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## A list of Venezuela chiggers, particularly of small mammalian hosts (Acarina: Trombiculidae)

James M. Brennan

*U.S. Department of Health, Education, and Welfare, Public Health Service. National Institutes of Health, National Institute of Allergy and Infectious Diseases, Rocky Mountain Laboratory, Hamilton, Montana 59840*

Jack T. Reed

*Department of Zoology, Brigham Young University, Provo, Utah 84602*

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# A LIST OF VENEZUELA CHIGGERS, PARTICULARLY OF SMALL MAMMALIAN HOSTS (ACARINA: TROMBICULIDAE)

by

James M. Brennan<sup>1</sup> and Jack T. Reed<sup>2</sup>

## ABSTRACT

Detailed or summarized records of 136 species in 38 genera with a key to the latter are provided. Of 86 described forms, 49 are new

for Venezuela; the remaining undescribed taxa are coded for purposes of this report. A classified host-parasite list is appended.

## INTRODUCTION

This report derives from a large project, "Ecology and Distribution of Mammalian Ectoparasites, Arboviruses, and their Hosts in Venezuela," supported by a U.S. Army Medical Research and Development Command contract (DA-49-193-MD-2785) with the Smithsonian Institution, directed by Dr. Charles O. Handley, Jr., Smithsonian Institution, and Lt. Col. Vernon J. Tipton, U.S. Army (retired), now Brigham Young University. Collections were made between July 1965 and August 1968.

Specifically, it is based upon an examination of some 20,000 slides and subsequent identification of 130 species of chiggers in 38 genera in Venezuela. Although a synoptic key to genera is provided and an occasional taxonomic comment offered, this is not intended to be a searching, systematic study, but rather an inventory of species, together with pertinent collecting data and abbreviated distributional records outside of Venezuela.

Although many trombiculid species were found, they represent only a fraction of the forms believed to be present. For the most part, chiggers were obtained by a method commonly used for larger ectoparasites—e.g., combing the pelage of freshly killed hosts. The enormous number of mammals to be inspected and the time involved in their preparation unfortunately precluded thorough and intensive examination for larvae occupying intradermal and intranasal niches, as well as other more or less cryptic habitats. Some species are very common and

abundant. *Eutrombicula goeldii*, for example, was identified from 4,000 larvae in 600 collections of 60 host species taken from sea level to nearly 3,500 meters in 20 major political divisions. In such cases, collecting data are condensed to a list of host species with generalized locality and seasonal information.

An asterisk immediately preceding a specific name indicates that the species recorded is new to Venezuela fauna. Undescribed species are coded. Descriptions of some of these are in press or in manuscript; others will be described as appropriate. The generic status of 9 species remains to be clarified. These have been recorded in their original genera *sensu lato* and appear at the end of the report. The generic key does not obtain for them.

Involved in the collecting of some 40,000 vertebrates, mostly mammals, and their ectoparasites were N. E. Peterson, M. D. Tuttle, A. L. Tuttle, D. B. Peacock, R. B. Peacock, F. L. Harder, J. O. Matson, F. Brown, and their assistants. Dr. Handley identified the mammalian hosts.

We are most grateful to many persons for assistance in composing this list. Particularly, we thank Alma D. Smith and Bobbi Ann Rockford for the sometimes arduous and oftentimes tedious work of accessioning collected material, preparing and labeling slides, and aiding in summarizing data, and Helen S. Donovan for typing the manuscript. Special thanks are tendered Drs. Tipton and Handley for their enabling role in this project.

<sup>1</sup>U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Institute of Allergy and Infectious Diseases, Rocky Mountain Laboratory, Hamilton, Montana 59840

<sup>2</sup>Department of Zoology, Brigham Young University Provo, Utah 84602

## Key to the Venezuela Genera

1. Leg segmentation 6-6-6, scutum with 6 setae (*Leeuwenhoekinae*) ..... 2  
 Leg segmentation 7-7-7 or 7-6-6; 3, 4, 5 or 7 setae on scutum ..... 5
2. Palpal tarsus with 4 branched setae, leg tarsus I without subterminala ..... *Albeckia*  
 Palpal tarsus with 7 branched setae, leg tarsus I with subterminala ..... 3
3. Scutum with nasus ..... *Odontacarus*  
 Scutum without nasus ..... 4
4. Cheliceral blade with dorsal and ventral rows of teeth, palpotibial claw with more than 2 prongs, spiracles and tracheae present but minute in *W. guerrerensis* .... *Whartonia*  
 Cheliceral blade with tricuspid cap only, palpotibial claw bifurcate, spiracles and tracheae absent ..... *Wagenaaria*
- 5(1). Scutum with 2 anterosubmedian setae and a nasus (*Apoloniinae*) ..... *Apolonia*  
 Scutum with 1 anteromedian seta and no nasus (*Trombiculinae*) ..... 6
6. Leg segmentation 7-6-6, sensillae expanded ..... 7  
 Leg segmentation 7-7-7, sensillae flagelliform, thickened or considerably expanded .... 11
7. Palpal tarsus with 4 branched setae, endoparasitic ..... *Intercutestrix*  
 Palpal tarsus with 5 branched setae ..... 8
8. Dorsal platelets present, posterolateral setae usually on scutum ..... *Polylopadium*  
 Dorsal platelets absent, posterolateral setae off scutum ..... 9
9. Laterosternal setae between coxae II and III ..... *Pseudoschoengastia*  
 No laterosternal setae between coxae II and III ..... 10
10. Scutum wider than long, coxa III with anteroproximal angle, 3 genualae I, 1 pair of humeral setae ..... *Vanidicus*  
 Scutum longer than wide, coxa III without anteroproximal angle, 2 genualae I, 2 pairs of humeral setae ..... *Anomalaspis*
11. Palpal tarsus with 4 branched setae, sensillae expanded ..... 12  
 Palpal tarsus with more than 4 branched setae, sensillae of various forms ..... 14
12. Coxa III multisetose, idiosomal setae differentiated, ventral setae extend into sternal area ..... *Aitkenius*  
 Coxa III unisetose, idiosomal setae undifferentiated, ventral setae do not extend into sternal area ..... 13
13. Mastitarsala III present, genuala II and III absent ..... Genus A  
 Mastitarsala III absent, genuala II and III present ..... *Quadrasetta*
- 14(II). Palpal tarsus with 5 branched setae, sensillae expanded ..... 15  
 Palpal tarsus with more than 5 branched setae, sensillae of various forms ..... 17
15. Coxae II and III multisetose, tibiala III absent, palpal tarsus without subterminala, intranasal ..... *Kymocta*  
 Coxae II and III unisetose, tibiala III present, palpal tarsus with subterminala, not intrausal ..... 16
16. Sensillae somewhat thickened to fusiform, with very long setules, microtarsala I proximad or distad of tarsala I, on bats ..... *Perissopalla*  
 Sensillae broadly expanded, with short setules, microtarsala I always proximad of tarsala I, principally on rodents ..... *Colicus*
- 17(14). Palpal tarsus with 6 branched or 6 branched and nude setae ..... 18  
 Palpal tarsus with 7 branched setae ..... 24

18. Tarsi of legs with subapical nude setae, microtarsala II distad of tarsala II, apical half of sensillae densely clothed by broad setules with tapering tips, on bats *Speleocola*  
Tarsi without subapical nude setae, microtarsala II proximad of tarsala II, sensillae expanded or flagelliform ..... 19
19. Genuae II and III absent, on bats ..... *Loomisia*  
Genuae II and III present ..... 20
20. Sensillae expanded asymmetrically ..... *Arisocerus*  
Sensillae expanded symmetrically or flagelliform ..... 21
21. Palpal tarsal setae branched, leg I without parasubterminala, sensillae flagelliform, scutum with acute posterior angle ..... *Boshkerria*  
Palpal tarsal setae branched and nude, leg I with parasubterminala, posterior angle of scutum rarely acute ..... 22
22. Sensillae nude flagelliform, palpal tibial claw bifurcate, without mastitarsala III, microsetae of legs peglike, on bats ..... *Phalcophila*  
Sensillae branched flagelliform or expanded, palpal tibial claw trifurcate or bifurcate, with mastitarsala III, microsetae of legs of usual form ..... 23
23. Anterior margin of scutum angulate, anterolateral setae of scutum marginal, sensillae expanded, cheliceral blade with accessory dorsal tooth ..... *Nasicola*  
Anterior margin of scutum not angulate, anterolateral setae of scutum submarginal, sensillae branched flagelliform or somewhat expanded, cheliceral blade without accessory dorsal tooth ..... *Microtrombicula*
- 24(17). Palpal tarsus without subterminala, microtarsala I laterad of and nearly contiguous with tarsala I, with mastitibiala III ..... *Atelepalm*  
Palpal tarsus with subterminala, microtarsala I distad of tarsala I, without mastitibiala III except in some species of *Eutrombicula* ..... 25
25. Sensillae expanded ..... 26  
Sensillae flagelliform ..... 27
26. Scutum with pattern of striae on posterior half, cheliceral blade without accessory dorsal tooth, on birds ..... *Neoschoengastia*  
Scutum without striae, cheliceral blade with accessory dorsal tooth, intranasal on mammals ..... *Rhinibius*
- 27(25). Palpal tibial claw single pronged, a mastitarsala III ..... *Crotiscus*  
Palpal tibial claw bifurcate or trifurcate, mastitarsala III present or absent ..... 28
28. Scutum with 7 setae ..... *Hoffmannina*  
Scutum with 5 setae ..... 29
29. Cheliceral blade with subapical series of ventral teeth ..... 30  
Cheliceral blade with tricuspid cap ..... 31
30. Cheliceral blade with subapical multiserrate hood, posterior margin of scutum with median tip ..... *Beamerella*  
Cheliceral blade with few subapical teeth, posterior margin of scutum lacking median tip ..... *Hooperella*
- 31(29). Posterolateral setae off scutum, palpal tibial claw deeply cleft, eyes punctate, anterolateral scutal setae far posterior to margin, on bats ..... *Nycterinastes*  
Posterolateral setae on scutum, palpal tibial claw trifurcate or bifurcate, eyes impunctate, anterolateral scutal setae may be submarginal but never far posterior ..... 32
32. Palpal tibial claw bifurcate, the accessory prong inner and ventral ..... *Eutrombicula*  
Palpal tibial claw trifurcate or if bifurcate, the accessory prong outer and dorsal ..... 33

33. Scutum subcordate, projected posteriorly, the widely separated sensillae and setae in anterior third, palpal tibial claw bifurcate ..... *Buclypeus*  
Scutum and vestiture otherwise, palpal tibial claw bifurcate or trifurcate ..... 34
34. Eyes in scutum ..... *Peltoculus*  
Eyes not in scutum ..... 35
35. Telofemur III with 4 setae; palpal femoral, genual and tibial setae nude; no mastitarsala III; anterolateral setae of scutum marginal ..... *Chiroptella*  
Telofemur III with 3 setae, palpal setae otherwise, mastitarsala III present except in some *Parasecia* species, anterolateral setae of scutum submarginal ..... 36
36. Scutum subpentagonal, on birds ..... *Blankaertia*  
Scutum subrectangular with sinuous margins ..... *Parasecia*

#### Genus *Aitkenius* Brennan, 1970

Type species: *Euschöngastia cunctata* Brennan and Jones, 1961

#### *Aitkenius ciscunctatus* Brennan and Reed

*Aitkenius ciscunctatus* Brennan and Reed, 1973a, p. 532.

No records except those of the original description: 52 larvae off *Zygodontomys brevicauda*, *Nectomys squanipes*, and *Proechimys semispinosus*, Amazonas.

#### *Aitkenius hystricosus* Brennan and Reed

*Aitkenius hystricosus* Brennan and Reed, 1973a, p. 532.

Described from 1 specimen off *Proechimys semispinosus*, Apure. No further records.

#### *Aitkenius senticosus* Brennan and Reed

*Aitkenius senticosus* Brennan and Reed, 1973a, p. 532.

Known only from material of the original description: 11 larvae off *Oryzomys minutus*, *O. albigularis*, and *Thomasomys hylophilus*, Táchira.

#### Genus *Albeckia* Vercammen-Grandjean and Watkins, 1966

Type species: *Albeckia albecki* Vercammen-Grandjean and Watkins, 1966

#### *Albeckia albecki* Vercammen-Grandjean and Watkins

*Albeckia albecki* Vercammen-Grandjean and Watkins, 1966, p. 74.

One larva off *Eptesicus montosus*, Distrito Federal, 4 km NNW Caracas (Los Venados), 1559 m, 25 Jul 1965; 7 off *Histiopus* sp. A., D., F., 5 km NNE Caracas (Pico Avila), 2101 m, 23 Aug 1965.

These Venezuela data, as recorded by Reed and Brennan (1975), constitute the only additional records since *A. albecki* was described from 40 larvae off 2 bats (*Antrozous pallidus pacificus*) Solano Co., California.

#### Genus *Anomalaspis* Brennan, 1952

Type species: *Anomalaspis ambiguus* Brennan, 1952

#### *Anomalaspis ambigua* Brennan

*Anomalaspis ambiguus* Brennan, 1952, p. 143.

Two larvae off *Heteromys anomalus*, Miranda, 33 km WSW Caracas (Alto No León), 1962 m, 24 May 1967.

Described from a single larva off *H. anomalus*, Aragua. Brennan (1971) recorded another larva off *H. anomalus*, Distrito Federal, 25 Aug 1965. Despite extensive collecting in Venezuela and elsewhere in the Neotropical region, these data provide the only records of *A. ambigua* in more than 20 years.

#### Genus *Apolonia* Torres and Braga, 1938

Type species: *Apolonia tigipioensis* Torres and Braga, 1938

#### \**Apolonia tigipioensis* Torres and Braga

*Apolonia tigipioensis* Torres and Braga, 1938, p. 171.

Ten larvae off *Leptonycteris curasoae*, Falcón, Peninsula de Paraguaná, 25 km SW Pueblo Nuevo (Yabuquiva), 13 m, 17 July 1968; 28 off *Sylvilagus floridanus*, Falcón, Capatárida, 40 m, 20 Jun to 1 Jul 1968; 233 off 28 *S. floridanus*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Moruy), 45-55 m, 11-17 Jul 1968; 6 off *S. floridanus*, Guárico, 16 km NW Barbacoas, 228 m, 2 Mar 1966; 4 off *S. floridanus*,



Nueva Esparta, 36 km W Porlamar, 10 m, 30 Jan 1967; 1 off *Mus musculus*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Moruy), 55 m, 15 Jul 1968.

The above are new host and locality records for this peculiar species described from Pernambuco, Brazil, off domestic chicken, where the singly encapsulated larvae produce nodular lesions basally in the quills of developing feathers of chicks. Siqueira (1949) reports a human case involving *A. tigipioensis*.

#### Genus *Arisocerus* Brennan, 1970

Type species: *Arisocerus amapensis* Brennan, 1970

##### \**Arisocerus amapensis* Brennan

*Arisocerus amapensis* Brennan, 1970a, p. 32.

One larva off *Proechimys guyannensis*, Bolívar, 45 km NE Icabarú (Santa Lucía de Surukun), 851 m, 15 May 1968.

No other records beyond those of the original description: type series off *Oryzomys macconnelli*, Apapá, Brazil, and numerous larvae off *O. capito* and *Proechimys guyannensis*, northern Brazil; 3 off *O. laticeps* and 1 off *Myoprocta acouchy*, Surinam.

#### Genus *Atelepalm* Brennan and Reed, 1973

Type species: *Atelepalm smaragdina* Brennan and Reed, 1973

##### *Atelepalm smaragdina* Brennan and Reed

*Atelepalm smaragdina* Brennan and Reed, 1973b, p. 706.

No records other than those of the original description: 6 larvae off *Zygodontomys brevicauda* from Guárico and Bolívar.

##### *Atelepalm* sp. A

Six larvae off *Marmosa robinsoni*, 60 off 15 *Sylvilagus floridanus*, and 5 off *Calomys hummelinckii*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Moruy), 45-90 m, 8 to 30 Jul 1968.

#### Genus *Beamerella* Brennan, 1958

Type species: *Beamerella acutascuta* Brennan, 1958

##### \**Beamerella acutascuta* Brennan

*Beamerella acutascuta* Brennan, 1958, p. 72.

One larva off unidentified lizard, Bolívar, 20 km W La Paragua (Hato San Jose), 298 m,

28 Mar 1967; 2 off *Saccopteryx bilineata*, Amazonas, 163 km ESE Puerto Ayacucho (San Juan), Río Manapiare, 155 m, 21 Jul 1967; 5 off *S. bilineata*, Trujillo, 23 km N Valera (Agua Viva), 164 m, 30 Aug 1965; 2 off *Micronycteris megalotis*, Apure, 46 km NE Puerto Páez (Hato Cariben), Río Cinaruco, 76 m, 14 Dec 1965; 1 off *Mimon crenulatum*, Apure, 29 km SSW Santo Domingo (Nulita), 24 m, 22 Jan 1968; 11 off 2 *Phyllostomus discolor*, Trujillo, 25 km NW Valera (Agua Santa), 90 m, 18-22 Oct 1965; 1 off *P. discolor*, Amazonas, 108 km SSE Esmeralda, Río Mavaca, 140 m, 14 Apr 1967; 4 off *P. discolor*, Miranda, 60 km E Caracas (Birongo), 60 m, 23 Jan 1968; 1 off *Trachops cirrhosus*, Amazonas, 84 km SSE Esmeralda (Boca Mavaca), 138 m, 20 Feb 1966; 12 off *Carollia perspicillata*, Miranda, 1 km S Río Chico, 1 m, 26 Oct 1966; 6 off *Artibeus jamaicensis*, Trujillo, 23 km N Valera (Agua Viva), 164 m, 1 Sep 1965; 1 off *A. jamaicensis*, Trujillo, 25 km NW Valera (Agua Santa), 90 m, 7 Sep 1965; 10 off *A. jamaicensis*, Zulia, 33 km NW La Paz (Nr. Cerro Azul), 75 m, 14 Jun 1968; 1 off *Desmodus rotundus*, Guárico, 10 km NE Altigracia (Hacienda Elvira), 630 m, 16 Sep 1966; 2 off *Molossus ater*, Apure, Puerto Páez, 76 m, 17 Jan 1966.

Described from *Chilonycteris rubiginosa* and *Carollia perspicillata*, Trinidad, this bat chigger has been recorded from *Mimon crenulatum*, *Micronycteris xenotenes*, and *Saccopteryx* sp., Trinidad (Brennan and Jones, 1960); *Micronycteris megalotis*, *S. bilineata*, and *C. perspicillata*, Panama (Brennan and Yunker, 1966) *Trachops cirrhosus*, Bolivia (Brennan, 1970b).

##### *Beamerella* sp. A.

Five larvae off *Molossus aztecus*, Bolívar, 47 km ESE Caicara (Hato La Florida), 50 m, 19 Apr 1967; 1 off *M. sinaloae*, Yaracuy, 10 km NW Urama, 25 m, 8 Mar 1966.

#### Genus *Blankaartia* Oudemans, 1911

Type species: *Trombidium niloticum* Trägårdh, 1905

##### \**Blankaartia sinnamaryi* (Floch and Fauran)

*Trombicula* (Trägårdula)! *sinnamaryi* Floch and Fauran, 1956, p. 3.

Six larvae off unidentified bird and owl, Bolívar, 20 km W La Paragua (Hato San Jose), 300 m, 6 Apr 1967; 1 off unidentified bird, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Cerro Santa Ana), 565 m, 1 Aug 1968; 2 off owl, Yaracuy, 20 km NW San Felipe (Mi-

nas de Aroa), 395 m, 13 Dec 1967; 15 off 2 capybara (*Hydrochaeris hydrochaeris*), Monagas, 54 km S Maturín (Hato de Bejuco), 18 m, 8 Jun 1968.

The holotype larva of this bird chigger was taken unengorged from flooded plains in French Guiana; 2 others presumably from bird and another off parakeet comprise the "type series." Brennan (1953) recorded the species as *Trombicula* sp. off *Myadestes genibarbis*, Jamaica; many larvae from numerous bird species and a reptile were recorded by Brennan and Jones (1960) from Trinidad, and (1961a) off *Thryothorus genibarbis*, Peru; Brennan and Yunker (1966) identified several hundred larvae from 26 species of birds and a bat in Panama. The only records of the Neotropical *B. sinnamaryi* for the United States are 2 larvae off *Dumetella carolinensis* and 1 off *Hyllocichla mustelina*, Cameron Co., Texas (Brennan, 1965).

#### Genus *Boshkerria* Fauran, 1959

Type species: *Boshkerria tuberculata* Fauran, 1959

##### \**Boshkerria punctata* (Boshell and Kerr)

*Trombicula punctata* Boshell and Kerr, 1942, p. 15 (reprint).

One larva off *Carollia perspicillata*, Falcón, 14 km ENE Mirimire (La Pastora), 122 m, 11 Nov 1967; 23 off 4 *Heteromys anomalus*, Sucre, 26 km ESE Carúpano (Manacal), 190-575 m, 27 Jul to 1 Aug 1967; 1 off *Zygodontomys brevicauda*, Falcón, 80 km NW Carora (Río Socopo), 480 m, 20 May 1968; 7 off *Z. brevicauda*, Trujillo, 30 km NW Valera (El Dividive), 90 m, 5 Oct 1965; 1 off *Z. brevicauda*, Zulía, 40 km NW La Paz (nr. Cerro Azul), 80 m, 9 Jun 1968; 1 off *Agouti paca*, Monagas, 54 km S Maturín (Hato de Bejuco), 18 m, 9 Jun 1968; 2 off *Proechimys guyanensis*, Amazonas, 163 km ESE Puerto Ayacucho (San Juan, Río Manapiare), 155 m, 11 Jul 1967; 2 off *P. semispinosus*, Falcón, 80 km NW Carora (Río Socopo), 470 m, 23 May 1968; 7 off *P. semispinosus*, Sucre, 26 km ESE Carúpano (Manacal), 26 Jul 1967; 1 off *P. semispinosus*, Trujillo, 48 km WNW Valera (La Ceiba), 27 m, 5 Nov 1965.

Other records since described off *Cuniculus paca*, Colombia, are: 1 larva off *Proechimys guyanensis*, Trinidad (Brennan and Jones, 1960); 1 off *Orozomys keaysi*, Peru (Brennan and Jones, 1961a); 22 off 2 *Hoplomys gymnurus*, Panamá (Brennan and Yunker, 1966); 1 off *Dasyprocta* sp., Surinam (Brennan, 1970a).

#### Genus *Buclypeus* Brennan, 1972

Type species: *Trombicula ignota* Brennan, 1971

##### *Buclypeus daptops* Brennan

*Buclypeus daptops* Brennan, 1972b, p. 1179.

Described from 13 larvae off 6 *Proechimys guyanensis*, Amazonas.

New records are: 2 off *Proechimys semisponosus*, Amazonas, 68 km SSE Esmeralda (10 km up Río Mavaca from Boca Mavaca), 138 m, 17 Mar 1967; 1 off *P. guyanensis*, same locality and date; 1 off *P. guyanensis* Amazonas, Belén (Río Cunucunuma), 150 m, 2 Jan 1967.

#### Genus *Chiroptella* Verecammen-Grandjean, 1960

Type species: *Trombicula insolli* Philip and Traub, 1950

##### \**Chiroptella (Oudemansidium) australis* (Brennan)

*Leptotrombidium australis* Brennan, 1970b, p. 810.

One specimen off *Tadarida gracilis*, Amazonas, 56 km NNW Esmeralda (Belén, Río Cunucunuma), 150 m, 13 Jan 1967.

First record since described from numerous larvae off several bats (*Tadarida latucaudata*) from Rondônia, Brazil.

#### Genus *Colicus* Brennan, 1970

Type species: *Colicus icomi* Brennan, 1970

##### \**Colicus colombiae* (Boshell and Kerr)

*Neoschongastia colombiae* (in part), Boshell and Kerr, 1942, p. 16 (reprint).

Ten larvae off *Monodelphis brevicaudata*, Amazonas, 32 km SSE Puerto Ayacucho (Raya), 135 m, 11 Sep 1967; 1 off *Sigmomys alstoni*, Bolívar, 46 km NE Icabará, 15 May 1968.

Other records since described off *Proechimys chrysacolus*, Colombia, are: 15 larvae off *Proechimys* sp., *P. chrysacolus*, *Dasyprocta* sp., and *Myoprocta* sp., Colombia (Brennan, 1970c).

##### \**Colicus johnsoni* (Yunker and Brennan)

*Euschoengastia johnsoni* Yunker and Brennan, 1964, p. 194.

Ten larvae off *Didelphis marsupialis* and 1 off *Echimys armatus*, Amazonas, 84 km SSE Esmeralda, (Boca Mavaca), 138 m, 17-20 Mar 1967.

Described off *Calomys callosus* and *Pro-*

*echinmys guyanensis*, Bolivia; also recorded by Brennan (1970b) off *Oryzomys capito* and *Proechinmys* sp., Bolivian-Brazilian border.

\**Colicus pichindensis* (Brennan)

*Euschoengastia pichindensis* Brennan, 1968a, p. 682.

Three larvae off 2 *Oryzomys albigularis*, Miranda, 3 km NE Caracas (Quebrada Chacaito), 1150-1170 m, 17-18 May 1967; 1 off *O. albigularis*, Aragua, 13 km NW Maracay (Rancho Grande Equestrian Station), 1050 m, 9 Aug 1965; 1 off *Sigmodon hispidus*, Barinas, Altamira, 697 m, 22 Dec 1967.

First records since described off *Oryzomys caliginosus*, Colombia.

*Colicus* sp. A

Eight larvae off 3 *Akodon urichi*, Falcón 84 km NW Carora (Cerro Socopo), 1260 m, 13-18 May 1968; 1 off *Oryzomys albigularis*, Miranda, 5 km NNW Guarenas (Curupao), 1160 m, 10 Oct 1966.

*Colicus* sp. B

Nine larvae off *Dasyprocta fuliginosa*, Amazonas, 163 km ESE Puerto Ayacucho (San Juan, Río Manapiare), 155 m, 7 Jul 1967; 1 off *Monodelphis brevicaudata*, Zulia, 21 km SW Machiques (Kasmera), 270 m, 20 Apr 1968.

*Colicus* sp. C

Five larvae off *Proechinmys guyanensis*, Amazonas, Tamatama, Río Orinoco, 135 m, 21 May 1967; 1 off *P. guyanensis*, Amazonas, 56 km NNW Esmeralda (Belén, Río Cunucunuma), 150 m, 3 Jan 1967.

Genus *Crotiscus* Ewing, 1944

Type species: *Trombicula desdentata* Boshell and Kerr, 1942

*Crotiscus desdentatus* (Boshell and Kerr)

*Trombicula desdentata* Boshell and Kerr, 1942, p. 11 (reprint).

About 140 larvae identified from 32 collections. Opossums: 1 *Marmosa fuscata*, 2 *Philander opossum*. Bats: 1 *Vampyrops helleri*, 1 *Vampyressa pusilla*, 1 *Promops nasutus*. Rodents: 1 *Sciurus aestuans*, 2 *S. granatensis*, 2 *Heteromys anomalus*, 2 *Thomasomys lugens*, 5 *Oryzomys albigularis*, 1 *O. minutus*, 1 *Oryzomys* sp., 1 *Nectomys alfar*, 1 *N. squamipes*, 1 *Zygodon-*

*tomys brevicauda*, 3 *Rattus rattus*, 5 *P. semispinosus*, 1 *Echinmys armatus*.

Apure, 24 m, Jan 1968; Aragua, 1050 m, Aug 1965; Carabobo, 1513-1810 m, Nov 1967 and Aug 1968; Falcón, 25-470 m, Oct 1965 and May 1968; Distrito Federal, 1780 m, Dec. 1965; Mérida, 2040-2630 m, Apr and May 1966; Monagas, 1010 m, Jul 1967; Táchira, 2380 m, Mar 1968; Amazonas, 130-1400 m, Feb to Jul 1967; Trujillo, 90-2350 m, Oct 1965 and Jan 1966; Zulia, 37-1135 m, Mar and May 1968.

Numerous specimens of this common Neotropical species, described off *Proechinmys chrysaeolus*, Colombia, are recorded also from various mammalian hosts elsewhere in Colombia and Venezuela as well as Trinidad and Panamá (Brennan, 1957 and 1968a, Brennan and Jones, 1960, Brennan and Yunker, 1966).

*Crotiscus* sp. A

About 650 larvae identified from 116 collections. One bird, unidentified. Opossums: 1 *Marmosa dryas*, 5 *M. impavida*, 1 *M. robinsoni*, 1 *Didelphis azarae*, 2 *Caenolestes obscurus*. Insectivore: 5 *Cryptotis thomasi*. Rodents: 1 *Sciurus granatensis*, 1 *Heteromys anomalus*, 11 *Oryzomys albigularis*, 6 *O. fulvescens*, 31 *O. minutus*, 8 *Rhipidomys venustus*, 37 *Thomasomys hylophilus*, 5 *Akodon bogotensis*.

Guárico, 181 m, Jan 1968; Táchira, 2355-2455 m, Mar 1968; Zulia, 37-54 m, Mar and Apr 1968.

Genus *Eutrombicula* Ewing, 1938

Type species: *Microtrombidium alfreddugesi* Oudemans, 1910

This medically important genus is represented in Venezuela by 22 species, of which 16 are new. Inasmuch as the group has been detailed separately by Brennan and Reed (1974), particulars of collecting data are omitted here.

*Eutrombicula alfreddugesi* (Oudemans)

*Microtrombidium alfreddugesi* Oudemans, 1910, p. 84.

More than 600 larvae from 123 collections of reptiles, marsupials, rodents, a lagomorph, and an anteater—taken throughout Venezuela at elevations from sea level to 1100 m, at all seasons.

*Eutrombicula batatas* (Linnaeus)

*Acarus batatas* Linnaeus, 1758, p. 617.

More than 800 larvae from 157 collections of marsupials, bats, rodents, lagomorphs, a lizard,



and a bird—with much the same distributional pattern as *E. alfreddugesi*.

*Eutrombicula cricetivora* Brennan and Reed

*Eutrombicula cricetivora* Brennan and Reed, 1974, p. 700.

Common on cricetid rodents at high elevations, 2200-3400 m, in western Venezuela (Cordillera de Mérida), Jan to Apr.

*Eutrombicula goeldii* (Oudemans)

*Microthrombidium goeldii* Oudemans, 1910, p. 84.

Taken more commonly and abundantly than any other chigger in Venezuela. About 4,000 larvae from 608 collections including a frog, lizards, birds, numerous marsupials and rodents, bats, a shrew, a tapir, and brocket deer—throughout Venezuela from sea level to over 3500 m at all seasons.

*Eutrombicula jenkinsi* Brennan and Reed

*Eutrombicula jenkinsi* Brennan and Reed, 1974, p. 700.

Seven larvae off cricetids, Mérida and Trujillo, 2225-3170 m, Jan and Mar.

*Eutrombicula leegoffi* Brennan and Reed

*Eutrombicula leegoffi* Brennan and Reed, 1974, p. 702.

Taken from cricetid rodents and marsupials, Mérida and Trujillo, 2225-3300 m, Jan and Feb.

*Eutrombicula longiseta* Brennan and Reed

*Eutrombicula longiseta* Brennan and Reed, 1974, p. 702.

Three larvae off cricetid rodents, Mérida, 2630 m, Apr.

*Eutrombicula lukoschusi* Brennan and Reed

*Eutrombicula lukoschusi* Brennan and Reed, 1974, p. 702.

Taken from cricetids and a marsupial, Táchira, 2385 m, Mar.

*Eutrombicula marmosa* Brennan and Reed

*Eutrombicula marmosa* Brennan and Reed, 1974, p. 703.

Fifteen larvae off marsupial and cricetid rodent, Distrito Federal, 1750-1975 m, May and Dec.

*Eutrombicula nadchatrami* Brennan and Reed

*Eutrombicula nadchatrami* Brennan and Reed, 1974, p. 703.

Five larvae off rodents and bat, Distrito Federal and Trujillo, 90-2165 m, Aug, Oct, and Dec.

*Eutrombicula neotropicalis* Brennan and Reed

*Eutrombicula neotropicalis* Brennan and Reed, 1974, p. 704.

Taken principally from cricetid rodents at high elevations, 2350-3300 m, in western Venezuela, Jan to Apr, and Aug.

\**Eutrombicula pacae* (Floch and Fauran)

*Trombicula* (*Eutrombicula*) *pacae* Floch and Fauran, 1957, p. 1.

Eleven larvae off marsupials, a bat, and rodents taken in Amazonas, Miranda, Monagas, Nueva Esparta, Trujillo, and Yaracuy, at elevations from sea level to 2200 m in months of Jan, Feb, Jun, and Oct.

*Eutrombicula spipi* Brennan and Reed

*Eutrombicula spipi* Brennan and Reed, 1974, p. 705.

Fairly common on echimyd rodents, also off a marsupial and bat, Amazonas, Bolívar and Monagas, 138-1329 m, Mar, Apr, and Jul.

*Eutrombicula tachirae* Brennan and Reed

*Eutrombicula tachirae* Brennan and Reed, 1974, p. 705.

Common on cricetid rodents, Táchira and Trujillo, 2220-2386 m, Jan and Mar.

*Eutrombicula tanychaeta* Brennan and Reed

*Eutrombicula tanychaeta* Brennan and Reed, 1974, p. 706.

Three larvae off marsupial, Mérida, 3155 m, Mar.

\**Eutrombicula tinami* (Oudemans)

*Microthrombidium tinami* Oudemans, 1910, p. 84.

Nineteen larvae off marsupials and rodents from Guárico and Bolívar, 150 to 335 m, Jan and Apr.

*Eutrombicula tropica* (Ewing)

*Trombicula irritans* var. *tropica* Ewing, 1925, p. 258.

Over 200 larvae from 54 collections of lizards, marsupials, rodents, a bat, and a monkey—throughout much of Venezuela (12 states) from sea level to 1100 m, at all seasons.

*Eutrombicula vacillata* Brennan and Reed

*Eutrombicula vacillata* Brennan and Reed, 1974, p. 707.

Five larvae off marsupial, Mérida, 3265 m, Feb.

*Eutrombicula variabilis* Brennan and Reed

*Eutrombicula natchatrami* Brennan and Reed, 1974, p. 707.

From rodents, shrews, and bats, Apure and Mérida, 75-2040 m, Jan, May, and Dec.

*Eutrombicula venezuelensis* Brennan and Reed

*Eutrombicula venezuelensis* Brennan and Reed, 1974, p. 707.

Fifteen larvae off cricetid rodents, Mérida, 3150-3430 m, Mar.

*Eutrombicula webbi* Brennan and Reed

*Eutrombicula webbi* Brennan and Reed, 1974, p. 708.

Numerous larvae, principally off cricetid rodents in western Venezuela (Cordillera de Mérida), 90-3200 m, Jan to May, and Oct.

*Eutrombicula wolfenbarger* Brennan and Reed

*Eutrombicula wolfenbarger* Brennan and Reed, 1974, p. 709.

Taken principally from shrew, also opossum and cricetids, Mérida, 3155-3545 m, Mar.

Genus *Hoffmannina* Brennan and Jones, 1959

Type species: *Novotrombicula suriana* Hoffmann, 1954

*Hoffmannina reedi* Brennan

*Hoffmannina reedi* Brennan, 1972a, p. 16.

This species was described from Trujillo, Venezuela, off *Marmosa fuscata* and *Thomasomys laniger*. New Venezuela records are: 2 larvae off *Oryzomys minutus*, Trujillo, 15 km E Trujillo (Hacienda Misísí), 2360 m, 29 Jan 1966; 10 off 3 *Thomasomys lugens*, 14 km E Trujillo (Hacienda Misísí), 2210-2225 m, 27 and 29 Jan 1966; 2 off *T. lugens*, Mérida, 6 km SE Tabay, 2590 m, 11 Apr 1966.

*Hoffmannina* sp. A

One larva off *Neoplatymops mattogrossensis*, Bolívar, 28 km SE Manteco (Los Patos), 150 m, 11 Apr 1966; 7 off 3 *Cryptotis thomasi*, Mérida, 8 km SE Tabay (La Coromoto), 3160-3175 m,

13-21 Mar 1966; 4 off 2 *C. thomasi*, 10 km SE Tabay (Laguna Verde), 3533-3545 m, 20-21 Mar 1966; 3 off 3 *Oryzomys minutus*, 9-10 km SE Tabay (La Coromoto), 3310-3410 m, 15-18 Mar 1966; 5 off 5 *T. laniger*, 7 km SE Tabay (La Coromoto), 3170-3185 m, 11-15 Mar 1966; 1 off *Dasyprocta* sp., Carabobo, 2 km ENE Montalbán (Hacienda Montero), 598 m, 6 Nov 1967.

*Hoffmannina* sp. B

Nine larvae off *Rhipidomys macconnelli*, Amazonas, 50 km NNW Esmeralda (Cerro Duida, Caño Culebra), 825 m, 19 Jan 1967; 2 off *Daptomys venezuelae*, Amazonas, 32 km NW Esmeralda (Cerro Duida, Cabecera del Caño Negro), 1400 m, 15 Feb 1967.

Genus *Hooperella* Vercammen-Grandjean, 1967

Type species: *Tecomatlana* (*Hooperella*) *spinirostra* Vercammen-Grandjean, 1967

\**Hooperella saccopteryx* (Brennan and Jones)

*Trombicula saccopteryx* Brennan and Jones, 1960, p. 530.

Some 900 larvae identified from 107 lots. Bats: 86 *Saccopteryx bilineata*, 2 *S. leptura*, 2 *Saccopteryx* sp., 1 *Cornura brevirostris*, 5 *Peropteryx kappleri*, 4 *P. macrotis*, 1 *Mimon crenulatum*, 1 *Carollia brevicauda*, 1 *Desmodus rotundus*, 1 *Molossus ater*. Rodents: 1 *Signomys alstoni*, 1 *Rattus rattus*, 2 *Proechimys guyanensis*.

Apure, 76 m, Feb 1966; Bolívar, 150 m, Apr 1966 and 1967; Carabobo, 701-1537 m, Jan 1966 and Nov 1967; Falcón, 2-140 m, Sep 1965 and Nov 1967; Amazonas, 135-155 m, Jan to Oct 1967; Miranda, 1-730 m, Jan, Sep, and Nov, 1966, Jan 1968; Sucre, 1-200 m, Jun and Jul 1967; Trujillo, 90-164 m, Aug and Sep 1965; Yaracuy, 2-395 m, Sep and Nov 1965, Dec 1967; Zulia, 75-80 m, Jun 1968.

This bat chigger, described from numerous larvae off *Saccopteryx bilineata* and 1 off *Desmodus rotundus*, Trinidad, has been commonly recorded off *S. bilineata* in Peru, Surinam, Panamá, and Yucatán (Brennan, 1970a, Brennan and Jones, 1961a, Brennan and Yunker, 1966, Loomis, 1969), and a single larva off *Peropteryx macrotis*, Bolivia (Brennan, 1970b). New records: 25 larvae off *Saccopteryx bilineata*, Guatemala, Alta Verapaz, Chinaja, 180 m, 27 Feb 1960, J. Knox Jones; 9 off *S. bilineata* and 10 off *Rhynchonycteris naso*, Colombia, Antioquia, Chigorodo, Río León, 6 Apr 1966, C. J. Marinkelle.

\**Hooperella vesperuginis* (Brennan and Jones)

*Trombicula vesperuginis* Brennan and Jones, 1960, p. 533.

About 760 larvae identified from 155 collections. One bird, unidentified. Opossum: 1 *Marmosa robinsoni*. Bats: 3 *Saccopteryx bilineata*, 7 *Peropteryx kappleri*, 2 *Pteronotus parnellii*, 1 *Micronycteris hirsuta*, 2 *M. megalotis*, 3 *M. microtis*, 1 *M. nicefori*, 3 *Phyllostomus discolor*, 5 *P. elongatus*, 1 *P. hastatus*, 1 *Phylloderma stenops*, 2 *Trachops cirrhosus*, 7 *Chrotopterus auritus*, 1 *Glossophaga longirostris*, 8 *G. soricina*, 1 *Lionycteris spurrelli*, 1 *Carollia brevicauda*, 57 *C. perspicillata*, 1 *Sturnira erythromos*, 1 *S. tilidae*, 1 *Chiroderma villosum*, 17 *Artibeus jamaicensis*, 18 *Desmodus rotundus*, 4 *Molossus ater*. Rodent: 1 *Echimyus armatus*.

Apure, 24 m, Jan and Feb 1968; Barinas, 620 m, Dec 1967; Bolívar, 50-1032 m, Mar to Jun 1966, Mar to May 1967, May 1968; Carabobo, 701-1810 m, Nov 1967; Distrito Federal, 380-1524 m, Jul 1965, Aug 1966, Jul 1967; Falcón, 25-230 m, Oct and Nov 1965, and Nov 1967; Guárico, 181-630 m, Sep 1966, Jan 1968; Miranda, 0-1160 m, Jan 1968, Oct and Nov 1966; Monagas, 854 m, Jul 1967; Sucre, 0-575 m, Dec 1966, Jun to Nov 1967; Amazonas, 135-155 m, Mar to Oct 1967; Trujillo, 90-164 m, Aug to Oct 1965; Yaracuy, 2-25 m, Sep to Nov 1965; Zulia, 24-1135 m, Mar to Jun 1968.

*H. vesperuginis*, another common bat chigger, exhibiting less host preference than *H. saccopteryx*, was also described from Trinidad, holotype off *Artibeus jamaicensis*, numerous larvae off *Desmodus rotundus*, and several off *Carollia perspicillata*, *Micronycteris hirsuta*, *M. megalotis*, *Vampyrus spectrum* and *Saccopteryx bilineata*. Recorded also from Bolivia off *C. subrufa*, *D. rotundus*, and *Trachops cirrhosus* (Brennan, 1970b); Panamá off *C. perspicillata*, *Glossophaga soricina*, and *V. spectrum* (Brennan and Yunker, 1966); Trinidad off *C. perspicillata* (Brennan, 1967); Yucatán off *Artibeus jamaicensis* (Lomnis, 1969).

Genus *Intercutestrix* Brennan and Yunker, 1966

Type species: *Euschongastia tryssa* Brennan and Jones, 1961

*Intercutestrix exigua* Brennan and Reed

*Intercutestrix exigua* Brennan and Reed, 1974, p. 187.

No further records than those of the original description: off *Proechimys semispinosus*, Barinas, and *Signodon hispidus*, Carabobo.

*Intercutestrix mondolfii* Brennan and Yunker

*Intercutestrix mondolfii* Brennan and Yunker, 1969, p. 299.

Recorded by Brennan and Yunker (1969) from Venezuela: 48 larvae off 7 *Proechimys guyannensis*, Bolívar. No other records.

*Intercutestrix pisinna* Brennan and Reed

*Intercutestrix pisinna* Brennan and Reed, 1974, p. 187.

Known only from the original description: 2 larvae off *Proechimys guyannensis*, Amazonas.

Genus *Kymocta* Yunker and Brennan, 1962

Type species: *Doloisia (Kymocta) teratarsalis* Yunker and Brennan, 1962

*Kymocta faitkeni* Brennan

*Kymocta faitkeni* Brennan, 1968b, p. 614.

This species, described from northern Brazil off *Oryzomys capito*, was first reported in Venezuela by Brennan and Yunker (1969) off *Monodelphis brevicaudata* and *Rhipidomys* sp., Bolívar, and later by Brennan and van Bronswijk (1973) off *Rhipidomys macconnelli*, Amazonas. No additional records.

*Kymocta inca* (Brennan and Jones)

*Doloisia inca* Brennan and Jones, 1961a, p. 177.

Described from Peru off *Oryzomys keaysi*. Venezuela records are those of Brennan and Yunker (1969): off *Neacomys tenuipes*, *Sigmonys alstoni* and *Rhipidomys* sp., Bolívar, also Brennan and van Bronswijk (1973): from Amazonas off *Rhipidomys macconnelli* and *Akodon urichi*.

*Kymocta zulia* Brennan and van Bronswijk

*Kymocta zulia* Brennan and van Bronswijk, 1973, p. 451.

No records other than those of the original description: 37 larvae off 4 *Heteromys anomalus*, Zulia.

Genus *Loomisia* Brennan and Reed, 1972

Type species: *Euschongastia desmodus* Brennan and Dalmat, 1960

*Loomisia alcithoae* Brennan and Reed

*Loomisia alcithoae* Brennan and Reed, 1972a, p. 797.

This species was based only on the type series of 3 larvae off *Carollia brevicauda*, Bari-

nas. An additional record is 1 larva off *C. perspicillata*, Trujillo, 19 km N Valera (nr. Agua Viva), 164 m, 6 Oct 1965.

*Loomisia bulbocalcar* Brennan and Reed

*Loomisia bulbocalcar* Brennan and Reed, 1972a, p. 798.

No records other than those of the original description: 96 larvae off bats, *Peropteryx kappleri* and *P. macrotis*, and 3 off opossum, *Mono delphis brevicaudata*, from Carabobo and Yaracuy.

*Loomisia desmodus* (Brennan and Dalmat)

*Euschongastia desmodus* Brennan and Dalmat, 1960, p. 188.

Venezuela data reported by Brennan and Reed (1972a) and additional records are summarized: 182 larvae from 68 bats of 15 species including *Anoura* sp., *Carollia brevicauda*, *C. perspicillata*, *Chrotopterus auritus*, *Desmodus rotundus*, *Glossophaga longirostris*, *G. soricina*, *Lonchophylla robusta*, *Micronycteris megalotis*, *Peropteryx kappleri*, *P. macrotis*, *Saccopteryx bilineata*, *Sturnira lilium*, *Trachops cirrhosus*, *Vampyressa pusilla*, and 1 larva off unidentified bird.

Apure, 24 m, 23-25 Jan 1968; Aragua, 1100 m, 7 Aug 1965; Barinas, 609-794 m, 13 Dec 1967 to 10 Jan 1968; Bolívar, 150-306 m, 30 Mar 1966 and 10 Apr 1967; Carabobo, 598-1537 m, 1-29 Nov 1967; Falcón, 2-1260 m, 27 Sep to 23 Nov 1967, 17 May 1968; Guárico, 470 m, 20 Sep 1966; Miranda 1-1160 m, 4-24 Oct 1966; Monagas, 854 m, 11 Jul 1967; Sucre, 90 m, 17-27 Jun 1967; Amazonas, 60-135 m, 11 May to 23 Nov 1967; Trujillo, 90-164 m, 1-6 Sep 1965; Yaracuy, 150-400 m, 7 Dec 1967; Zulia, 270-1135 m, 18 Apr to 4 May 1968.

*L. desmodus*, described from Guatemala off *Desmodus rotundus*, has been recorded off *Carollia perspicillata*, Trinidad (Brennan and Jones, 1960); off *Saccopteryx bilineata*, *Glossophaga soricina*, *Carollia castanea*, *C. subrufa*, and *Micronycteris megalotis*, Panamá (Brennan and Yunker, 1966); off *Erophylla sezekorni*, Bahamas (Brennan, 1967); off *G. soricina* and *Mimon cozumelae*, Yucatan (Loomis, 1969).

*Loomisia yunker* Brennan and Reed

*Loomisia yunker* Brennan and Reed, 1972a, p. 798

No records except those of the original description, here with corrected host identifications: type series off *Peropteryx macrotis*; 96

larvae off bats, *Peropteryx macrotis*, *P. trinitatis*, *Carollia perspicillata*, *Cormura brevirostris*, and *Glossophaga longirostris*, from Barinas, Bolívar, and Falcón.

Genus *Microtrombicula* Ewing, 1950

Type species: *Microthrombidium minutissimum* Oudemans, 1910

\**Microtrombicula boneti* (Hoffmann)

*Trombicula* (*Trombicula*) *boneti* Hoffmann, 1952, p. 87.

One larva off *Pteronotus parnellii*, Miranda, Birongo, 60 m, 22 Jan 1968; 2 off *Anoura caudifera*, Carabobo, 4 km NW Montalbán (La Copa), 1537 m, 26 Nov 1967; 1 off *Carollia perspicillata*, Falcón, 14 km ENE Mirimire (La Pastora), 60 m, 23 Nov 1967; 9 off *Desmodus rotundus*, Zulia, 21 km SW Machiques (Kasmera), 270 m, 20 Apr 1968.

Described from Mexico off *Mormoops megalophylla*. Webb and Loomis (1971) report this bat chigger from Costa Rica off *Desmodus rotundus*; from Mexico off *D. rotundus*, *Natalus stramineus*, *Leptonycteris sanborni*, *Glossophaga soricina*, *Mormoops megalophylla*, and *Pteronotus parnellii*; from Texas off *M. megalophylla*. Recorded as *Trombicula tibbettsi* from: *Myotis grisescens*, Alabama, *M. megalophylla*, Texas, *M. timidiceps* and *Chilonycteris rubiginosa*, Trinidad (Brennan and White, 1960); *C. rubiginosa* and *M. megalophylla*, Trinidad (Brennan and Jones, 1960); *M. megalophylla*, Texas (Loomis and Crossley, 1963); *Pteronotus sapurensis*, Panamá (Brennan and Yunker, 1966); *Erophylla sezekorni*, Bahamas, and *Glossophaga elongata*, Curaçao (Brennan, 1967).

\**Microtrombicula carmenae* (Brennan and Jones)

*Trombicula carmenae* Brennan and Jones, 1960, p. 513.

Three larvae off *Phyllostomus discolor*, Trujillo, 25 km NW Valera (Agua Santa), 90 m, 22 Oct 1965; 1 off *Carollia perspicillata*, Bolívar, 50 km SE El Manteco (Río Supamo), 150 m, 7 Apr 1966; 2 off 2 *Sturnira lilium*, Falcón, 84 km NW Carora (Cerro Socopo), 1260 m, 17 May 1968; 10 off *S. lilium*, Monagas, 3 km NW Caripe, 1345 m, 11 Jul 1967; 1 off *S. ludovici*, Guárico, 10 km NE Altigracia (Hacienda Elvira), 630 m, 16 Sep 1966; 1 off *Artibeus harti*, Distrito Federal, 4 km NNW Caracas (Los Venados), 1400 m, 1 Aug 1965; 3 off 2 *A. jamaicensis*, Falcón, 80 km NW Carora (Río Socopo), 480 m, 20-22 May 1968; 3 off *A. jamaicensis*, Trujillo,



25 km NW Valera (Agua Santa), 90 m, 6 Sep 1965; 1 off *A. jamaicensis*, Yaracuy, 20 km NW San Felipe (Minas de Aroa), 395 m, 18 Dec 1967; 12 off 3 *A. jamaicensis*, Zulia, 19 km WSW Machiques (Novito), 1135 m, 3 and 4 May 1968; 3 off *A. jamaicensis*, Zulia, 33 km NW La Paz (nr. Cerro Azul), 13 Jun 1968; 1 off *Rhipidomys venezuelae*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Cerro Santa Ana), 570 m, 27 Jul 1968.

This bat chigger was described off *Phyllostomus discolor*, Trinidad. Additional records are: Panamá, off *P. hastatus*, *Sturnira ludovici*, and *Artibeus jamaicensis* (Brennan and Yunker, 1966); Costa Rica, off *P. discolor*, *S. ludovici*, *S. mordax*, *A. jamaicensis*, and *A. lituratus*; Nicaragua, off *P. discolor*, *A. jamaicensis*, and *Desmodus rotundus*; Mexico, off *A. jamaicensis*; Trinidad, off *D. rotundus* (Webb and Loomis, 1971).

\**Microtrombicula fragibarba* (Brennan and Jones)

*Trombicula fragibarba* Brennan and Jones, 1960, p. 517.

One larva off unidentified bird, Bolívar, 20 km W La Paragua (Hato San José), 300 m, 4 Apr 1967; 164 off 19 *Marmosa robinsoni*, Guárico, 35 km SSW San Juan de los Morros (Hato las Palmitas), 181 m, 5-7 Jan 1968; 10 off *M. robinsoni*, Guárico, 9 km SE Calabozo (Biological Station), 100 m, 19 Aug 1968; 14 off 2 *M. robinsoni*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Moruy), 90 m, 5 and 13 Jul 1968; 8 off *Didelphis marsupialis*, Falcón, 14 km ENE Mirimire (La Pastora), 130 m, 20 Nov 1967; 19 off 2 *Rhipidomys venezuelae*, Falcón, Peninsula de Paraguaná, 25 km SW Pueblo Nuevo (Yabuquiva), 13 m, 17 Jul 1968; 9 off *R. venezuelae*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Cerro Santa Ana), 575 m, 1 Aug 1968; 6 off 2 *R. fulviventris*, Monagas, 5 km NW Caripe (San Agustín), 1170-1185 m, 26 and 28 Jun 1967.

Described from type series off parrot, *Amazona amazonica*, and other material off climbing mouse, *Rhipidomys couesi*, Trinidad. Other records: Surinam, off *Didelphis marsupialis* and *Philander opossum* (Brennan and Lukosehus, 1971).

\**Microtrombicula tragulata* (Brennan and Jones)

*Euschöngastia tragulata* Brennan and Jones, 1961b, p. 110.

Two larvae off *Marmosa robinsoni*, Guárico, 35 km SSW San Juan de los Morros (Hato las

Palmitas), 181 m, 5 Jan 1968; 9 off *Rattus rattus*, Trujillo, 30 km NW Valera (El Dividive), 90 m, 20 Oct 1965; 13 off 2 *Potos flavus*, Distrito Federal, 31 km WSW Caracas (Alto No León), 1750 m, 21 Dec 1965; 10 off *P. flavus*, Zulia, 33 km NW La Paz (nr. Cerro Azul), 80 m, 16 Jun 1968.

Described from Barro Colorado Island, Canal Zone, off *Nasua narica*; recorded elsewhere in the Canal Zone off *Didelphis marsupialis* and *Coendou rothschildi* (Brennan and Yunker, 1966); Baja California Sur, Mexico, off *Bassariscus astutus*; Nicaragua, off *Potos flavus* (Webb and Loomis, 1970).

*Microtrombicula* sp. A

Two larvae off 2 *Artibeus jamaicensis*, Zulia, 33 km NW La Paz (nr. Cerro Azul), 75 m, 13 and 15 Jun 1968.

*Microtrombicula* sp. B

Five larvae off *Rattus rattus*, Trujillo, 30 km NW Valera (El Dividive), 90 m, 20 Oct 1965; 7 off 2 *Potos flavus*, Distrito Federal, 31 km WSW Caracas (Alto No León), 1750 m, 21 Dec 1965.

*Microtrombicula* sp. C

Seventeen larvae off 4 *Neoplatymops matto-grossensis*, Amazonas, 33 km S Puerto Ayacucho (El Raudal), 195 m, 4 and 10 Oct 1967, 20 km S Puerto Ayacucho (Las Queseras), 135 m, 27 Sep 1967; 1 off *Carollia perspicillata*, Falcón, 11 km ENE Mirimire (La Pastora), 250 m, 21 Nov 1967.

*Microtrombicula* sp. D

Two larvae off unidentified bird, Bolívar, 20 km W La Paragua (Hato San José), 300 m, 4 Apr 1967.

Genus *Nasicola* Brennan and Yunker, 1969

Type species: *Nasicola annereauxi* Brennan and Yunker, 1969

*Nasicola annereauxi* Brennan and Yunker

*Nasicola annereauxi* Brennan and Yunker, 1969, p. 301.

One larva off *Marmosa robinsoni*, Falcón, Capatárida, 40 m, 25 Jun 1968; 1 off *Phyllostomus hastatus*, Falcón, 80 km NW Carora (Rio Socopo), 480 m, 20 May 1968; 44 off 11 *P. hastatus* and 1 off *Molossops planirostris*, Monagas, 54 km SE Maturín (Hato de Bejuco), 18 m, 3-11 Jun 1968.



This intranasal chigger of bats was described from 2 specimens off *Phyllostomus hastatus*, Bolívar, Venezuela. It was found commonly in the nasal passages of *Noctilio labialis* in Surinam (Brennan and Lukoschus, 1971) and is here recorded from Colombia: 1 larva off *P. hastatus*, Valle, Cali, 2 Aug 1967; 1 off *N. labialis*, Caqueta, Tres Esquinas, 24 May 1968; 1 off *N. labialis*, Caqueta, Los Alicangaros, 24 May 1968; C. J. Marinkelle.

Genus *Neoschoengastia* Ewing, 1929

Type species: *Schöngastia americana* Hirst, 1921

\**Neoschoengastia americana* (Hirst)

*Schöngastia americana* Hirst, 1921, p. 37.

Six larvae off unidentified bird, Bolívar, 20 km W La Paragua (Hato San José), 300 m, 8 Apr 1967; 1 off "owl," same location, 6 Apr 1967; 4 off unidentified bird, Bolívar, 47 km ESE Caicara (Hato La Florida), 50 m, 4 May 1967; 29 off 4 *Zygodontomys brevicauda*, Bolívar, 44-45 km ESE Caicara (Hato La Florida), 43-45 m, 22 to 28 Apr 1967; 1 off *Sylvilagus floridanus*, Falcón, Peninsula de Paraguana, 15 km SSW Pueblo Nuevo (Moruy), 55 m, 15 Jul 1968.

*N. americana* was described from Texas off domestic chicken. It is commonly parasitic on both domestic and wild birds and known also from a few reptiles, lagomorphs, and rodents. The species, in its various forms, is widely distributed, particularly in the temperate to warmer climates of the world.

Genus *Nycterinastes* Brennan and Reed, 1973

Type species: *Nycterinastes primus* Brennan and Reed, 1973

*Nycterinastes primus* Brennan and Reed

*Nycterinastes primus* Brennan and Reed, 1973b, p. 709.

No records beyond those of the original description: off bats, *Desmodus rotundus*, *Lionycteris spurrelli*, *Glossophaga soricina*, *Anoura geoffroyi*, *Carollia perspicillata*, *Lonchorhina aurita*, *Pteronotus parnellii*, and *Anoura* sp. A, from Bolívar and Amazonas.

*Nycterinastes secundus* Brennan and Reed

*Nycterinastes secundus* Brennan and Reed, 1973b, p. 709.

Venezuela records are those of the original description: 21 larvae off 5 *Anoura geoffroyi* from Barinas, Bolívar, and Miranda.

Known also in Costa Rica: 2 larvae off *Anoura geoffroyi*, Cartago, Hacienda Moravia (Moravia de Chirripo), 2 Oct 1962, Casebeer and Arnold; 1 off *Lonchophylla robusta*, Alajuela, 13 mi N Arena das Grutas del Venado, 9 Apr 1963, Casebeer. These records from material collected under direction of Dr. Richard B. Loomis, California State University, Long Beach.

Genus *Odontacarus* Ewing, 1929

Type species: *Trombicula dentata* Ewing, 1925

*Odontacarus* (O.) *australis* (Ewing)

*Trombicula australis* Ewing, 1929, p. 10

Reed and Brennan (1975) record 12 larvae off 5 unidentified lizards, Zulia, 34 km NNE Paraguaipoa (Cojoro), 15 m, 19 Jun 1968.

Known previously only from the single type specimen off *Tropidurus peruvianus*, Lima, Peru.

*Odontacarus* (O.) *comosus comosus*  
Reed and Brennan

*Odontacarus* (O.) *comosus comosus*, Reed and Brennan, 1975, p. 13

No records other than those of the type series and additional records listed with the original description:

1 larva off *Marmosa dryas*, 1 off *M. inpa-vida*, 1 off *Oryzomys albigularis*, 3 off 2 *O. minutus*, 2 off *Rhipidomys venustus*, 32 off 14 *Thomasomys hylophilus*, and 2 off unidentified bird, from Táchira.

*Odontacarus* (O.) *comosus novemsetus*  
Reed and Brennan

*Odontacarus* (O.) *comosus novemsetus*, Reed and Brennan, 1975, p. 13

No records other than those of the original description: 1 larva off *Marmosa fuscata*, 1 off *Heteromys anomalus*, and 15 off *Oryzomys albigularis*, from Distrito Federal and Miranda.

*Odontacarus* (O.) *dienteslargus* Reed and Brennan

*Odontacarus* (O.) *dienteslargus*, Reed and Brennan, 1975, p. 15

No records other than those of the type series and additional records listed with the original description: 3 larvae off *Cryptotis thomasi*, 2 off *Oryzomys albigularis*, 23 off *Thomasomys hylophilus*, 4 off *T. laniger*, 1 off *Chilomys instans* and 2 off *Akodon bogotensis*, from Mérida and Táchira.

*Odontacarus (O.) pugnus* Reed and Brennan  
*Odontacarus (O.) pugnus*, Reed and Brennan,  
 1975, p. 15

No records other than those of the original description: 7 larvae off *Oryzomys minutus* and 3 off *Thomasomys laniger*, from Mérida.

*Odontacarus (O.) schoenesetosus*  
 Reed and Brennan

*Odontacarus (O.) schoenesetosus*, Reed and  
 Brennan, 1975, p. 17

No records other than those of the original description: 11 larvae off *Lonchorhina aurita*, 1 off *Artibeus jamaicensis*, 9 off *Thomasomys laniger*, 7 off *T. lugens* and 2 off *T. vestitus*, from Trujillo.

*Odontacarus (O.) sunniana*  
 Reed and Brennan

*Odontacarus (O.) sunniana*, Reed and Bren-  
 nan, 1975, p. 19

No records other than the type series and additional records listed with the original description: 1 larva off *Didelphis marsupialis*, 1 off *M. fuscata*, 1 off *Sciurus granatensis*, 2 off *O. albigularis*, 2 off *Sigmodon hispidus*, and 27 off *Proechimys semispinosus* from Aragua, Barinas, Falcón, Lara, and Miranda.

*Odontacarus (O.) tiptoni* Reed and Brennan

*Odontacarus (O.) tiptoni*, Reed and Brennan,  
 1975, p. 20

No records other than those of the original description: 1 off *Marmosa dryas*, 1 off *Oryzomys albigularis*, 1 off *O. minutus*, 1 off *Thomasomys lugens*, and 17 off *T. vestitus*, from Trujillo.

*Odontacarus (O.) tubercularis* (Brennan)

*Acomatacarus tubercularis* Brennan, 1952, p. 146.

About 1200 larvae identified from 214 collections, also briefly recorded by Reed and Brennan (1975). Opossums: 4 *Monodelphis brevicaudata*, 1 *Marmosa* sp. A, 13 *M. fuscata*, 13 *M. robinsoni*, 10 *Didelphis marsupialis*. Bats: 1 *Saccolaryx bilineata*, 1 *Micronycteris microtis*, 1 *Carollia brevicauda*, 1 *Vampyrops helleri*, 1 *Vampyressa pusilla*. Lagomorphs: 1 *Sylvilagus floridanus*. Rodents: 1 *Sciurus granatensis*, 40 *Heteromys anomalus*, 40 *Oryzomys albigularis*, 3 *O. concolor*, 1 *O. fulvescens*, 2 *O. minutus*, 1 *Nectomys alfar*, 1 *Thomasomys lugens*, 3 *Akodon urichi*, 8 *Zygodontomys brevicauda*, 28 *Sigmodon hispidus*, 9 *Sigmomys alstoni*, 1 *Rattus norvegicus*, 1 *R. rattus*, 3 *Agouti paca*, 2 *Dasy-*

*procta aguti*, 22 *Proechimys semispinosus*, 1 *Mazana americana*.

Amazonas, 119-145 m, Oct 1967; Aragua, 1050-1100 m, Aug 1965 and Apr 1967; Bolívar, 43-298 m, Jun 1966 and Apr 1967; Carabobo, 25-1537 m, Mar 1966 and Nov 1967; Falcón, 25-1280 m, Oct and Nov 1965, Aug, Nov, and Dec 1967, and May 1968; Distrito Federal, 1415-2181 m, Jul to Dec 1965, Aug 1966, and May to Nov 1967; Guárico, 100-650 m, Sep and Oct 1966, and Jan, May, and Aug 1968; Lara, 1-900 m, Jul 1968; Miranda 1130-2124 m, Sep and Dec 1965, Aug to Oct 1966, May 1967, and May 1968; Monagas, 35-1270 m, Aug 1966, Jun and Jul 1967; Nueva Esparta, 38-100 m, Jan 1967; Sucre, 200-430 m, Jul and Aug 1967; Táchira, 2405-2420 m, Mar 1968; Trujillo, 90-2225, Oct 1965 and Jan 1966; Zulia, 37-1135 m, Mar to Jun 1968.

Described from Aragua, Venezuela, off *Heteromys anomalus*. Reported further by Brennan and Jones (1960) from Trinidad off *Proechimys guyanensis* and *Nectomys squamipes*; by Brennan (1967) from Patos Island, Venezuela, off *Rattus* sp.; by Brennan (1970a) and Brennan and Lukoschus (1971) from Surinam off *Dasyprocta* sp., *Philander opossum*, *Proechimys guyanensis*, and *Nectomys squamipes*.

Recorded by Brennan (1959) as *Odontacarus cayolargoensis* from Key Largo, Florida, off *Sigmodon hispidus*; from Cameron Co., Texas, by Loomis and Crossley (1963) off *Liomys irroratus*, *Peromyscus leucopus*, and *Sigmodon hispidus*; by Loomis (1969) from Mexico off *Heteromys gaumeri* (Campeche) and *Ototylomys phyllotis*, *Peromyscus yucatanicus*, *Sigmodon hispidus*, and *Heteromys gaumeri* (Yucatán). Also recorded as *Odontacarus fieldi* off various birds and mammals in Panamá by Brennan and Jones (1961b) and Brennan and Yunker (1966).

*Odontacarus (O.) tuberculohirsutus*  
 Reed and Brennan

*Odontacarus (O.) tuberculohirsutus*, Reed and  
 Brennan, 1975, p. 22

No records other than those of the type series and additional records listed with the original description: 10 larvae off *Oryzomys minutus*, 41 off *Thomasomys laniger* and 3 off *Akodon bogotensis*, from Mérida.

*Odontacarus (O.) vanderhammeni*  
 Reed and Brennan

*Odontacarus (O.) vanderhammeni*, Reed and  
 Brennan, 1975, p. 24

No records other than those of the original

description: 1 larva off *Marmosa dryas*, 1 off *Oryzomys albigularis*, 3 off *O. minutus*, and 2 off *Thomasomys lugens*, from Mérida and Trujillo.

*Odontacarus (O.) vergrandi* Reed and Brennan  
*Odontacarus (O.) vergrandi*, Reed and Brennan, 1975, p. 25

No records other than those of the original description: 4 larvae off *Lonchorhina aurita*, 4 off *Oryzomys minutus*, and 11 off *Thomasomys laniger*, from Mérida and Trujillo.

Genus *Parasecia* Loomis, 1966

Type species: *Trombicula gurneyi* Ewing, 1937

\**Parasecia aitkeni* Brennan and Jones

*Trombicula aitkeni* Brennan and Jones, 1960, p. 510.

Nearly 700 larvae identified from 110 collections: 41 *Marmosa robinsoni*, 1 *Saccopteryx bilineata*, 1 *Artibeus lituratus*, 4 *Heteromys* sp. A, 1 *Histiotes* sp. A, 5 *Rhipidomys venezuelae*, 2 *Sigmodon hispidus*, 1 *Sigmodon alstoni*, 1 *Dasyprocta variegata*, 1 *Echimys armatus*, 1 *E. semicilliosus*, 49 *Proechimys semispinosus*, 1 *Agouti paca*.

Apure, 24 m, Jan and Feb 1968; Barinas, Dec 1967; Bolívar, 800 m, May 1968; Falcón, 470-615 m, May to Aug 1968; Distrito Federal, 2101 m, Aug 1965; Lara, 518 m, Jul 1968; Zulia, 37-273 m, Feb to Jun 1968.

Described from Trinidad off *Nectomys squamipes* and later recorded off *Marmosa* sp. from the same island (Brennan, 1969a); also reported from Bolivia off *Oryzomys capito* by Brennan (1970b) and by Brennan and Lukoschus (1971) off *Philander opossum*, Surinam.

\**Parasecia longicalcar* Brennan and Jones

*Trombicula longicalcar* Brennan and Jones 1960, p. 517.

Three larvae off 3 *Saccopteryx bilineata*, Falcón, 19 km NW Urama, 25 m, 8 Nov 1965; 1 off *Rhipidomys venezuelae* and 9 off 3 *Zygodontomys brevicauda*, Falcón, 80 km NW Carora (Hacienda Socopito), 470 m, 20, 22, and 28 May 1968; 3 off *Proechimys semispinosus*, Miranda, 6 km SSE Río Chico (Puerto Tuy), 1 m, 15 Nov 1966; 7 off *P. semispinosus*, Yaracuy, 19 km NW Urama, 25 m, 12 Nov 1965.

Holotype off *Amazona amazonica* Trinidad. Recorded also from a variety of tree-frequenting hosts including parrots, snakes, opossums, bats, squirrels, and porcupines in Trinidad,

British Guiana, and Panamá (Brennan and Jones, 1960; Brennan and Yunker, 1966; Brennan, 1967 and 1969a).

\**Parasecia manueli* Brennan and Jones

*Trombicula manueli* Brennan and Jones, 1960, p. 520.

Over 200 larvae identified from 38 collections. Two unidentified birds. Opossum: 1 *Philander opossum*. Bats: 1 *Mimon crenulatum*, 2 *Carollia perspicillata*, and 2 *Neoplatus matogrossensis*. Rodents: 8 *Heteromys anomalus*, 1 *Rhipidomys leucodactylus*, 3 *Akodon urichi*, 6 *Zygodontomys brevicauda*, 2 *Sigmodon alstoni*, 1 *Agouti paca*, 1 *Proechimys guyannensis*, 9 *P. semispinosus*, and 1 *Echimys armatus*.

Amazonas, 135-195 m, Mar, May, Sep, and Oct 1967; Apure, 24 m, Jan 1968; Bolívar, 851 m, Apr and May 1968; Carabobo, 25 m, 11 to 22 Mar 1968; Monagas, 1180 m, Jun 1967; Sucre, 0-575 m, Dec 1966, Jul and Aug 1967; Zulia, 37 and 80 m, Mar and Jun 1968.

Described from Trinidad off *Zygodontomys brevicauda*. Other records (Brennan and Jones, 1960 and 1961a; Brennan and Yunker, 1966; Brennan, 1968a; Brennan and Lukoschus, 1971) from numerous reptiles, birds, marsupials, and rodents; Trinidad, Peru, Panamá, Colombia, and Surinam.

\**Parasecia psittaci* (Floch and Abonnenc)

*Trombicula psittaci* Floch and Abonnenc, 1949, p. 1.

Six larvae off 2 unidentified birds, Bolívar 20 km W La Paragua (Hato San José), 300 m, 3 and 4 April 1967.

Described off "perroquet vert," French Guiana. Other records: Brennan and Jones (1960), off *Amazona amazonica*, Trinidad; Fauran (1960), off toucan (*Selenidera* sp.), French Guiana.

\**Parasecia soucouyanti* (Brennan and Yunker)

*Trombicula soucouyanti* Brennan and Yunker, 1966, p. 256.

Two larvae off *Rhipidomys venustus*, Distrito Federal, 5 km NNE Caracas (Pico Avila), 2135 m, 8 Sep 1965.

In addition, known only from the type series off *Sturnira ludovici* and other material off *Myotis* sp., Panamá.

*Parasecia* sp. A

Thirty-three off 4 *Tadarida gracilis*, Apure, 38 km NNW Puerto Páez, Río Cinaruco, 76 m,

26 to 27 Jan 1966; 2 off 2 *T. gracilis*, Apure, 1 km W Puerto Páez (Cerro de Murciélagos), 76 m, 20 and 21 Jan 1966; 51 off 6 *T. gracilis*, Amazonas, 56 km NNW Esmeralda (Belén), 150 m, 13 Jan 1967; 1 off *T. gracilis*, Bolívar, 50 km SE Manteco, (Río Supamo), 150 m, 8 Apr 1966; 45 off 6 *Neoplatymops mattogrossensis*, Amazonas, 33 km S Puerto Ayacucho (El Raudal), 195 m, 4 and 10 Oct 1967; 1 off *Molosus ater*, Monagas, 5 km NW Caripe (San Agustín), 1180 m, 27 Jun 1967; 6 off *Proechimys semispinosus*, Amazonas, 84 km SSE Esmeralda (Boca Mavaca), 138 m, 20 Mar 1967.

#### *Parasecia* sp. C

Seventeen larvae off 2 *Proechimys semispinosus*, Barinas, Altamira, 794 m, 5 Jan 1968.

#### *Parasecia* sp. D

Five larvae off *Lonchophylla robusta*, Barinas, 7 km NNE Altamira (Agua Fria), 1070 m, 25 Dec 1967; 5 off *L. robusta*, Barinas, Altamira, 794 m, 20 Dec 1967.

#### *Parasecia* sp. E

Eight larvae off 2 *Tadarida gracilis*, Apure, 1 km W Puerto Páez (Cerro de Murciélagos), 76 m, 20 and 21 Jan 1966; 6 off *T. gracilis*, Apure, 38 km NNW Puerto Páez (Río Cinaruco), 76 m, 27 Jan 1966.

#### *Parasecia* sp. F

Ten larvae off 1 *Sturnira erythromos*, 12 km SE La Azulita (La Carborera), 2150 m, 21 Apr 1966.

#### *Parasecia* sp. G

Eight larvae off *Sturnira erythromos* and 2 off *Artibeus harti*, Distrito Federal, 5 km NNE Caracas (Pico Avila), 2092 and 2150 m, 17 and 20 Aug 1965; 10 off *S. erythromos*, Carabobo, 4 km NW Montalbán (La Copa), 1537 m, 30 Nov 1967.

#### *Parasecia* sp. H

Two larvae off unidentified lizard, Bolívar, 20 km W La Paragua (Hato San José), 306 m, 22 Mar 1967; 1 off *Sigmomys alstoni*, Bolívar, 46 km NE Icabarú, 800 m, 15 May 1968.

#### *Parasecia* sp. I

Five larvae off 3 *Tadarida gracilis*, Apure, 1 km W Puerto Páez (Cerro de Murciélagos),

76 m, 20 Jan 1966; 11 off 1 *Neoplatymops mattogrossensis*, Bolívar, 28 km SE El Manteco (Los Patos), 150 m, 11 Apr 1966.

Genus *Perissopalla* Brennan and White, 1960

Type species: *Perissopalla flagellisetula* Brennan and White, 1960

\**Perissopalla precaria* Brennan and Dalmat

*Euschöngastia precaria* Brennan and Dalmat, 1960, p. 190.

About 400 larvae identified from 88 collections. One *Anoura* sp. A, 1 *Artibeus lituratus*, 27 *Carollia brevicauda*, 40 *C. perspicillata*, 1 *Desmodus rotundus*, 1 *Glossophaga longirostris*, 3 *G. soricina*, 1 *Leptonycteris curasoae*, 1 *Micronycteris microtis*, 1 *Noctilio labialis*, 5 *Peropteryx kappleri*, 2 *P. macrotis*, 1 *Phyllostomus discolor*, 2 *Sturnira lilium*; 1 *Proechimys guyanensis*.

Amazonas, 155 m, Jul 1967; Apure, 24 m, Jan 1968; Barinas, 611-794 m, Dec 1967 and Jan 1968; Bolívar, 45-851 m, Jun 1966, Apr 1967 and 1968; Carabobo, 598-1537 m, Nov 1967; Distrito Federal, 1415-1465 m, Jul and Aug 1965; Falcón, 120-1260 m, Nov 1967, May and Jul 1968; Miranda, 1-1160 m, Jan and Oct 1966; Monagas, 854 m, Jul 1967; Sucre, 1 m, Dec 1966; Yaracuy, 400 m, Dec 1967; Zulia, 24-270 m, Mar and Apr 1968.

This bat chigger, described from Guatemala off *Desmodus rotundus* and unidentified bat, was recorded by Brennan and Yunker (1966) off *Micronycteris megalotis*, Panamá, and by Loomis (1969) off *Glossophaga soricina*, Mexico (Quintana Roo).

#### *Perissopalla tanycera* Brennan

*Perissopalla tanycera* Brennan, 1969c, p. 430.

Eighteen larvae off 3 *Peropteryx macrotis* and 2 off *P. trinitatis*, Bolívar, 85 km SSE El Dorado, 374 m, 29 May and 23 Jun 1966; 1 off *Chiroderma trinitatum*, Bolívar, 59 km SE El Dorado (El Manaco), 150 m, 23 Jun 1966.

No other records since described off *Peropteryx* sp. from Bolívar, Venezuela. Brennan (1970b) lists specimens "near *P. tanycera*" off *Peropteryx macrotis*, Beni, Bolivia, and *Saccopteryx bilineata*, Rondônia, Brazil.

#### *Perissopalla* sp. A

Four larvae off *Carollia brevicauda*, Aragua, 13 km NW Maraey (Rancho Grande Biological Station), 1100 m, 7 Aug 1965; 16 off 5 *C.*



*brevicauda*, Carabobo, 4 km NW Montalbán (La Copa), 1737 m, 26 to 30 Nov 1967; 53 off 14 *C. brevicauda*, Barinas, Altamira and 5 km SW Altamira (La Soledad and La Bellaca), 794 m, 13 and 14 December 1967; 12 off 2 *C. brevicauda*, 7 km NNE Altamira (Agua Fria), 1070 m, 25 Dec 1967; 2 off *C. brevicauda* and 1 off *Sturnira lilium*, 2 km SW Altamira (La Vega del Río Santo), 620 m, 27 and 28 Dec 1967; 5 off *Peropteryx kappleri*, Falcón, 12 km ENE Mirimire (La Pastora), 220 m, 14 Nov 1967; 1 off *P. macrotis*, Yaracuy, 20 km NW San Felipe (Minas de Aroa), 395 m, 12 Dec 1967; 19 off 3 *C. brevicauda*, Falcón, 84 km NW Carora (Cerro Socopo), 1260 m, 13 and 17 May, 1968.

*Perissopalla* sp. B

Three larvae off *Carollia brevicauda* and 3 off *C. perspicillata*, Miranda, 5 km NNW Guarenas (Curupao), 1160 m, 5 and 8 Oct 1966; 32 off 6 *Peropteryx kappleri* and 7 off *C. perspicillata*, Monagas, 3 km SW Caripe (Hacienda Tucúto), 854 m, 11 Jul 1967; 1 off *C. perspicillata*, Sucre, 26 km ESE Carúpano (Manacal), 300 m, 19 Jul 1967; 2 off *C. brevicauda*, Carabobo, 4 km NM Montalbán (La Copa), 1537 m, 27 Nov 1967.

*Perissopalla* sp. C

Six larvae off *Eptesicus fuscus*, Distrito Federal, 4 km NNW Caracas (Los Venados), 1498 m, 31 Jul 1965.

*Perissopalla* sp. D

Seven larvae off *Glossophaga soricina*, Bolívar, 56 km SE El Dorado (El Manaco), 150 m, 16 Jun 1966.

*Perissopalla* sp. E

Eight larvae off *Carollia perspicillata*, Bolívar, 45 km NE Icabarú (Santa Lucía de Surukún), 851 m, 30 Apr 1968; 4 off *C. perspicillata*, Apure, 29 km SSW Santo Domingo (Nulita), 24 m, 28 Jan 1968.

*Perissopalla* sp. F

One larva off *Carollia perspicillata*, Miranda, 1 km S Río Chico, 1 m, 26 Oct 1966; 1 off *Anoura geoffroyi*, Bolívar, 59 km SE El Dorado (El Manaco), 150 m, 23 Jun 1966.

Genus *Peltoculus* Brennan, 1972

*Type species: Trombicula almae* Brennan, 1968.

*Peltoculus bobbiannae* Brennan

*Peltoculus bobbiannae* Brennan, 1972a, p. 16.

Described from 5 larvae off *Thomasomys hylophilus* and *Oryzomys minutus*, Táchira, about 41 km SW San Cristóbal (Buena Vista), 2350-2430 m.

Additional records from the same general locality are: 2 larvae off *Caenolestes obscurus*, 8 Mar 1968; 16 off 2 *Cryptotis thomasi*, 8 and 15 Mar; 4 off 2 *Akodon bogotensis*, 17 and 18 Mar; 5 off 3 *Oryzomys albigularis*, 16-21 Mar; 14 off 7 *O. minutus*, 2-17 Mar; 15 off 10 *Thomasomys hylophilus*, 1-24 Mar; 20 off 2 *Chilomys instans*, 9 and 13 Mar; 2 off *Rhipidomys venustus*, 9 Mar.

Genus *Phalcophila* Brennan and Reed, 1973

*Type species: Phalcophila antica* Brennan and Reed, 1973.

*Phalcophila antica* Brennan and Reed

*Phalcophila antica* Brennan and Reed, 1973b, p. 708.

Known only from the original description: 7 larvae off *Pteronotus psilotis*, Bolívar.

*Phalcophila postica* Brennan and Reed

*Phalcophila postica* Brennan and Reed, 1973b, p. 709.

Known only from the holotype off *Pteronotus psilotis*, Bolívar.

Genus *Polylopadium* Brennan and Jones, 1961

*Type species: Polylopadium kramisi* Brennan and Jones, 1961

\**Polylopadium aspasium* Brennan

*Polylopadium aspasium* Brennan, 1969b, p. 868.

One larva off *Proechimys* sp., Amazonas, 106 km SW Esmeralda, (SW bank of Casiquiare Canal, 1 km from Capibara), 130 m, 10 Jun 1967.

Described from 15 larvae off 3 *Oryzomys capito*, Amapá and Pará, Brazil; also recorded from 3 larvae off 2 *Proechimys* sp., Rondônia, Brazil (Brennan, 1970b).

*Polylopadium chaetolecanium*

Brennan and Reed

*Polylopadium chaetolecanium* Brennan and Reed, 1972b, p. 461.

No records beyond those of the original description: 4 larvae off *Proechimys guyanensis* and *Heteromys anomalus*, Sucre.



*Polylopadium tricholecanium* Brennan and Reed

*Polylopadium tricholecanium* Brennan and Reed, 1972b, p. 461.

Known only from the single specimen of the original description: off *Proechimys* sp., Falcón.

Genus *Pseudoschoengastia* Lipovsky, 1951

Type species: *Pseudoschoengastia hungerfordi* Lipovsky, 1951

\**Pseudoschoengastia bulbifera* Brennan

*Pseudoschoengastia bulbifera* Brennan, 1960, p. 483.

Nine larvae off *Proechimys semispinosus*, 1 off *Nectomys squamipes*, and 4 off *Heteromys anomalus*, Zulia, 21 km SW Machiques (Kasmera), 270 m, 17 to 22 Apr 1968; 3 off *Sigmodon hispidus*, 19 km WSW Machiques (Novito), 27 Apr 1968; C. E. Yunker.

First records for Venezuela and first bona fide record of genus *Pseudoschoengastia* for South America.

Genus *Quadrasetta* Brennan, 1970

Type species: *Euschoengastia pazca* Brennan and Jones, 1964

\**Quadrasetta antillarum* (Brennan)

*Euschoengastia antillarum* Brennan, 1967, p. 150.

Nine larvae off *Marmosa robinsoni*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Moruy), 90 m, 13 Jul 1968; 15 off 6 *M. robinsoni*, Guárico, 35 km SSW San Juan de Los Morros (Hato Las Palmitas), 181 m, 3-6 Jan 1968; 54 off 11 *Sylvilagus floridanus*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Moruy), 45-55 m, 13-17 Jul 1968; 26 off 5 *Zygodontomys brevicauda*, Guárico, 35 km SSW San Juan de Los Morros (Hato Las Palmitas), 181 m, 3-6 Jan 1968; 9 off 3 *Z. brevicauda*, Bolívar, 44-47 km ESE Ciacara (Hato La Florida), 45-90 m, 28 Apr 1967; 5 off 2 *Proechimys semispinosus*, Guárico, 35 km SSW San Juan de Los Morros (Hato Las Palmitas), 181 m, 5 and 6 Jan 1968.

Described from 7 larvae off *Sylvilagus floridanus*, Curaçao, Mar 1949; 7 more specimens from same host species and locality, 1963.

\**Quadrasetta flochi* Brennan and Jones

*Euschoengastia flochi* Brennan and Jones, 1960, p. 503.

Nearly 200 larvae identified from 8 *Mono-*

*delphis brevicaudata*, 3 *Marmosa robinsoni*, 6 *Heteromys anomalus*, 5 *Oryzomys albigularis*, 1 *O. capito*, 1 *Akodon urichi*, 16 *Zygodontomys brevicauda*, 1 *Sigmodon alstoni*, 1 *Sigmodon hispidus*, and 4 *Proechimys semispinosus*.

Bolívar, 150 m, 25 Jun 1966; Amazonas, 135 m, 3-5 Nov 1966; Falcón, 25-1257 m, 19 Oct to 4 Nov 1965; 16 Nov 1967 and 15 May 1968; Distrito Federal, 398 m, 19 Aug 1966; Guárico, 181 m, 5-6 Jan 1968; Miranda, 1130-1176 m, 14 May 1967, 14 and 15 May 1968; Monagas, 18-1340 m, 29 Jun to 8 Jul 1967, 4 and 5 Jun 1968; Sucre, 190-423 m, 21 Jul to 1 Aug 1967; Trujillo, 90 m, 21 Aug to 20 Oct 1965; Zulia, 272 m, 20 Apr 1968.

*Quadrasetta flochi* was described from Trinidad, the type series off *Rattus rattus*, and other material off birds, *Dendrocincla fuliginosa*, *Pitangus sulfuratus*; and mammals, *Didelphis marsupialis*, *Akodon urichi*, *Heteromys anomalus*, *Nectomys squamipes*, *Oryzomys laticeps*, *Zygodontomys brevicauda*, and unidentified rat; other records: off *Thomasomys fuscatus*, Colombia (Brennan 1968a); and off *Proechimys guyanensis*, Surinam (Brennan and Lukoschus, 1971).

*Quadrasetta* sp. A

Two larvae off 2 *Oryzomys albigularis*, Táchira, 41 km SW San Cristóbal (Buena Vista), 2400 m, 18 and 24 Mar 1968; 1 off *O. capito*, Yaracuy, 20 km NW San Felipe (Minas de Aroa), 404 m, 8 Dec 1967; 9 off 4 *O. minutus*, 1 off *O. fulvescens*, 1 off *Thomasomys hylophilus* and 40 off 6 *Akodon bogotensis*, Táchira, 41 km SW San Cristóbal (Buena Vista), 2370-2420 m, 2-17 Mar 1968.

*Quadrasetta* sp. B

Eighteen larvae off 3 *Akodon urichi* and 9 off *Proechimys semispinosus*, Falcón, 84 km NW Carora (Cerro Socopo), 1262 m, 13 and 14 May 1968.

*Quadrasetta* sp. C

Twenty larvae off 2 *Monodelphis brevicaudata*, Falcón; 14 km ENE Mirimire (La Pastora), 122-160 m, 13 and 19 Nov 1967; 8 off *M. brevicaudata*, Sucre, 26 km ESE Carúpano (Manacal), 417 m, 22 Jul 1967; 1 off *M. brevicaudata*, Trujillo, 23 km NNW Valera (Río Motatan), 90 m, 5 Sep 1965; 9 off 2 *M. brevicaudata*, Trujillo, 19 km N Valera (Agua Viva), 164 m, 5-8 Sep 1965; 3 off *M. brevicaudata*, Guárico, 15 km NW Altigracia (Guatopo National Park), 680 m, 24 Sep 1966; 10 off 2 *M. brevicaudata*, Yaracuy, 20 km NW San Felipe

(Minas de Aroa), 403-425 m, 7 and 8 Dec 1967; 1 off *Marmosa robinsoni*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Cerro Santa Ana), 520 m, 25 Jul 1968; 2 off *Didelphis marsupialis*, Falcón, 14 km ENE Mirimire (La Pastora), 130 m, 20 Nov 1967; 26 off 3 *D. marsupialis*, Miranda, 3 km NE Caracas (Quebrada Chacaito), 1130-1160 m, 14 and 15 May 1967; 1 off *Artibeus lituratus*, Trujillo, 25 km NW Valera (Agua Santa), 90 m, 21 Aug 1965; 2 off *Heteromys anomalous*, Falcón, 14 km ENE Mirimire (La Pastora), 150 m, 13 Nov 1967; 8 off *H. anomalous*, Miranda, 3 km NE Caracas (Quebrada Chacaito), 1130 m, 18 May 1967; 12 off 2 *H. anomalous*, Sucre, 26 km ESE Carúpano (Manacal), 425-575 m, 20 and 27 Jul 1967; 1 off *Oryzomys albigularis*, Miranda, 5 km NNE Caracas (Pico Avila), 2104 m, 23 Aug 1965; 1 off *O. albigularis*, Distrito Federal, 31 km WSW Caracas (Alto No León), 23 Dec 1965; 25 off 5 *O. albigularis*, Miranda, 3 km NE Caracas (Quebrada Chacaito), 1130-1175 m, 14-18 May 1967; 1 off *Rhipidomys venezuelae*, Distrito Federal, 4 km NNW Caracas (Los Venados) 1470 m, 29 Jul 1965; 1 off *Zygodontomys brevicauda*, Sucre, 21 km E Cumaná, 20 m, 16 Dec 1966; 1 off *Z. brevicauda*, Nueva Esparta, 3 km NE La Asunción, 420 m, 28 Jan 1967; 1 off *Zygodontomys brevicauda*, Falcón, 14 km ENE Mirimire (La Pastora), 90 m, 15 Nov 1967; 4 off 2 *Proechimys guyanensis*, Bolívar, 44 km ESE Caicara (Hato La Florida), 45 m, 25 Apr 1967; 1 off *P. semispinosus*, Sucre, 25 km ESE Carúpano (Manacal), 190 m, 19 Jul 1967; 1 off *P. semispinosus*, Falcón, 19 km NW Urama, 19 Oct 1965; 3 off 2 *P. semispinosus*, Zulía, 21 km SW Machiques (Kasmera), 270 m, 20 Apr 1968; 1 off *Myotis larensis*, Falcón, Capatárida, 40 m, 27 Jun 1968.

#### *Quadrasetta* sp. D

Six larvae off *Marmosa robinsoni*, Falcón, Peninsula de Paraguaná, 15 km SSW Pueblo Nuevo (Cerro Santa Ana), 520 m, 25 Jul 1968.

Genus *Rhinibius* Brennan and Yunker, 1969

Type species: *Rhinibius tamandua* Brennan and Yunker, 1969.

*Rhinibius tamandua* Brennan and Yunker

*Rhinibius tamandua* Brennan and Yunker, 1969, p. 304.

This intranasal species was described from the type series off *Tamandua tetradactyla*, Pará, Brazil, and 1 larva off *Rhipidomys* sp., Bolívar, Venezuela.

A new record is: 9 larvae off *Tamandua longicaudata*, Monagas, 54 km S Maturín (Hato de Bejuco), 18 m, 6 Jun 1968.

Genus *Speleocola* Lipovsky, 1952

Type species: *Speleocola tadaridae* Lipovsky, 1952.

*Speleocola secunda* Brennan and Jones

*Speleocola secunda* Brennan and Jones, 1960, p. 509.

One larva off *Monodelphis brevicaudata*, Yaracuy, 20 km NW San Felipe (Minas de Aroa), 425 m, 7 Dec 1967; 5 off *Phyllostomus hastatus*, Barinas, Altamira, 794 m, 21 Dec 1967; 1 off *Artibeus jamaicensis*, Zulía, 42 km WNW Encontrados (El Rosario), 24 m, 4 Mar 1968; 1 off *Desmodus rotundus*, Trujillo, 23 km NW Valera (Agua Santa), 90 m, 6 Sep 1965; 5 off *Molossus aztecus*, Bolívar, 47 km ESE Caicara (Hato La Florida), 50 m, 19 Apr 1967; 1 off *Rhipidomys venezuelae*, Falcón, 80 km NW Carora (Río Socopo), 470 m, 22 May 1968; 12 off *R. fulviventer*, Monagas, 5 km NW Caripe (San Agustín), 1170 m, 26 Jun 1967; 1 off *Rattus rattus*, Trujillo, 30 km NW Valera (El Dividive), 90 m, 20 Oct 1965.

*S. secunda* was described from Trinidad, off *Micronycteris hirsuta*. Other records from: *Coendou rothschildi*, Panamá (Brennan and Yunker, 1966); *Peropteryx macrotis*, Isla Margarita (Brennan, 1967); *Peromyscus yucatanicus*, Yucatan Peninsula (Loomis, 1969, Loomis and Webb, 1969); *Phyllostomus discolor*, *Saccopteryx bilineata*, and *Molossus bondae*, Costa Rica; *Molossus sinaloae*, *Glossophaga soricina*, *Nyctomys sumichrasti*, and *S. bilineata*, Nicaragua; *Micronycteris megalotis* and *Desmodus rotundus*, Trinidad (Loomis and Webb, 1969); *Carollia perspicillata* and *S. bilineata*, Surinam (Brennan and Lukoschus, 1971).

*Speleocola* sp. A

Three larvae off *Carollia perspicillata*, Monagas, 3 km SW Caripe, 854 m, 11 Jul 1967; 36 off 6 *Peropteryx kappleri* same locality and date.

Genus *Vanidicus* Brennan and Jones, 1961

Type species: *Vanidicus tricosus* Brennan and Jones, 1961.

*Vanidicus chalepus* Brennan

*Vanidicus chalepus* Brennan, 1973, p. 107.

Known only from the type series off *Ory-*

*zomys albigularis*, Mérida, and other specimens off *Heteromys anomalus*, Falcón, and *Monodelphis breviceaudata*, Yaracuy.

*Vanidicus jojosti* Brennan

*Vanidicus jojosti* Brennan, 1973, p. 109.

Known only from the type series off *Proechimys guyannensis*, Monagas, and additional material off *Heteromys anomalus*, *Oryzomys albigularis*, and *P. guyannensis*, Miranda, off *P. guyannensis*, Bolívar, and *O. albigularis*, Mérida.

Genus *Wagenaaria* Brennan, 1967

Type species: *Wagenaaria similis* Brennan, 1967

*Wagenaaria similis* Brennan

*Wagenaaria similis* Brennan, 1967, p. 148.

Reed and Brennan (1974) record 1 larva off *Pteronotus davyi*, Yaracuy, 20 km NW San Felipe (Minas de Aroa), 395 m, 12 Dec 1967; and 1 off *P. parnellii*, Sucre, 12 km NE Güiría (Ensenada Cuarenta), 90 m, 17 Jun 1967.

The only other record of this bat chigger since described from 23 larvae off 3 *Mormoops megalophylla*, Curaçao, is that of Loomis (1969): 3 larvae off *Pteronotus davyi*, Campeche, Mexico.

Genus *Whartonia* Ewing, 1944

Type species: *Hannemania nudosetosa* Wharton, 1938

*Whartonia (Asolentria) guerrierensis* Hoffmann

*Whartonia guerrierensis* Hoffmann, 1960, p. 5.

Reed and Brennan (1974) record 2 larvae off *Mormoops megalophylla*, Sucre, 9 km NE Güiría (Ensenada Cuarenta), 1 m, 5 Jun 1967; and 9 off 3 *M. megalophylla*, 10 km NE Güiría (Río Salado), 90 m, 7 Jun 1967.

Described off *Mormoops megalophylla*, Guerrero, México, and later recorded by Brennan and Jones (1960) as *Whartonia trinidadensis*, off *M. megalophylla*, Trinidad; other records; off *Erophylla sezekornia*, Bahamas *Peropteryx macrotis*, Isla Margarita; *M. megalophylla*, Aruba and Curaçao (Brennan, 1967); off *M. megalophylla*, Campeche, México (Loomis, 1969).

*Whartonia (W.) nudosetosa* Wharton

*Hannemania nudosetosa* Wharton, 1938, p. 142.

About 300 larvae identified from 89 bats, summarily recorded by Reed and Brennan (1974): 6 *Peropteryx kappleri*, 1 *Noctilio labialis*, 1 *Chrotopterus auritus*, 1 *Glossophaga longirostris*, 20 *G. soricina*, 9 *Lionycteris spur-*

*relli*, 4 *Anoura caudifera*, 2 *A. geoffroyi*, 2 *Anoura* sp. A., 11 *Carollia breviceauda*, 23 *C. perspicillata*, 2 *Sturnira lilium*, 1 *Vampyrops aurarius*, 1 *Chiroderma villosum*, 1 *Artibeus jamaicensis*, 1 *Ametrida centurio*, 3 *Desmodus rotundus*.

Amazonas, 135-1140 m, 2 Feb, 7-27 Jul, and 6 Sep to Oct 1967; Apure, 24-76 m, 17 Jan 1966 and 21-26 Jan 1968; Barinas, 609-1070 m, 13 Dec 1967 to 4 Jan 1968; Bolívar, 50-1165 m, 7 Apr to 23 Jun 1966, 7 Apr 1967, and 30 Apr 1968; Carabobo, 900 m, 23 Nov 1967; Distrito Federal, 380 m, 21 Aug 1966; Falcón, 60-230 m, 14-25 Nov 1967; Mérida, 2190 m, 21 Apr 1966; Miranda, 90 m, 30 Dec 1965; Zulia, 37 and 1135 m, 27 Mar to 7 May 1968.

Described off *Artibeus jamaicensis* and *Peropteryx canina*, Yucatán. Other records from: *Nycteris borealis* and unidentified bats, Puebla, Mexico (Hoffman, 1949); leaf-nosed bat, Jamaica (Brennan, 1953); *Desmodus rotundus*, Trinidad (Brennan and Jones, 1960); *Carollia perspicillata*, Guatemala (Brennan and Dahmat, 1960); *C. perspicillata*, Trinidad (Brennan, 1967); *C. perspicillata*, Quintana Roo; *Artibeus jamaicensis*, *D. rotundus* and *Mimon cozumelae*, Yucatan (Loomis, 1969).

*Whartonia (W.) angulascuta* Reed and Brennan

*Whartonia (W.) angulascuta* Reed and Brennan 1974, p. 35

No records other than those of the original description: 7 larvae off *Chrotopterus auritus*, 1 off *Carollia breviceauda*, 5 off *C. perspicillata* and 2 off *Diphylla ecaudata*, from Monagas.

Genus A, sp. A

Seven larvae off *Marmosa robinsoni*, Falcón, Peninsula de Paraguaná, 15 km, SSW Pueblo Nuevo (Cerro Santa Ana), 550 m, 30 Jul 1968.

This taxon has affinities with *Euschoengastoides* Loomis (1954), of which it may be a subgenus.

*Euschoengastia* sensu lato *aemulata* Brennan and Jones

*Euschoengastia aemulata* Brennan and Jones, 1964, p. 307.

Recorded by Brennan and Jones (1964) from Venezuela: 8 larvae off bat, *Anoura caudata*, Aragua. No additional records.

\**Euschoengastia* sensu lato *megastyra*  
Brennan and Jones

*Euschoengastia megastyra* Brennan and Jones, 1960, p. 506.

Four larvae off *Phyllostomus discolor*, Amazonas, 108 km SSE Esmeralda (Río Mavaca), 140 m, 14 Apr 1967; 6 off *P. discolor*, Miranda, Biringo, 60 m, 23 Jan 1968; 10 off *Trachops cirrhosus*, Amazonas, 84 km SSE Esmeralda (Boca Mavaca), 185 m, 20 Feb 1966; 9 off *Carollia perspicillata*, Barinas, 7 km NNE Altamira (Agua Fria), 1070 m, 25 Dec 1967; 1 off *Desmodus rotundus*, Apure, 29 km SSW Santo Domingo (Nulita), 24 m, 31 Jan 1968.

This bat chigger, described off *Desmodus rotundus*, Trinidad, has also been recorded (possibly a subspecies) from Panamá off *D. rotundus*, *C. perspicillata* and opossum, *Didelphis marsupialis*, by Brennan and Yunker (1966).

\**Schoengastia* sensu lato *guyanensis* Floch and Abonnenc

*Schoengastia guyanensis* Floch and Abonnenc, 1941, p. 13.

One larva off *Nectomys squamipes*, Bolívar, 53 km ESE Caicara (Hato La Florida), 56 m, 6 May 1967; 18 off 2 *Sigmodontomys alstoni*, Bolívar 46 km NE Icabaru, 800 m, 12 May 1968; 4 off *S. alstoni*, 44 km ESE Caicara (Hato La Florida), 45 m, 2 May 1968.

Known also from French Guiana whence it was described off domestic dog and man, later recorded by Fauran (1959, 1960) off *Myoprocta acouchy*; Boshell and Kerr (1942) described this species as *Neoschoengastia nasuae* off *Nasua condace*, Colombia; other Colombian records: 15 larvae off *Proechimys* sp., Meta, San Juan de Arama (Los Micos), 1300 ft., 23 Apr 1957; 9 off *Nasuella olivacea*, Meta, Restrepo, date not available.

\**Trombicula* sensu lato *dunni* Ewing

*Trombicula dunni* Ewing, 1931, p. 12.

Five larvae off 2 *Holochilus brasiliensis*, 1 off *Oryzomys concolor*, 9 off *Philander opossum*, Bolívar, 20 km W La Paragua (Hato San José), 297-324 m, 27 Feb to 22 Mar 1967; 14 off 6 *Sigmodontomys alstoni*, Bolívar, 46 km NE Icabaru, 800 m, 15 May 1968; 1 off *Marmosa fuscata*, Monagas, 5 km NW Caripe (San Agustín), 1335 m, 6 Jul 1967; 2 off *S. alstoni*, Sucre, 26 km ESE Carúpano (Manacal), 413 m, 1 Aug 1967; 2 off *O. fulvescens*, Táchira, 41 km SW San Cristóbal (Buena Vista), 2398 m, 5 Mar 1968; 6 off *Sigmodon hispidus*, Carabobo, 5 km SE Montalbán (Sabana Aguirre), 562 m, 4 Nov 1967; 13 off 4 *S. hispidus*, 4 off *Proechimys semispinosus*, 2 off *Sciurus granatensis*, Barinas, Altamira, 600-794 m, 18 Dec 1967 to 8 Jan 1968; 3 off 3 *P. semispinosus*, Apure, 29 km SSW

Santo Domingo (Nulita), 24 m, 26 Jan to 6 Feb 1968; 1 off *Agouti paca*, Zulía, 60 km WNW Encontrados (Boca del Río de Oro), 73 m, 18 Mar 1968.

Described from the type series off *Dasyprocta punctata* and other specimens off *Nasua narica*, Chiriquí, Panamá. Other records: Brennan and Jones (1960) redescribed *T. dunni*, designated a lectotype, and identified 3 larvae off *Cuniculus paca*, Trinidad; 1 off *Oryzomys keyasi*, Peru (Brennan and Jones, 1961a); about 900 from 165 collections of a large variety of mammals and birds, Panamá (Brennan and Yunker, 1966); 45 from 27 lots of *Oryzomys albigularis*, *O. alfaroi*, *O. caliginosus*, *Heteromys australis*, and *Thomasomys fuscatus*, Colombia (Brennan, 1968a); 5 off *Philander opossum* and 1 off *Proechimys* sp., Rondônia, Brazil (Brennan, 1970b). Also described as: *Trombicula canis* Floch and Abonnenc, 1941, off dog and man, French Guiana; *T. landazuri* Boshell and Kerr, 1942, off *Proechimys chrisaeolus*, *Cuniculus paca*, and man, Colombia; *T. agutii* Floch and Fauran, 1957, off *Dasyprocta aguti*, French Guiana; *T. paragona* Brennan and Jones, 1960, off *Nectomys squamipes* and *Echimyus armatus*, Trinidad.

This neotropical species, very common on a variety of mammals and some birds, was regarded by Brennan and Yunker (1966) and Brennan (1968a) as polymorphic, with easily distinguishable forms, but occasionally showing intergradation in large series. Probably this taxon should be regarded as a species complex.

\**Trombicula* sensu lato *macrozota* Brennan and Jones

*Trombicula macrozota* Brennan and Jones, 1960, p. 518.

Two larvae off *Mormoops megalophylla*, Yacuy, 20 km NW San Felipe (Minas de Aroa), 395 m, 13 Dec 1967; 18 off 2 *M. megalophylla*, Sucre, 10 km NE Güiría (Ensenada Cuarenta), 90 m, 7 Jun 1967.

Described from numerous larvae off 2 *Mormoops megalophylla*, Trinidad. An additional record is 2 off *M. megalophylla*, Colombia, Santander, Macaregua San Gil, 18 Apr 1967, Dr. C. J. Marinkelle.

\**Trombicula* sensu lato *monops* Brennan and Jones

*Trombicula monops* Brennan and Jones, 1960, p. 524.

One larva off *Pteronotus suapurensis*, Yacuy, 20 km NW San Felipe (Minas de Aroa), 395 m, 12 Dec 1967.



Described from 20 specimens off 2 *Mormoops megalophylla*, Trinidad. Later recorded by Brennan and Yunker (1966) from Panamá off *Myotis nigricans*, *Pteronotus psilotis*, and unidentified bat. A new record is 1 off *Mormoops megalophylla*, Colombia, Santander, Macaregua, 8 Aug 1967, Dr. C. J. Marinkelle.

*Trombicula sensu lato* sp. A

One larva off *Oryzomys albigularis*, Miranda, 5 km NNE Caracas (Pico Avila), 2124 m, 28 Aug 1965; 1 off *O. albigularis* and 8 off 2 *Thomasomys lugens*, Trujillo, 14 km E Trujillo (Hacienda Misisi), 2210-2215 m, 26-29 Jan 1966; 9 off *O. minutus*, Mérida, 7 km SE Tabay (nr. La Coromoto), 3150 m, 22 Mar 1966; 10 off *Thomasomys* sp., 2 off *O. albigularis*, and 22 off 3 *T. lugens*, Mérida, 6-7 km ESE Tabay (nr. Middle Refugio), 2570-2600 m, 10-24 Apr 1966; 1 off *Vampyrops aurarius* Bolívar, 85 km SSE El Dorado (KM 125), 1032 m, 16 May 1966.

*Trombicula sensu lato* sp. B

Seventeen larvae off 2 *Sigmodon hispidus*, Carabobo, Montalbán (Potrerito and Sanjón), 598 m, 7 Mar 1967; 10 off 6 *S. hispidus*, Lara, 10 km N El Tocuyo (Caserio Boro), 537-900 m, 17-19 Jul 1967.

*Trombicula sensu lato* sp. F

One larva off *Heteromys anomalus*, Guárico, 15 km NW Altigracia (Guatopo National Park), 650 m, 1 Oct 1966; 2 off *Didelphis marsupialis* and 3 off *Mazama gouazoubira*, Bolívar, 20 km W La Paragua (Hato San Jose), 324-330 m, 16-19 Mar 1967; 1 off *D. marsupialis*, Miranda, 3 km NE Caracas (Quebrada Chacaito), 1150 m, 15 May 1967; 12 off 3 *Proechimys semispinosus*, Barinas, Altamira, 25 Dec 1967 to 11 Jan 1968; 12 off 6 *Proechimys semispinosus* and 1 off *Echimys armatus*, Apure, 29 km SSW Santo Domingo (Nulita), 24 m, 24 Jan to 5 Feb 1968.

# HOST-PARASITE LIST

## Class AMPHIBIA

### Frog

*Eutrombicula goeldii*

## Class REPTILIA

### Lizard

*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula tropica*  
*Odontacarus australis*  
*Parascia* sp. H

## Class AVES

### Bird

*Blankaartia sinnamaryi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula uebbi*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Microtrombicula fragibarba*  
*Microtrombicula* sp. D  
*Neoschoengastia americana*  
*Odontacarus comosus comosus*  
*Parascia manucli*  
*Parascia psittaci*

### Owl

*Blankaartia sinnamaryi*  
*Neoschoengastia americana*

## Class MAMMALIA

### Order MARSUPIALIA

#### Family Caenolestidae

*Caenolestes obscurus*  
*Crotiscus* sp. A  
*Peltoculus bobbiana*

#### Family Didelphidae

*Caluromys philander*  
*Eutrombicula goeldii*  
*Didelphis azarae*  
*Crotiscus* sp. A  
*Eutrombicula goeldii*  
*Eutrombicula neotropicalis*  
*Eutrombicula tanychaeta*  
*Eutrombicula vacillata*  
*Eutrombicula wolfsbargeri*

#### Didelphis marsupialis

*Colicus johnsoni*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Microtrombicula fragibarba*  
*Odontacarus tubercularis*  
*Odontacarus sunnanae*  
*Quadrasetta* sp. C  
*Trombicula* (s.l.) sp. F

#### Lutreolina crassicaudata

*Eutrombicula batatas*  
*Eutrombicula* sp. P

#### Marmosa cinerea

*Eutrombicula alfreddugesi*  
*Eutrombicula goeldii*



*Marmosa dryas*

- Crotiscus* sp. A
- Eutrombicula ericetivora*
- Eutrombicula lecgoffi*
- Eutrombicula tachirac*
- Odontacarus comosus comosus*

*Marmosa fuscata*

- Crotiscus desdentatus*
- Eutrombicula alfreddugesi*
- Eutrombicula batatas*
- Eutrombicula ericetivora*
- Eutrombicula goeldii*
- Eutrombicula lecgoffi*
- Eutrombicula marmosa*
- Eutrombicula pacae*
- Eutrombicula sipi*
- Hoffmannina reedi*

*Marmosa fuscata*

- Odontacarus tubercularis*
- Odontacarus sunnianae*
- Odontacarus comosus comosus*
- Trombicula* (s.l.) *dunni*

*Marmosa impavida*

- Crotiscus* sp. A
- Eutrombicula lukoschusi*
- Odontacarus comosus comosus*

*Marmosa murina*

- Eutrombicula goeldii*

*Marmosa robinsoni*

- Atelepalme* sp. A
- Crotiscus* sp. A
- Eutrombicula alfreddugesi*
- Eutrombicula batatas*
- Eutrombicula goeldii*
- Eutrombicula pacae*
- Eutrombicula tinami*
- Eutrombicula tropica*
- Hooperella vesperuginis*
- Microtrombicula fragibarba*
- Microtrombicula tragulata*
- Nasicola annereauxi*
- Odontacarus cayolargoensis*
- Odontacarus tubercularis*
- Parasecia aitkeni*
- Quadrasetta antillarum*
- Quadrasetta flochi*
- Quadrasetta* sp. C
- Quadrasetta* sp. D
- Genus A sp. A

*Marmosa* sp. A

- Eutrombicula goeldii*
- Odontacarus* (O.) *tubercularis*

*Marmosa* sp.

- Eutrombicula batatas*
- Eutrombicula webbi*
- Odontacarus tubercularis*
- Parasecia aitkeni*

*Metachirus nudicaudatus*

- Eutrombicula goeldii*
- Eutrombicula tropica*

*Monodelphis brevicaudata*

- Colicis colombiae*
- Colicis* sp. B
- Eutrombicula batatas*
- Eutrombicula goeldii*
- Kymoceta faitkeni*
- Odontacarus tubercularis*
- Quadrasetta flochi*
- Quadrasetta* sp. C
- Speleocola secunda*

*Vanidicus chalepus**Philander opossum*

- Crotiscus desdentatus*
- Eutrombicula alfreddugesi*
- Eutrombicula goeldii*
- Eutrombicula tropica*
- Parasecia manueli*
- Trombicula* (s.l.) *dunni*

## Order INSECTIVORA

## Family Soricidae

*Cryptotis thomasi*

- Crotiscus* sp. A
- Eutrombicula goeldii*
- Eutrombicula variabilis*
- Eutrombicula wolffenbarger*
- Hoffmannina* sp. A
- Odontacarus dienteslargus*
- Peltoculus bobbiannae*

## Order CHIROPTEA

## Family Desmodiidae

*Desmodus rotundus*

- Beamerella acutascuta*
- Hooperella saccopteryx*
- Hooperella vesperuginis*
- Loomisia desmodus*
- Microtrombicula boneti*
- Nycterinastes primus*
- Perissopalla precaria*
- Speleocola secunda*
- Whartonia nudosetosa*
- Euschoengastia* (s.l.) *megastyra*
- Diphylia ecaudata*
- Whartonia angulascuta*

## Family Emballonuridae

*Coromura brevisrostris*

- Hooperella saccopteryx*
- Loomisia junkeri*
- Peropteryx kappleri*
- Hooperella saccopteryx*
- Hooperella vesperuginis*
- Loomisia bulbocalcar*
- Loomisia desmodus*
- Perissopalla precaria*
- Perissopalla tanycera*
- Perissopalla* sp. A
- Perissopalla* sp. B
- Speleocola* sp. A
- Whartonia nudosetosa*

*Peropteryx macrotis*

- Hooperella saccopteryx*
- Loomisia bulbocalcar*
- Loomisia desmodus*
- Loomisia junkeri*
- Perissopalla precaria*
- Perissopalla tanycera*
- Perissopalla* sp. A
- Speleocola secunda*
- Whartonia guerrecensis*

*Peropteryx trinitatis*

- Loomisia junkeri*
- Perissopalla tanycera*
- Rhynchonycteris naso*
- Eutrombicula variabilis*

*Saccopteryx bilineata*  
*Beamerella acutascuta*  
*Eutrombicula goeldii*  
*Hooperella saccopteryx*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Odontacarus tubercularis*  
*Parasecia aitkeni*  
*Parasecia longicalcar*  
*Saccopteryx leptura*  
*Hooperella saccopteryx*  
*Saccopteryx* sp.  
*Hooperella saccopteryx*

#### Family Molossidae

*Molossops parvus*  
*Eutrombicula alfreddugesi*  
*Molossops planirostris*  
*Nasicola annercauxi*  
*Molossus ater*  
*Beamerella acutascuta*  
*Hooperella saccopteryx*  
*Hooperella vesperuginis*  
*Parasecia* sp. A  
*Molossus aztecus*  
*Beamerella* sp. A  
*Speleocola secunda*  
*Molossus molossus*  
*Eutrombicula goeldii*  
*Molossus sinaloae*  
*Beamerella* sp. A  
*Neoplatymops mattogrossensis*  
*Hoffmannina* sp. A  
*Microtrombicula* sp. C  
*Parasecia manuchi*  
*Parasecia* sp. A  
*Parasecia* sp. I  
*Promops nasutus*  
*Crotiscus desdentatus*  
*Tadarida gracilis*  
*Chiropetella australis*  
*Eutrombicula tropica*  
*Parasecia* sp. A  
*Parasecia* sp. E  
*Parasecia* sp. I

#### Family Mormoopidae

*Mormoops megalophylla*  
*Whartonia guerrerensis*  
*Trombicula* (s.l.) *macrozota*  
*Pteronotus davayi*  
*Wagenaaria similis*  
*Pteronotus parnellii*  
*Hooperella vesperuginis*  
*Microtrombicula boneti*  
*Nycterinastes primus*  
*Pteronotus psilotis*  
*Phalcophila antica*  
*Phalcophila postica*  
*Pteronotus suapurensis*  
*Trombicula* (s.l.) *monops*

#### Family Noctilionidae

*Noctilio labialis*  
*Eutrombicula batatas*  
*Perissopalla precaria*  
*Whartonia nudosetosa*

#### Family Phyllostomidae

*Ametrida centurio*  
*Whartonia nudosetosa*  
*Anoura caudifera*  
*Microtrombicula boneti*  
*Whartonia nudosetosa*  
*Anoura geoffroyi*  
*Nycterinastes primus*  
*Nycterinastes secundus*  
*Perissopalla* sp. F  
*Whartonia nudosetosa*  
*Anoura* sp. A  
*Nycterinastes primus*  
*Perissopalla precaria*  
*Whartonia nudosetosa*  
*Anoura* sp.  
*Loomisia desmodus*  
*Artibeus cinereus*  
*Eutrombicula goeldii*  
*Artibeus harti*  
*Microtrombicula carmenae*  
*Parasecia* sp. C  
*Artibeus jamaicensis*  
*Beamerella acutascuta*  
*Eutrombicula webbi*  
*Hooperella vesperuginis*  
*Microtrombicula carmenae*  
*Microtrombicula* sp. A  
*Odontacarus shoehesetosus*  
*Speleocola secunda*  
*Whartonia nudosetosa*  
*Artibeus lituratus*  
*Parasecia aitkeni*  
*Perissopalla precaria*  
*Quadrasetta* sp. C  
*Carollia brevicauda*  
*Eutrombicula goeldii*  
*Eutrombicula gacae*  
*Hooperella saccopteryx*  
*Hooperella vesperuginis*  
*Loomisia alcithoeae*  
*Loomisia desmodus*  
*Odontacarus tubercularis*  
*Perissopalla precaria*  
*Perissopalla* sp. A  
*Perissopalla* sp. B  
*Whartonia nudosetosa*  
*Whartonia angulascuta*  
*Carollia perspicillata*  
*Beamerella acutascuta*  
*Boshkeria punctata*  
*Hooperella vesperuginis*  
*Loomisia alcithoeae*  
*Loomisia desmodus*  
*Loomisia yunkerii*  
*Microtrombicula boneti*  
*Microtrombicula carmenae*  
*Microtrombicula* sp. C  
*Nycterinastes primus*  
*Parasecia manuclii*  
*Perissopalla precaria*  
*Perissopalla* sp. A  
*Perissopalla* sp. E  
*Perissopalla* sp. F  
*Perissopalla* sp. A  
*Whartonia nudosetosa*  
*Whartonia angulascuta*  
*Euschoengastia* (s.l.) *megastyra*

*Chiroderma trinitatum*  
*Perissopalla tanycera*  
*Chiroderma villosum*  
*Hooperella vesperuginis*  
*Whartonia nudosetosa*  
*Chrotropterus auritus*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Whartonia nudosetosa*  
*Whartonia angulascuta*  
*Glossophaga longirostris*  
*Eutrombicula goeldii*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Loomisia yunkerii*  
*Perissopalla precaria*  
*Whartonia nudosetosa*  
*Glossophaga soricina*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Nycterinastes primus*  
*Perissopalla precaria*  
*Perissopalla sp. D*  
*Whartonia nudosetosa*  
*Glossophaga sp.*  
*Hooperella vesperuginis*  
*Leptonycteris curosoae*  
*Apolonia tigipioensis*  
*Perissopalla precaria*  
*Lionycteris spurrelli*  
*Hooperella vesperuginis*  
*Nycterinastes primus*  
*Whartonia nudosetosa*  
*Lonchophylla robusta*  
*Loomisia desmodus*  
*Parasecia sp. D*  
*Lonchorhina aurita*  
*Nycterinastes primus*  
*Odontacarus schoeneseosus*  
*Odontacarus vergrandi*  
*Macrophylum macrophyllum*  
*Eutrombicula variabilis*  
*Micronycteris hirsuta*  
*Hooperella vesperuginis*  
*Micronycteris megalotis*  
*Beamerella acutascuta*  
*Eutrombicula batatas*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Micronycteris microtis*  
*Hooperella vesperuginis*  
*Odontacarus tubercularis*  
*Perissopalla precaria*  
*Micronycteris nicefori*  
*Hooperella vesperuginis*  
*Mimon crenulatum*  
*Beamerella acutascuta*  
*Hooperella saccopertyx*  
*Parasecia manueli*  
*Phylloderma stenops*  
*Hooperella vesperuginis*  
*Phyllostomus discolor*  
*Beamerella acutascuta*  
*Eutrombicula goeldii*  
*Hooperella vesperuginis*  
*Microtrombicula carmenae*  
*Perissopalla precaria*  
*Euschoengastia (s.l.) megastyra*  
*Phyllostomus elongatus*  
*Hooperella vesperuginis*

*Phyllostomus hastatus*  
*Eutrombicula goeldii*  
*Hooperella vesperuginis*  
*Nasicola annereauxi*  
*Spelcocola secunda*  
*Sturnira erythromus*  
*Hooperella vesperuginis*  
*Parasecia sp. F*  
*Parasecia sp. G*  
*Sturnira lilium*  
*Eutrombicula goeldii*  
*Loomisia desmodus*  
*Microtrombicula carmenae*  
*Perissopalla precaria*  
*Perissopalla sp. A*  
*Whartonia nudosetosa*  
*Sturnira ludovici*  
*Microtrombicula carmenae*  
*Sturnira tildae*  
*Hooperella vesperuginis*  
*Trachops cirrhosus*  
*Beamerella acutascuta*  
*Hooperella vesperuginis*  
*Loomisia desmodus*  
*Euschoengastia (s.l.) megastyra*  
*Vampyressa pusilla*  
*Crotiscus desdentatus*  
*Loomisia desmodus*  
*Odontacarus tubercularis*  
*Vampyrops aurarius*  
*Trombicula (s.l.) sp. A*  
*Whartonia nudosetosa*  
*Vampyrops helleri*  
*Crotiscus desdentatus*  
*Eutrombicula nadchatrami*  
*Odontacarus tubercularis*

## Family Vespertilionidae

*Eptesicus fuscus*  
*Perissopalla sp. C*  
*Eptesicus montosus*  
*Albeckia albecki*  
*Histiotus sp. A*  
*Albeckia albecki*  
*Parasecia atkeni*  
*Myotis larensis*  
*Quadrasetta sp. C*

## Order PRIMATES

Family Cebidae  
*Callicebus torquatus*  
*Eutrombicula tropica*

## Order EDENTATA

Family Myrmecophagidae  
*Cyclopes didactylus*  
*Eutrombicula alfreddugesi*  
*Tamandua longicaudata*  
*Rhinibius tamandua*  
*Tamandua mexicana*  
*Eutrombicula goeldii*

## Order LAGOMORPHA

Family Leporidae  
*Sylvilagus brasiliensis*  
*Apolonia tigipioensis*  
*Eutrombicula alfreddugesi*

*Sylvilagus floridanus*  
*Apolonia tigipioensis*  
*Atelepalme* sp. A.  
*Eutrombicula batatas*  
*Neotrombicula americana*  
*Odontacarus tubercularis*  
*Quadrasetta antillarum*

## Order RODENTIA

## Family Cricetidae

*Akodon bogotensis*  
*Crotiscus* sp. A  
*Eutrombicula neotropicalis*  
*Eutrombicula tachirae*  
*Odontacarus dienteslargus*  
*Odontacarus tuberculohirsutus*  
*Peltoculus bobbiannae*  
*Quadrasetta* sp. A  
*Akodon urichi*  
*Colicus* sp. A  
*Eutrombicula goeldii*  
*Kymocta inca*  
*Odontacarus tubercularis*  
*Parasecia manuei*  
*Quadrasetta flochi*  
*Quadrasetta* sp. A  
*Calomys hummelincki*  
*Atelepalme* sp. A  
*Chilomys instans*  
*Eutrombicula tachirae*  
*Odontacarus dienteslargus*  
*Daptomys venezuelae*  
*Hoffmannina* sp. B  
*Holochilus brasiliensis*  
*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Trombicula* (s.l.) *dunni*  
*Neacomys tenuipes*  
*Kymocta inca*  
*Nectomys alfari*  
*Crotiscus desdentatus*  
*Odontacarus tubercularis*  
*Nectomys squamipes*  
*Aitkenius ciscunctatus*  
*Crotiscus desdentatus*  
*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula tropica*  
*Pseudoschoengastia bulbifera*  
*Schoengastia* (s.l.) *guyanensis*  
*Oryzomys albigularis*  
*Aitkenius senticosus*  
*Colicus pichindensis*  
*Colicus* sp. A  
*Crotiscus desdentatus*  
*Crotiscus* sp. A  
*Eutrombicula cricetivora*  
*Eutrombicula leegoffi*  
*Eutrombicula lukoschusi*  
*Eutrombicula marmosa*  
*Eutrombicula nadchatrami*  
*Eutrombicula neotropicalis*  
*Eutrombicula tachirae*  
*Eutrombicula variabilis*  
*Eutrombicula webbi*  
*Odontacarus comosus comosus*  
*Odontacarus comosus novemsetus*

*Odontacarus dienteslargus*  
*Odontacarus sunniannae*  
*Odontacarus tiptoni*  
*Odontacarus tubercularis*  
*Odontacarus vanderhammeni*  
*Peltoculus bobbiannae*  
*Quadrasetta flochi*  
*Quadrasetta* sp. A  
*Quadrasetta* sp. C  
*Vanidicus chalepus*  
*Vanidicus jojosi*  
*Trombicula* (s.l.) sp. A  
*Oryzomys bicolor*  
*Eutrombicula alfreddugesi*  
*Eutrombicula goeldii*  
*Oryzomys capito*  
*Eutrombicula goeldii*  
*Odontacarus tubercularis*  
*Quadrasetta flochi*  
*Quadrasetta* sp. A  
*Oryzomys concolor*  
*Eutrombicula alfreddugesi*  
*Eutrombicula tropica*  
*Odontacarus tubercularis*  
*Trombicula* (s.l.) *dunni*  
*Oryzomys fulvescens*  
*Crotiscus* sp. A  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Odontacarus tubercularis*  
*Quadrasetta* sp. A  
*Oryzomys minutus*  
*Aitkenius senticosus*  
*Crotiscus desdentatus*  
*Crotiscus* sp. A  
*Eutrombicula goeldii*  
*Eutrombicula cricetivora*  
*Eutrombicula goeldii*  
*Eutrombicula jenkensi*  
*Eutrombicula leegoffi*  
*Eutrombicula longiseta*  
*Eutrombicula lukoschusi*  
*Eutrombicula neotropicalis*  
*Eutrombicula tachirae*  
*Eutrombicula venezuelensis*  
*Eutrombicula webbi*  
*Eutrombicula wolffenbargerii*  
*Hoffmannina* sp. A  
*Odontacarus comosus comosus*  
*Odontacarus comosus novemsetus*  
*Odontacarus dienteslargus*  
*Odontacarus tiptoni*  
*Odontacarus tubercularis*  
*Odontacarus tuberculohirsutus*  
*Odontacarus vanderhammeni*  
*Odontacarus vergrandi*  
*Peltoculus bobbiannae*  
*Quadrasetta* sp. A  
*Trombicula* (s.l.) sp. A  
*Oryzomys* sp.  
*Crotiscus desdentatus*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Peltoculus bobbiannae*  
*Quadrasetta* sp. A  
*Rhipidomys couesi*  
*Eutrombicula goeldii*  
*Rhipidomys fulviventris*  
*Microtrombicula fragibarba*

- Speleocola secunda*  
*Rhipidomys leucodactylus*  
*Parasecia manueli*  
*Rhipidomys macconnelli*  
*Eutrombicula tropica*  
*Hoffmannina* sp. B  
*Kymoceta faitkeni*  
*Kymoceta inca*  
*Rhipidomys venezuelae*  
*Eutrombicula goeldii*  
*Microtrombicula carmenae*  
*Microtrombicula fragibarba*  
*Parasecia aitkeni*  
*Parasecia longicalcar*  
*Quadrasetta* sp. C  
*Speleocola secunda*  
*Rhipidomys venustus*  
*Crotiscus* sp. A  
*Eutrombicula cricetivora*  
*Eutrombicula leegoffi*  
*Eutrombicula lukoschusi*  
*Eutrombicula webbi*  
*Microtrombicula fragibarba*  
*Odontacarus comosus comosus*  
*Parasecia soucouyanti*  
*Speleocola secunda*  
*Rhipidomys* sp.  
*Eutrombicula pacae*  
*Eutrombicula neotropicalis*  
*Kymoceta inca*  
*Rhinibius tamandua*  
*Sigmodon hispidus*  
*Colicus pichindensis*  
*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula tropica*  
*Interceutestrix exigua*  
*Odontacarus tubercularis*  
*Odontacarus sunniana*  
*Parasecia aitkeni*  
*Pseudoschoengastia bulbifera*  
*Quadrasetta flochi*  
*Trombicula* (s.l.) *dunni*  
*Trombicula* (s.l.) sp. B  
*Sigmomys alstoni*  
*Colicus colombiae*  
*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula tropica*  
*Hooperella saccopteryx*  
*Kymoceta inca*  
*Odontacarus tubercularis*  
*Parasecia aitkeni*  
*Parasecia manueli*  
*Parasecia* sp. H  
*Quadrasetta flochi*  
*Schoengastia* (s.l.) *guyanensis*  
*Trombicula* (s.l.) *dunni*  
*Thomasomys aureus*  
*Peltochus bobbiana*  
*Thomasomys hylophilus*  
*Aitkenius senticosus*  
*Crotiscus* sp. A  
*Eutrombicula goeldii*  
*Eutrombicula lukoschusi*  
*Eutrombicula tachirae*  
*Eutrombicula webbi*  
*Odontacarus tubercularis*  
*Odontacarus comosus comosus*  
*Odontacarus dientestargus*  
*Peltochus bobbiana*  
*Quadrasetta* sp. A  
*Thomasomys laniger*  
*Eutrombicula cricetivora*  
*Eutrombicula goeldii*  
*Eutrombicula jenkinsi*  
*Eutrombicula venezuelensis*  
*Eutrombicula webbi*  
*Eutrombicula wolffenbarger*  
*Hoffmannina reedi*  
*Hoffmannina* sp. A  
*Odontacarus dientestargus*  
*Odontacarus schoenestosus*  
*Odontacarus pugnatus*  
*Odontacarus tuberculohirsutus*  
*Odontacarus vergrandi*  
*Thomasomys lugens*  
*Crotiscus desdentatus*  
*Eutrombicula goeldii*  
*Eutrombicula jenkinsi*  
*Eutrombicula leegoffi*  
*Eutrombicula longiseta*  
*Eutrombicula neotropicalis*  
*Eutrombicula variabilis*  
*Eutrombicula webbi*  
*Hoffmannina reedi*  
*Odontacarus tubercularis*  
*Odontacarus comosus novemsetus*  
*Odontacarus tiptoni*  
*Odontacarus vanderhammeni*  
*Trombicula* (s.l.) sp. A  
*Thomasomys vestitus*  
*Odontacarus schoenestosus*  
*Odontacarus tiptoni*  
*Thomasomys* sp.  
*Hoffmannina* sp. A  
*Peltochus bobbiana*  
*Trombicula* (s.l.) sp. A  
*Zygodontomys brevicauda*  
*Aitkenius ciscunctatus*  
*Atelapalmes smarma*  
*Boshkerria punctata*  
*Crotiscus desdentatus*  
*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula tropica*  
*Neoschoengastia americana*  
*Odontacarus tubercularis*  
*Parasecia longicalcar*  
*Parasecia manueli*  
*Quadrasetta antillarum*  
*Quadrasetta flochi*  
*Quadrasetta* sp. C

## Family Dasyproctidae

- Agouti paca*  
*Boshkerria punctata*  
*Eutrombicula alfreddugesi*  
*Eutrombicula goeldii*  
*Eutrombicula pacae*  
*Odontacarus tubercularis*  
*Parasecia aitkeni*  
*Parasecia manueli*  
*Trombicula* (s.l.) *dunni*



*Dasyprocta aguti*  
*Eutrombicula alfreddugesi*  
*Eutrombicula goeldii*  
*Eutrombicula tinami*  
*Odontacarus tubercularis*

*Dasyprocta fuliginosa*  
*Colicus* sp. B  
*Eutrombicula goeldii*

*Dasyprocta variegata*  
*Eutrombicula goeldii*  
*Parasecia aitkeni*

*Dasyprocta* sp.  
*Eutrombicula goeldii*  
*Eutrombicula pacae*  
*Hoffmannina* sp. A  
*Odontacarus tubercularis*

*Myoprocta pratti*  
*Eutrombicula alfreddugesi*  
*Eutrombicula goeldii*

#### Family Echimyidae

*Echimyus armatus*  
*Colicus johnsoni*  
*Crotiscus desdentatus*  
*Eutrombicula alfreddugesi*  
*Eutrombicula spipi*  
*Eutrombicula tropica*  
*Hooperella vesperuginis*  
*Parasecia aitkeni*  
*Parasecia manucli*  
*Trombicula* (s.l.) sp. F

*Echimyus semivillosus*  
*Eutrombicula batatas*  
*Parasecia aitkeni*  
*Quadrasetta* sp. C

*Proechimys canicollis*  
*Eutrombicula goeldii*

*Proechimys guyanensis*  
*Arisocerus amapensis*  
*Boshkerria punctata*  
*Buclypeus daptops*  
*Colicus* sp. C  
*Eutrombicula alfreddugesi*  
*Eutrombicula goeldii*  
*Eutrombicula tinami*  
*Eutrombicula tropica*  
*Hooperella saccopteryx*  
*Intercutestrix mondolfii*  
*Intercutestrix pisinna*  
*Parasecia manucli*  
*Perissopalla precaria*  
*Polyopadum chactolecanium*  
*Quadrasetta* sp. C  
*Vanidicus jofoiti*

*Proechimys semispinosus*  
*Aitkenius ciscunctatus*  
*Aitkenius hystricosus*  
*Boshkerria punctata*  
*Buclypeus daptops*  
*Crotiscus desdentatus*  
*Eutrombicula alfreddugesi*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Eutrombicula pacae*  
*Eutrombicula tinami*  
*Eutrombicula tropica*  
*Eutrombicula neotropialis*  
*Intercutestrix exigua*

*Odontacarus cayolargoensis*  
*Odontacarus tubercularis*  
*Odontacarus sunniana*  
*Parasecia aitkeni*  
*Parasecia longicalcar*  
*Parasecia manucli*  
*Parasecia* sp. A  
*Parasecia* sp. C  
*Pseudoschoengastia bulbifera*  
*Quadrasetta flochi*  
*Quadrasetta* sp. B  
*Quadrasetta* sp. C  
*Trombicula* (s.l.) dunni  
*Trombicula* (s.l.) sp. F  
*Proechimys* sp.  
*Odontacarus sunniana*  
*Polyopadum aspasium*  
*Polyopadum tricholecanium*

#### Family Heteromyidae

*Heteromys anomalus*  
*Anomalaspis ambigua*  
*Boshkerria punctata*  
*Crotiscus desdentatus*  
*Crotiscus* sp. A  
*Eutrombicula goeldii*  
*Kymoceta zulia*  
*Odontacarus comosus novemsetus*  
*Odontacarus tubercularis*  
*Parasecia manucli*  
*Polyopadum chactolecanium*  
*Pseudoschoengastia bulbifera*  
*Quadrasetta flochi*  
*Quadrasetta* sp. C  
*Vanidicus chalepus*  
*Vanidicus jofoiti*  
*Trombicula* (s.l.) sp. F  
*Heteromys* sp. A  
*Eutrombicula goeldii*  
*Parasecia aitkeni*

#### Family Hydrochaeridae

*Hydrochaeris hydrochaeris*  
*Blankaartia sinnamaryi*

#### Family Muridae

*Mus musculus*  
*Apolonia tigipiocensis*  
*Rattus norvegicus*  
*Eutrombicula nadchatrami*  
*Odontacarus tubercularis*  
*Rattus rattus*  
*Crotiscus desdentatus*  
*Eutrombicula batatas*  
*Eutrombicula goeldii*  
*Hooperella saccopteryx*  
*Microtrombicula tragulata*  
*Microtrombicula* sp. B  
*Odontacarus tubercularis*  
*Speleocola secunda*

#### Family Sciuridae

*Sciurus aestuans*  
*Crotiscus desdentatus*  
*Sciurus granatensis*  
*Crotiscus desdentatus*

*Crotiscus* sp. A  
*Eutrombicula goeldii*  
*Eutrombicula tropica*  
*Odontacarus sunniana*  
*Odontacarus tubercularis*  
*Scitrus* sp.  
*Trombicula* (s.l.) *dunni*

## Order CARNIVORA

Family Procyonidae  
*Potos flavus*  
*Microtrombicula tragulata*  
*Microtrombicula* sp. B

## Order PERISSODACTYLA

Family Tapiridae  
*Tapirus terrestris*  
*Eutrombicula goeldii*

## Order ARTIODACTYLA

Family Cervidae  
*Mazama americana*  
*Eutrombicula goeldii*  
*Odontacarus tubercularis*  
*Mazama gouazoubira*  
*Eutrombicula goeldii*  
*Trombicula* (s.l.) sp. F

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