New World Polyctenidae (Hemiptera), with special reference to Venezuelan species

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NEW WORLD POLYCTENIDAE (Hemiptera), WITH SPECIAL
REFERENCE TO VENEZUELAN SPECIES

by

Northiro Ueshima

ABSTRACT

There are seven species of the polyctenid genus *Hesperoctenes* which occur in Venezuela. Six of these species are reported in this paper. *H. longiceps* (Waterhouse) is redescribed. Data on distribution and hosts and a key to the 15 species of the genus *Hesperoctenes* are given.

INTRODUCTION

The family Polyctenidae in the New World is believed to be represented by only one genus, *Hesperoctenes*; in contrast to four genera found in the Old World (Ferris and Usinger, 1939; Usinger, 1949, and Maa, 1964). In the genus *Hesperoctenes*, 16 species have been described. However, except for *H. jumarius* and *H. setosus* only a few specimens of each species are known. Also, the host relationships and distribution patterns of each species are not yet clearly understood.

Personnel of the Smithsonian Venezuelan Project collected over 200 specimens of *Hesperoctenes*. This large volume of material allows a better understanding of the host-parasite relationships of the New World Polyctenidae. In this paper I have presented host-parasite data, a redescription of *H. longiceps*, and a revised key to the species of *Hesperoctenes*. This paper is based on material collected by personnel of the Smithsonian Venezuelan Project (SVP).

I am greatly indebted to the late professor R. L. Usinger for allowing me to study this material and for the many helpful suggestions he gave me. I wish to acknowledge the help of Dr. C. O. Handley, Jr. (Smithsonian Institution, Washington, D. C.) and Dr. V. J. Tipton (Department of Zoology, Brigham Young University, Provo, Utah) who were responsible for organizing and carrying out the Venezuelan Project. Dr. R. L. Wenzel (Field Museum of Natural History, Chicago, Ill.) has also been generous with his help.

All of the Venezuelan specimens were collected by M. D. Tuttle, A. L. Tuttle, and F. Harder, except some specimens from Sucre and Monagas were collected by N. E. Peterson, R. B. Peacock, and D. B. Peacock.

*Hesperoctenes longiceps* (Waterhouse)


Redescription

Male: Head about 0.82 mm long; distinctly longer, including labrum, than width posteriorly, 34:30. Labrum three times as long at middle as at sides, 6:2. Clypeus with about 25 bristles on middle of posterior half of disk, with single row of bristles just outside of suture, posteriorly continuing to basal group of about 20 bristles;
discolateral areas with about 55 bristles in each; sublateral setiferous areas with about 12 bristles in each; genital combs rounded angular anterolaterally. Hypostomal region with about nine pairs of fine bristles in addition to pair of prominent bristles, naked at posterior margin. Antennae about 1 mm long; proportion of segments, 6:12:11:11; first segment with about 12 short, stout bristles anteriorly, with several slender bristles on anterior and posterior margins; teeth on comb of second segment short and stout, about one-half as long as occipital comb. Rostrum 0.2 mm long; proportion of segments, 5:5:7. Thorax. Pronotum 0.3 mm wide; more than one-half again as wide as long, 25:20; disk covered with rather sparsely placed bristles; two pairs of long bristles posterolaterally, longest bristles much longer than first antennal segment. Prosternum less than one-half again as long as wide, 17:12; anterior margin with 7-8 very stout bristles on either side, with slender bristles at middle; with one to three rows of long and slender bristles just behind anterior margin; posterior disk with about 40 small scattered bristles. Hemelytral pads distinctly longer than wide, 25:20; inner anterior area naked. Metasternum with bristles except at middle. Metepipleura beneath with 8 very stout bristles arranged in two or three rows. Front femora with row of 6 stout bristles on anterior margin; about one-half again as long as greatest width, 25:13. Middle and hind femora with long erect bristles, 0.2 mm long. Middle tibiae with 4 long erect bristles, longest ones 0.4 mm long and much longer than second antennal segment. Hind tibiae with 3 long erect bristles, as long as on middle tibiae.

**FEMALE.**—Head about 0.7 mm long; distinctly longer, including labrum, than width posteriorly, 32:27. Labrum three times as long as middle as at sides, 6:2; Clypeus with about 20 scattered bristles on middle of posterior half of disk, with single row of bristles just outside of sutures, posteriorly continuing to basal group of about 12 bristles; discolateral areas with about 55 bristles in each; sublateral setiferous area with about 12 bristles in each; genital combs rounded angular anterolaterally. Hypostomal region with about seven pairs of fine bristles in addition to pair of prominent bristles, naked at posterior margin. Antennae about 1 mm long; proportion of segments, 6:12:11:11; first segment with about 12 short, stout bristles anteriorly, with several slender bristles on anterior and posterior margins; teeth on comb of second segment short and stout, about one-half as long as occipital combs; third segment with long bristles, as long as first antennal segment. Rostrum 0.2 mm long; proportion of segments, 5:5:7. Thorax. Pronotum 0.3 mm wide; more than one-half again as wide as long, 37:23; disk covered with rather sparsely placed bristles; two pairs of long bristles posteriorly, longest bristles much longer than first antennal segment. Prosternum one-half again as long as wide, 18:12; anterior margin with 6-8 very stout bristles on either side, with slender bristles at middle; with one or two rows of long and slender bristles just behind anterior margin, posterior disk with about 40 small scattered bristles. Hemelytral pads distinctly longer than wide, 25:20; inner anterior area naked. Metasternum with bristles except at middle. Metapleura beneath with 8 very stout bristles arranged in two or three rows. Front femora with row of 6 stout bristles on anterior margin; about one-half again as long as greatest width, 18:13. Middle and hind femora with long erect bristles, 0.2 mm long. Middle tibiae with 4 long erect bristles, longest ones 0.4 mm long and much longer than second antennal segment. Hind tibiae with 3 long, erect bristles, as long as on middle tibiae.

**MALE.**—(slide mounted) holotype, length 3.25 mm, width (pronotum) 1 mm, (abdomen) 0.9 mm; female (slide mounted), length 3.3 mm, width (pronotum) 0.98 mm, (abdomen) 1 mm. Redescribed from the male holotype, Guatemala, kindly sent from the British Museum. The female was described from the specimen taken 19 km NW Urama, Yaraey, Venezuela, 19-111-1966 (M.D. Tuttle and A.L. Tuttle), ex Eutamops auripendalus (SVP 0861).

**II. longiceps** was originally described by Waterhouse (1880). He stated, "Two specimens found by my colleague, Mr. Oldfield Thomas, on a hat, Mollusus abratus Tenminck." Jordan (1922) stated, "I have seen only ♀♀" and "In Mus. Brit. (sic) from Cujabon, Guatemala; three ♀♀ and one ♀ nymph." However, Ferris and Usinger (1939) stated, "A single nymph, Guatemala, British Museum, 1930-120. The accompanying drawing from the unique male type in the British Museum is by W. E. China." Their statement agrees with the statement by Waterhouse (1880). Apparently, the British Museum has the male holotype and a nymph paratype, in addition to one male taken in December 1933 by L. H. Dunn in Panama City. Jordan's specimens could not be located in the British Museum.

The key character used by Ferris and Usinger (1939) for longiceps, i.e. posterior pleurites beneath with a single row of 6 stout bristles, turned out to be incorrect. The holotype apparently has two or three rows of S
Fig. 1. *Hesperoctenes longiceps* (Waterhouse), female (Celeste Green, original).
bristles on the posterior pleurites. Also the measurement given by them was not accurate; the length of the holotype is 3.25 mm, not 4.3 mm.

**Venezuelan Records**

Three females ex *Eumops auripendulans* (SVP 6891, 6862). Varaco, 19 km NW Urama, 25 m elev., 9-III-1966; 8 females, 1 male ex *Eumops glaucinus* (SVP 26994, 27862, 27866, 27867, 28369), T. F. Amazones, Tamanaco, 6 km NE San Juan, Manapiare, 155 m elev., 17-23-V-1967; 1 female ex *Molossus ater* (probable contamination) (SVP 28770), same data as above.

**Hesperoctenes hermsi** Ferris and Usinger

**Venezuelan Records**

Two females, 1 male, 1 nymph ex *Tadarida gracilis* (SVP 6344, 6349, 6360), Apure, Rio Cinaruco, 41 km NW Pto. Paez, 76 m elev., 21-4-1966; 1 female ex *Eumops glaucinus* (SVP 27869), T. F. Amazones, Tamanaco, 6 km NE San Juan, Manapiare, 155 m elev., 19-V-1967.

**Hesperoctenes carthus** Jordan

**Venezuelan Records**

One female, 4 nymphs ex *Molossus planirostris*

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**Table 1. Venezuelan Records of Hesperoctenes funarius (Westwood)**

<table>
<thead>
<tr>
<th>HOST</th>
<th>LOCALITY AND DATE</th>
<th>FIELD NUMBERS</th>
<th>STAGE AND NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Eumops auripendulans</em></td>
<td>COLOMBIA: Meta, Pto. Hatoz, VI-1966</td>
<td>6060</td>
<td>1F</td>
</tr>
<tr>
<td><em>Eumops bomarinius</em></td>
<td>BOLIVIA: Beni, San Joaquin, 7-VI-1963 (SVP 6862)</td>
<td>853, 2505</td>
<td>3FF, 1N</td>
</tr>
<tr>
<td><em>Molossus ater</em></td>
<td>VENEZUELA: Apure, 60 km NE Pto. Paez, Hato Cariben, Rio Cinaruco, VII-1965</td>
<td>SVP 5657, 5658</td>
<td>1F 4MM, 4N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5731, 5736</td>
<td>4N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5750, 5776</td>
<td>4N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SVP 13719, 13721</td>
<td>24FF, 25NN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13723, 13726, 13730, 13738, 13748, 13751, 13753, 13762, 13770, 13774, 13776, 13793, 13798, 13971, 13972, 13973, 13975, 13976, 13978, 13979, 13999, 14002, 14003, 14004, 14008, 14010, 14048, 14053, 14055, 14104</td>
<td>25NN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16M</td>
<td>25NN</td>
</tr>
</tbody>
</table>

**VENEZUELAN AND OTHER RECORDS**

See Table 1.

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SVP 27859, 27861, 27889, 27895, 27925, T. F. Amazones, Tamanaco, 6 km NE San Juan, Manapiare, 145-155 m elev., 19-VII-1967. Also 1 female, 1 nymph ex *Molossus planirostris* (Tipton 6589), Panama Canal Zone, Corozal, 22-XI-1960.

**Hesperoctenes setosus** Jordan

**Venezuelan Records**


**Hesperoctenes funarius** (Westwood)

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16
Table 1 (continued).

<table>
<thead>
<tr>
<th>Species</th>
<th>Collection Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Molossus aztecus</strong></td>
<td>T. F. Amazonas, 68 km SE Esmeralda, Boca Mavaca, Rio Orinoco, 16-II-1966</td>
</tr>
<tr>
<td><strong>Molossus bondae</strong></td>
<td>Yaracuy-Carabobo border, 10 km NW, Urama, Rio Yaracuy, III-1966</td>
</tr>
<tr>
<td><strong>Molossus ater</strong></td>
<td>Bolivar, 59 km SE El Dorado, km 74, El Manaco, VI-1966</td>
</tr>
<tr>
<td><strong>Molossus aztecus</strong></td>
<td>T. F. Amazonas, huge lagoon extending to ca. 2 km N Tamanao, N San Juan, Manapiare, 18-VI-1967</td>
</tr>
<tr>
<td><strong>Molossus major</strong></td>
<td>Barinas, 2 km SW Altamira, La Vega del Rio Santo Domingo, 27-XII-1967</td>
</tr>
<tr>
<td><strong>Molossops planirostris</strong></td>
<td>T. F. Amazonas, huge lagoon extending to ca. 2 km N Tamanao, N San Juan, Manapiare, VII-1967</td>
</tr>
<tr>
<td><strong>Noctilio labialis</strong></td>
<td>T. F. Amazonas, lagoon nr. Tamanao, ca. 4 km NE San Juan, Manapiare, 14-VII-1967</td>
</tr>
<tr>
<td><strong>Promops centralis</strong></td>
<td>Bolivar, 14 km S and 45 km E Caicara, Hato la Florida, 5-V-1967</td>
</tr>
<tr>
<td><strong>Rhinconycteris naso</strong></td>
<td>T. F. Amazonas, Tamanao, ca. 4 km NE San Juan, Manapiare, 18-VII-1967</td>
</tr>
<tr>
<td><strong>Peronotus pamelii</strong></td>
<td>Monagas, San Agustin, 3 km N and 4 km W Caribe, 1165 m elev., 26-V-1967</td>
</tr>
</tbody>
</table>

**Hesperoctenes angustatus** Ferris and Usinger

**Venezuelan Records**

Fifteen females, 9 males, 4 nymphs ex *Eumops glauinus*, T. F. Amazonas, Tamanao, 6 km NE San Juan Manapiare, 155 m elev., 17-VII-1967 (SVP 26675, 26976, 26992, 26993, 26994, 26995, 27008, 27010, 27012) and 19-VII-1967 (SVP 27723, 27995, 28576).

**Hesperoctenes sp.**

**Venezuelan Records**

Three females, 1 nymph ex *Artibeus fuliginosus* (SVP 27897); T. F. Amazonas, Rio Cumancuma, Acahama, 145 m elev., VI-1967; 2 nymphs ex *Eumops glauinus* (SVP 9512); Bolivar, 59 km SE El Dorado, 130 m elev., 17-VII-1966. (Note the first host should be regarded as a possible contamination and the second host is a field identification.)

**HOST RELATIONSHIPS AND DISTRIBUTION**

So far 16 species have been described in the genus *Hesperoctenes*. At present, the taxonomic status of *H. turvalis*, from an unknown host in Nicaragua, is not clear, since no specimens of the species have been available. Following is a summary of the distribution and host relationships of each species of *Hesperoctenes*.

*H. abalosi* was described from *Promops (?)* sp. in Argentina. No further information was available.

*H. angustatus* was originally described from British Guiana, and subsequently the species has been found on *Eumops glauinus* in Panama and Venezuela.

*H. cartus* was originally known from *Tadarida gracilis* in Brazil. Subsequently the species was collected from *Molossops cerastes* (=*M. brachyotis*) in Paraguay and from *Molossops planirostris* in Colombia, Panama, and Venezuela.

*H. chorale* was only known from *Molossops* sp. in Argentina.

*H. eumops* has been found from *Eumops perotis* (=*E. californicus*) in southern California, USA.

*H. funarius* is widely distributed in the cen-
Fig. 2. Distribution map of *Hesperoctenes* species.
tral and northern part of South America and West Indies. The known hosts of this species are as follows: Molossus ater, M. aztecus, M. boniile, M. major, M. obscurus, M. pretiosus (=M. ater), M. tropidorchynus, Molossops planirostris, Eumops brunarisis, E. trumbulli, and Promops centralis. In addition to the hosts mentioned above, specimens of this species were collected from the bulldog bat, Noctilio labialis (Noctilionidae), and Rhynchonycteris naso (Emballonuridae) in Venezuela. I assume the association of H. junius with these bats is accidental. Walker (1964) stated that “Noctilio and Molossus are often found roosting in the same trees and buildings” and “Noctilio labialis has been found in the same hollow tree as Molossus major.” From the above statement, I believe that polyctenids on Molossus move to Noctilio accidentally while they are roosting together.

H. giganteus was originally described from Eumops in Argentina, and no further information was available.

H. hermsi was collected from Tadarida macrotis (=T. molossa) in Texas (USA). As stated previously the specimens were collected from Tadarida gracilis in Venezuela. From this evidence, the species may be widely distributed in Central America and the northern part of South America.

H. impressus is known from Brazil and Paraguay. The host of this species is probably Molossops cerastes (=M. brachyphylus).

H. limai is known only from Brazil and there is no information concerning the host.

H. longiceps is known from Molossus abrasus (=Eumops auripendulus) in Guatemala and from Eumops auripendulus and E. glaucinus in Venezuela.

H. minor was originally described from Tadarida sp. in Argentina and no further collection was available.

H. parculus is only known from Glossophaga longirostris (Phyllostomatidae) in Venezuela. The host association of the species is quite unusual. Further specimens and information on the host are badly needed.

H. setosus was originally recorded from Tadarida sp. (as Nyctimene) in Venezuela. Many specimens were collected from Tadarida gracilis in Venezuela.

H. vicinus is known only from Paraguay and the probable host is Molossus rufus (=M. ater).

The distribution patterns of Hesperoctenes species are shown in Fig. 2.

Key to the Species of Hesperoctenes

1. Head on underside with a patch or row of bristles at middle of hind margin ........................................ 2
   Head on underside without bristles at middle of hind margin .......................................................... 8

2. Bristles on body very numerous and regularly placed, the pronotal disk with only a small hook-shaped bare area on either side of middle ................................................................. 3
   Bristles on body much sparser and more irregularly placed, pronotal disk with numerous bare areas ................................................................. 4

3. First segment of antennae as long as third segment. Hind margins of front femora more strongly rounded at the middle. Metasternum with a bare area on the anterior half at middle, size large. Tadarida. Texas (USA) and Venezuela. hermsi Ferris and Usinger
   First antennal segment shorter than third. Posterior or outer margins of front femora more strongly rounded basally. Metasternum entirely setose. Size small. Tadarida. Venezuela setosus Jordan

4. Head below with an irregular double row of 10-14 bristles at middle of hind margin. Molossops and Tadarida. Brazil, Colombia, Venezuela, and Paraguay curtus Jordan
   Head below with an irregular double row of 6-8 bristles at middle of hind margin .................................. 5

5. First antennal segment equal to third segment in length ........................................................................... 6
   First antennal segment unequal to third segment in length ...................................................................... 7

6. Labrum less than four times broader than long. Molossus. Paraguay vicinus Jordan
   Labrum more than four times broader than long. Molossus. Argentina chorate Ronderos

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A revision of Ferris and Usinger’s 1939 and Ronderos’ 1962 keys.
   parvulus Ferris and Usinger
Metapleurites with 8-11 long and stout bristles. *Tadarida*. Argentina .......... minor Rondeiros

8. Head at median line longer than broad at base ........................................ 9
Head at median line shorter than broad at base ........................................ 12

9. Second antennal segment less than twice as long as first. Head scarcely longer
   than broad .................................................. 10
Second antennal segment twice or more as long as first. Head distinctly longer than
   broad .................................................. 11

10. Second antennal segment more than twice as long as first. Labrum two and one-
   half times as wide as long at middle. Host unknown. Brazil .................................. 13
   limai Ferris and Usinger
Second antennal segment twice as long as first. Labrum three times as wide as long
   at middle. *Eumops*. Guatemala, Venezuela ................................................. 14
   longiceps (Waterhouse)

11. Head scarcely broader than long. Pronotum a little more than half again as long
   as broad .................................................................... 13
Head distinctly broader than long. Pronotum almost twice as broad as long ........... 14

12. Lateral margins of pronotum semiconvergent. Mesonotal lobes subquadrature. Front
   femur strongly curved at middle of posterior margin. *Eumops*. California (USA)
   ........................................................................ 8
   eumops Ferris and Usinger
Lateral margins of pronotum subparallel. Mesonotal lobes subtriangular. Front femur
   with posterior margin uniformly curved. *Eumops*. Argentina ................................ 15
giganteus Rondeiros

14. Metapleurites with 6-8 long bristles. Metasternum with bristles except at middle.
   *Molossus*. *Eumops*, *Molossops*. Central and South America and West Indies ........
   fumarius (Westwood)
Metapleurites with 10-12 bristles. Metasternum with bristles confined to the pos-
   terior and lateral margins. *Molossus*. Brazil, Paraguay ................................ impressus Horvath

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