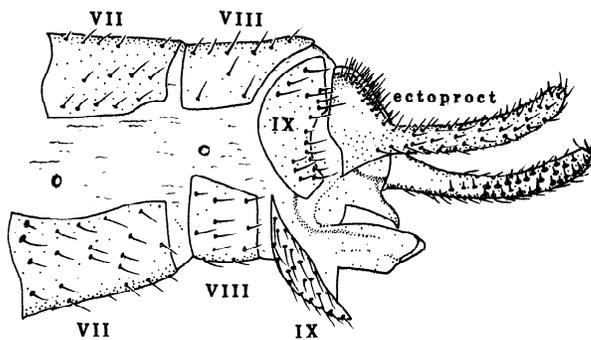
6 - Male Terminalia
Dorsal View



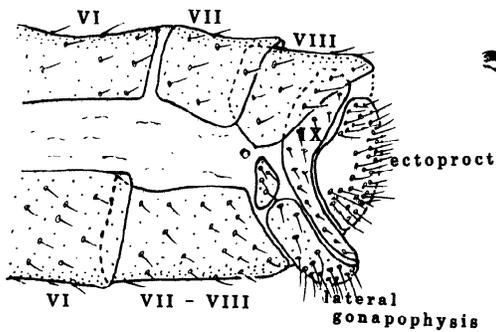
7 - Male Genitalia
Lateral View



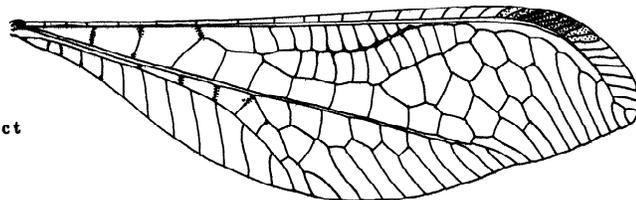
8 - Male Genitalia
Ventral View



9 - Male Terminalia
Lateral View



10 - Female Terminalia
Lateral View



11 - Forewing

Moranida manselli