

A list of ectoparasites of Colombian bats

by

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Abstract: Of 3,860 Colombian bats, belonging to 109 species, 1,235 individuals (32%) of 100 species were infested with ectoparasites. A total of 3,545 ectoparasites pertaining to 88 species were obtained (**Mesostigmata:** 1 Halarachnidae; 19 Macronyssidae; 4 Spelaeorhynchidae; 104 Spinturnicidae. **Ixodides:** 449 Argasidae. **Trombidiformes:** 1 Spelognathidae; 340 Trombiculidae. **Sarcoptiformes:** 170 Listrophoridae. **Hemiptera:** 16 Cimidae; 4 Polycetenidae. **Diptera:** 7 Nycteribiidae; 2405 Streblidae. **Siphonaptera:** 25 Pulicidae). No ectoparasites were recovered from 9 species of bats.

Bats may harbor numerous micro-organisms and parasites which are capable of infecting man or domestic animals (Marinkelle and Grose, 1972). Some of these organisms can be transmitted by ectoparasites from one host to another (Constantine, 1970; Tamsitt and Valdivieso, 1970). Knowledge of the existing species of ectoparasites of bats is of importance for a better understanding of certain epidemiological problems (Marinkelle, 1966).

Very little literature exists on the ectoparasites of Colombian bats (Anciaux de Faveaux, 1971; Boshell and Kerr, 1942; Brennan, 1970 a, b; Clark, 1967; Kohls *et al.*, 1969; Machado-Allison and Antequera, 1969; Marinkelle, 1967; Wenzel, 1970; Wenzel and Tipton, 1966).

METHODS

We examined 3,860 bats for ectoparasites immediately after death, the bats were separately packed in white paper bags to avoid mixing up of parasites from different bat species and transported to Bogota in dry-ice. The parasites were collected and preserved by standard techniques. Nasal washings with saline solution were used to recover intranasal mites; magnification for examination was between 60 and 240 X. No skin scrapings were carried out. Many preserved parasites were

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shipped to specialists for identification or verification of preliminary identifications (see Acknowledgements).

RESULTS

From 3,860 bats of 109 species, only 1,235 bats (32 percent) belonging to 100 species were infested with ectoparasites. A total of 3,545 ectoparasites of 88 species were obtained (Table I). No ectoparasites were found on 9 bat species.

The parasites marked with an asterisk (*) in Table 1 represent new records for Colombia.

DISCUSSION

Since 1961, when we began our search for ectoparasites of bats, 53 of those listed were described as new taxa, 56 were recorded for the first time from Colombia, and 52 new bat host species were found to be infested.

Certainly more species have yet to be recovered from bats and the role of the ectoparasite in transmission of diseases is still a virgin field for research. The list of ectoparasites in this publication may facilitate further work in related fields.

Very few temporary parasites such as Cimicidae, Siphonaptera and Nycteribiidae are recorded, probably due to the fact that no efforts were made to collect ectoparasites in the field immediately from live animals. Few Trombidiformes were found since no skin scrapings were made for the detection of intradermal chiggers. Although *Cavernicola pilosa* were often found associated with bats in the vicinity of their roosts, they were never found on the bats themselves.

TABLE 1

Ectoparasites of Colombian bats

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
<i>Alabidocarpus</i> Ewing (Listrophoridae)	50	546	<i>Pteronotus psilotis</i>
	20	3	<i>Pteronotus davyi</i>
	50	88	<i>Artibeus lituratus</i>
	50	201	<i>Molossus molossus</i> *
* <i>Anastrebla modestini</i> Wenzel (Streblidae)	5	20	<i>Anoura gecffroyi</i>
	1	4	<i>Lionycteris spurelli</i>
* <i>Anatrichobius scorzai</i> Wenzel (Streblidae)	1	20	<i>Myotis albescens</i>
* <i>Antricola mexicanus</i> Hoffmann (Argasidae)	7	546	<i>Pteronotus psilotis</i>
	41	360	<i>Mormoops megalophylla</i>
<i>Aspidoptera busckii</i> Coquillett (Streblidae)	2	22	<i>Sturnira lilium</i>
	1	88	<i>Artibeus lituratus</i>
* <i>A. delatorrei</i> Wenzel (Streblidae)	6	22	<i>Sturnira lilium</i>

TABLE 1 (Cont.)

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
	1	1	<i>Sturnira magna</i>
	2	21	<i>Sturnira tildae</i>
	1	300	<i>Desmodus rotundus</i>
* <i>Basilis</i> n. sp.? (according to Peterson) (Nycteribiidae)	4	1	<i>Eptesicus fuscus</i>
	1	30	<i>Vampyrops helleri</i>
	1	4	<i>Vampyrops vittatus</i>
	1	10	<i>Myotis nigricans</i>
* <i>Beamerella acutascuta</i> Brennan (Trombiculidae)	3	360	<i>Mormoops megalophylla</i>
* <i>Beamerella</i> n. sp.? (according to Brennan) (Trombiculidae)	1	360	<i>Mormoops megalophylla</i>
	1	300	<i>Desmodus rotundus</i>
<i>Blankaartia sinnamaryi</i> (Floch & Fauran) (Trombiculidae)	1	12	<i>Tadarida laticaudata</i>
* <i>Cameronieta thomasi</i> Machado-Allison (Spinturnicidae)	17	45	<i>Pteronotus parnelli</i>
	2	62	<i>Pteronotus suapurensis</i>
<i>Cimex hemipterus</i> (Fabricius) (Cimicidae)	12	82	<i>Peropteryx macrotis</i>
	4	4	<i>Peropteryx kappleri</i>
<i>Exastinion clovisi</i> (Pessoa & Guimaraes) (Streblidae)	9	20	<i>Anoura geoffroyi</i>
Halarachnidae (unidentified genus)	1	546	<i>Pteronotus psilotis</i>
<i>Hesperoctenes fumarinus</i> (Westwood), (Polycetenidae)	3	71	<i>Molossus bondae</i>
<i>Macronyssoides kochi</i> Fonseca (Macronyssidae)	1	3	<i>Eptesicus brasiliensis</i>
	1	1	<i>Eptesicus melanopterus</i>
* <i>Mastoptera guimaraesi</i> Wenzel (Streblidae)	11	144	<i>Phyllostomus hastatus</i>
<i>M. minuta</i> Costalima (Streblidae)	3	144	<i>Phyllostomus hastatus</i>
<i>Megistopoda aranea</i> (Coquillet) (Streblidae)	1	36	<i>Phyllostomus discolor</i>
	1	2	<i>Vampyriscus bidens</i>
	1	30	<i>Artibeus jamaicensis</i>
	2	88	<i>Artibeus lituratus</i>
	1	12	<i>Artibeus cinereus</i>
	1	2	<i>Artibeus pumilio</i>
* <i>M. proxima</i> (Seguy) (Streblidae)	1	22	<i>Sturnira lilium</i>
	1	4	<i>Sturnira bidens</i>
	1	15	<i>Uroderma bilobatum</i>
	1	4	<i>Uroderma magnirostris</i>
	1	10	<i>Chiroderma villosum</i>
	1	30	<i>Artibeus jamaicensis</i>
<i>Metalasmus pseudopterus</i> Coquillet (Streblidae)	1	30	<i>Artibeus jamaicensis</i>
<i>Nasicola annereauxi</i> Brennan & Yunker (Trombiculidae)	1	144	<i>Phyllostomus hastatus</i>
* <i>Neospeleognathopsis phyllostomi</i> Clark (Spelaeorhynchidae)	3	144	<i>Phyllostomus hastatus</i>
* <i>Neotrichobius delicatus</i> Machado-Allison (Streblidae)	1	15	<i>Uroderma bilobatum</i>
* <i>Noctiliostrebula maai</i> Wenzel (Streblidae)	33	80	<i>Noctilio labialis</i>

TABLE 1 (Cont.)

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
* <i>N. traubi</i> Wenzel	9	3	<i>Noctilio leporinus</i>
* <i>Nycterophilia fairchildi</i> Wenzel (Streblidae)	20	360	<i>Mormoops megalophylla</i>
	9	45	<i>Pteronotus parnelli</i>
	195	546	<i>Pteronotus psilotis</i>
	22	62	<i>Pteronotus suapurensis</i>
* <i>N. parnelli</i> Wenzel (Streblidae)	1	82	<i>Peropteryx macrotis</i>
	1	546	<i>Pteronotus psilotis</i>
* <i>Nycterophilia</i> n. sp.? (according to Wenzel) (Streblidae)	29	360	<i>Mormoops megalophylla</i>
	2	45	<i>Pteronotus parnelli</i>
	2	62	<i>Pteronotus suapurensis</i>
	1	1	<i>Micronycteris minuta</i>
	1	1	<i>Micronycteris hirsuta</i>
	1	300	<i>Desmodus rotundus</i>
	1	201	<i>Molossus molossus</i>
* <i>Nycterophilia</i> n. sp.? (according to Wenzel) (Streblidae)	1	360	<i>Mormoops megalophylla</i>
* <i>Ornithodoros azteci</i> Matheson (Argasidae)	46	82	<i>Peropteryx macrotis</i>
	3	259	<i>Glossophaga soricina</i>
	1	2	<i>Leptonycteris curasoae</i>
	1	503	<i>Carollia perspicillata</i>
	1	1	<i>Chiroderma trinitatum</i>
	143	30	<i>Artibeus jamaicensis</i>
	63	300	<i>Desmodus rotundus</i>
* <i>O. brodyi</i> Matheson (Argasidae)	4	503	<i>Carollia perspicillata</i>
	2	216	<i>Natalus tumidirostris</i>
* <i>O. hasei</i> (Schulze) (Argasidae)	2	3	<i>Noctilio leporinus</i>
	4	80	<i>Noctilio labialis</i>
	1	36	<i>Phyllostomus discolor</i>
	54	30	<i>Artibeus jamaicensis</i>
	2	1	<i>Rhogeessa parvula</i>
	1	1	<i>Lasiurus cinereus</i>
	3	201	<i>Molossus molossus</i>
* <i>Ornithodoros</i> close to <i>hasei</i> (Schulze) (Argasidae)	1	80	<i>Noctilio labialis</i>
	1	1	<i>Vampyressa nymphaea</i>
	1	30	<i>Artibeus jamaicensis</i>
* <i>O. marinkellei</i> Kohls, Clifford & Jones (Argasidae)	49	45	<i>Pteronotus parnellii</i>
	5	546	<i>Pteronotus psilotis</i>
* <i>O. rossi</i> Kohls, Sonnenshine & Clifford (Argasidae)	1	1	<i>Micronycteris megalotis</i>
	4	300	<i>Desmodus rotundus</i>
* <i>O. yumatensis</i> (Cooley & Kohls) (Argasidae)	7	82	<i>Peropteryx macrotis</i>
	1	4	<i>Sarcopteryx bilineata</i>
<i>Paradyschiria parvula</i> Falcoz (Streblidae)	6	3	<i>Noctilio leporinus</i>
	203	80	<i>Noctilio labialis</i>
* <i>P. parvuloides</i> Wenzel (Streblidae)	2	80	<i>Noctilio labialis</i>
<i>Paraeuctenodes longipes</i> Pessoa &	1	546	<i>Carollia perspicillata</i>

TABLE 1 (Cont.)

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
Guimaraes (Strebliidae)			
<i>Paratrichobius "longicrus" complex"</i>	1	144	<i>Phyllostomus hastatus</i>
(Strebliidae)	1	8	<i>Ectophylla macconnelli</i>
	3	88	<i>Artibeus lituratus</i>
	1	3	<i>Artibeus concolor</i>
	2	12	<i>Molossops temminckii</i>
	1	1	<i>Molossops planirostris</i>
* <i>Periglischrus acutisternus</i> Machado-Allison (Spinturnicidae)	3	36	<i>Phyllostomus discolor</i>
	2	144	<i>Phyllostomus hastatus</i>
* <i>P. herrerae</i> Machado-Allison (Spinturnicidae)	3	300	<i>Desmodus rotundus</i>
<i>P. iheringi</i> Oudemans (Spinturnicidae)	1	259	<i>Glossophaga soricina</i>
	11	12	<i>Glossophaga longirostris</i>
	26	88	<i>Artibeus lituratus</i>
	2	3	<i>Artibeus concolor</i>
* <i>P. ojasii</i> Machado-Allison (Spinturnicidae)	1	22	<i>Sturnira lilium</i>
	2	11	<i>Sturnira ludovici</i>
* <i>P. torreatbai</i> Machado-Allison (Spinturnicidae)	4	22	<i>Sturnira lilium</i>
* <i>P. setosus</i> Machado-Allison (Spinturnicidae)	6	259	<i>Glossophaga soricina</i>
	1	1	<i>Choeroniscus minor</i>
	1	88	<i>Artibeus lituratus</i>
Polyctenidae, unidentified genus	1	30	<i>Eumops trumbulli</i>
* <i>Radfordiella carolliae</i> Radovsky (Macronyssidae)	1	503	<i>Carollia perspicillata</i>
* <i>R. desmodi</i> Radovsky (Macronyssidae)	1	503	<i>Carollia perspicillata</i>
* <i>Radfordiella</i> sp. near <i>R. oudemanni</i> Fonseca (Macronyssidae)	1	13	<i>Rhynchonycteris naso</i>
<i>Rhynchopsylla pulex</i> Haller (Pulicidae)	1	1	<i>Molossops greenhalli</i>
	21	201	<i>Molossus molossus</i>
	1	4	<i>Tadarida brasiliensis</i>
	2	3	<i>Eumops glaucinus</i>
<i>Speiseria ambigua</i> Kessel (Strebliidae)	1	2	<i>Lonchophylla robusta</i>
	1	1	<i>Lonchophylla thomasi</i>
	29	503	<i>Carollia perspicillata</i>
	1	21	<i>Carollia subrufa</i>
	1	12	<i>Carollia castanea</i>
	5	88	<i>Artibeus lituratus</i>
	1	2	<i>Artibeus watsoni</i>
* <i>Spelaorhynchus</i> sp. (Spelaorhynchidae)	1	503	<i>Carollia perspicillata</i>
Speleognathidae (unidentified genus)	1	30	<i>Eumops trumbulli</i>
<i>Spinturnix americanus</i> (Banks) (Spinturnicidae)	20	10	<i>Myotis nigricans</i>
<i>S. bakeri</i> Rudnick (Spinturnicidae)	2	1	<i>Histiotus montanus</i>
* <i>Steatonyssus</i> sp. near <i>occidentalis</i> Ewing (Macronyssidae)	14	1	<i>Histiotus montanus</i>

TABLE 1 (Cont.)

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
<i>*Strebla altmani</i> Wenzel (Streblidae)	2	10	<i>Macrophyllum macrophyllum</i>
	2	2	<i>Natalus stramineus</i>
<i>*S. alvarezi</i> Wenzel (Streblidae)	1	144	<i>Phyllostomus hastatus</i>
<i>*S. desmodi</i> Wenzel (Streblidae)	42	300	<i>Desmodus rotundus</i>
	1	1	<i>Histiotus montanus</i>
	1	1	<i>Lasiurus ega</i>
	1	1	<i>Lasiurus borealis</i>
	11	201	<i>Molossus molossus</i>
<i>*S. diaemi</i> Wenzel (Streblidae)	2	22	<i>Sturnira lilium</i>
	3	2	<i>Diaemus youngii</i>
	2	1	<i>Diphylla ecaudata</i>
<i>*S. carolliae</i> Wenzel (Streblidae)	1	360	<i>Mormoops megalophylla</i>
	1	259	<i>Glossophaga soricina</i>
	1	1	<i>Lonchophylla mordax</i>
	1	17	<i>Anoura caudifera</i>
	1	1	<i>Choeroniscus godmani</i>
	56	501	<i>Carollia perspicillata</i>
	7	21	<i>Carollia subrufa</i>
	1	10	<i>Chiroderma villosum</i>
	1	10	<i>Myotis nigricans</i>
<i>*S. consocius</i> Wenzel (Streblidae)	15	144	<i>Phyllostomus hastatus</i>
<i>*S. hertigi</i> Wenzel (Streblidae)	3	144	<i>Phyllostomus hastatus</i>
<i>S. wiedemanni</i> Kolenati (Streblidae)	1	82	<i>Peropteryx macrotis</i>
	3	360	<i>Mormoops megalophylla</i>
	1	10	<i>Macrophyllum macrophyllum</i>
	1	1	<i>Phylloderma stenops</i>
	9	546	<i>Carollia perspicillata</i>
	1	30	<i>Artibeus jamaicensis</i>
	4	88	<i>Artibeus lituratus</i>
	1	1	<i>Sphaeronycteris toxophyllum</i>
	232	300	<i>Desmodus rotundus</i>
	5	2	<i>Natalus stramineus</i>
	1	10	<i>Myotis nigricans</i>
	1	1	<i>Eumops perotis</i>
	1	1	<i>Eumops auripendulus</i>
	2	71	<i>Molossus bondae</i>
<i>*Tecomatlana subacutascuta</i> Vercammen (Trombiculidae)	1	30	<i>Artibeus jamaicensis</i>
<i>Trichoboides perspicillatus</i> (Pessoa & Galvao) (Streblidae)	61	36	<i>Phyllostomus discolor</i>
	1	1	<i>Trachops cirrhosus</i>
	1	88	<i>Artibeus lituratus</i>
	2	201	<i>Molossus molossus</i>
	2	100	<i>Molossus obscurus</i>
	21	201	<i>Molossus pretiosus</i>
<i>Trichobius costalimai</i> Guimaraes (Streblidae)	11	36	<i>Phyllostomus discolor</i>
	2	503	<i>Carollia perspicillata</i>

TABLE 1 (Cont.)

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
	10	12	<i>Carollia castanea</i>
	1	88	<i>Artibeus lituratus</i>
	31	201	<i>Molossus molossus</i>
	10	201	<i>Molossus pretiosus</i>
<i>T. diaemi</i> Wenzel (Streblidae)	2	2	<i>Diaemus youngii</i>
<i>T. dugesii</i> Townsend (Streblidae)	7	259	<i>Glossophaga soricina</i>
	2	88	<i>Artibeus lituratus</i>
* <i>T. dugesioides</i> Wenzel (Streblidae)	1	360	<i>Mormoops megalophylla</i>
	1	503	<i>Carollia perspicillata</i>
	2	201	<i>Molossus molossus</i>
	1	1	<i>Molossus sinaloae</i>
* <i>T. furmani</i> Wenzel (Streblidae)	8	300	<i>Desmodus rotundus</i>
* <i>T. galei</i> Wenzel (Streblidae)	2	10	<i>Macrophyllum macrophyllum</i>
	2	10	<i>Natulus stramineus</i>
	1	201	<i>Molossus molossus</i>
* <i>T. joblingi</i> Wenzel (Streblidae)	4	13	<i>Rhynchonycteris naso</i>
	1	2	<i>Phyllostomus elongatus</i>
	1	1	<i>Phyllostomus latifolius</i>
	4	259	<i>Glossophaga soricina</i>
	1	17	<i>Anoura caudifera</i>
	278	503	<i>Carollia perspicillata</i>
	18	21	<i>Carollia subrufa</i>
	1	4	<i>Rhynophylla pumilio</i>
	2	22	<i>Sturnira lilium</i>
	1	21	<i>Sturnira tildae</i>
	1	2	<i>Vampyrodes caraccioli</i>
	7	88	<i>Artibeus lituratus</i>
	21	300	<i>Desmodus rotundus</i>
	1	10	<i>Myotis nigricans</i>
	2	201	<i>Molossus molossus</i>
	1	3	<i>Molossus ater</i>
* <i>T. johnsonae</i> Wenzel (Streblidae)	4	546	<i>Pteronotus psilotis</i>
* <i>T. lonchophyllae</i> Wenzel (Streblidae)	1	2	<i>Lonchophylla robusta</i>
<i>T. longipes</i> (Rudow) (Streblidae)	7	3	<i>Noctilio leporinus</i>
	9	144	<i>Phyllostomus hastatus</i>
	1	2	<i>Phyllostomus elongatus</i>
	7	1	<i>Vampyrum spectrum</i>
<i>T. parasiticus</i> Gervais (Streblidae)	9	360	<i>Mormoops megalophylla</i>
	1	546	<i>Pteronotus psilotis</i>
	1	1	<i>Micronycteris brachyotis</i>
	1	10	<i>Macrophyllum macrophyllum</i>
	1	2	<i>Lonchophylla robusta</i>
	3	546	<i>Carollia perspicillata</i>
	1	2	<i>Vampyressa pusilla</i>
	1	30	<i>Artibeus lituratus</i>

TABLE 1 (Cont.)

Parasites in alphabetical order	Number of parasites	Number of bats	Hosts in phylogenetic order
	1	30	<i>Artibeus Jamaicansis</i>
	5	88	<i>Artibeus lituratus</i>
	1	20	<i>Enchistenes hartii</i>
	746	300	<i>Desmodus rotundus</i>
<i>T. uniformis</i> Curran (Streblidae)	10	259	<i>Glossophaga soricina</i>
	1	1	<i>Lichonycteris obscura</i>
	1	88	<i>Artibeus lituratus</i>
* <i>Trichobius</i> probably 3 n. spp. (according to Wenzel) (Streblidae)	1	13	<i>Rhynchonycteris naso</i>
	1	41	<i>Sturnira erythromos</i>
	2	2	<i>Natalus stramineus</i>
* <i>Trombicula carmenae</i> Brennan & Jones (Trombiculidae)	1	360	<i>Mormoops megalophylla</i>
	11	21	<i>Sturnira tildae</i>
* <i>T. macrozota</i> Brennan & Jones (Trombiculidae)	3	360	<i>Mormoops megalophylla</i>
* <i>T. monops</i> Brennan & Jones (Trombiculidae)	1	360	<i>Mormoops megalophylla</i>
<i>T. saccopteryx</i> Brennan & Jones (Trombiculidae)	76	13	<i>Rhynchonycteris naso</i>
	36	4	<i>Saccopteryx bilineata</i>
	1	2	<i>Saccopteryx canescens</i>
	7	503	<i>Carollia perspicillata</i>
<i>T. vesperuginis</i> Brennan & Jones (Trombiculidae)	3	13	<i>Rhynchonycteris naso</i>
	2	360	<i>Mormoops megalophylla</i>
	1	1	<i>Lonchorhina aurita</i>
	8	2	<i>Mimon cozumelae</i>
	99	503	<i>Carollia perspicillata</i>
	13	21	<i>Carollia subrufa</i>
	21	21	<i>Sturnira tildae</i>
	10	15	<i>Vampyrops dorsalis</i>
	2	20	<i>Vampyrops intermedius</i>
	10	300	<i>Desmodus rotundus</i>
	11	201	<i>Molossus molossus</i>
<i>Whartonia guerrerensis</i> Hoffmann (Trombiculidae)	6	360	<i>Mormoops megalophylla</i>
<i>W. nudosetosa</i> (Wharton) (Trombiculidae)	4	504	<i>Carollia perspicillata</i>
	3	301	<i>Desmodus rotundus</i>
	3	201	<i>Molossus pretiosus</i>
Absence of ectoparasites	0	1	<i>Cormura brevirostris</i>
	0	2	<i>Lonchorhina orinocensis</i>
	0	1	<i>Mimon crenulatum</i>
	0	1	<i>Vampyrops lineatum</i>
	0	1	<i>Vampyrops recifinus</i>
	0	2	<i>Artibeus fuliginosus</i>
	0	2	<i>Thyroptera tricolor</i>
	0	1	<i>Myotis simus</i>
	0	2	<i>Eumops bonariensis</i>

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RESUMEN

De 3.860 murciélagos colombianos pertenecientes a 109 especies, 1.235 (32%), pertenecientes a 100 especies se encontraron infestados con ectoparásitos. Un total de 3.545 ectoparásitos fueron obtenidos, pertenecientes a 88 especies diferentes (**Mesostigmata**: 1 Halarachnidae; 19 Macronyssidae; 4 Spelaeorrhynchidae; 104 Spinturnicidae. **Ixodides**: 449 Argasidae. **Trombidiformes**: 1 Spelognathidae; 340 Trombiculidae. **Sarcoptiformes**: 170 Listrophoridae. **Hemiptera**: 16 Cimicidae; 4 Polycetenidae. **Diptera**: 7 Nycteribiidae; 2405 Streblidae. **Siphonaptera**: 25 Pulicidae). No se encontraron ectoparásitos en 9 especies de murciélagos.

ZUSAMMENFASSUNG

Von 3860 untersuchten kolombianischen Fledermäusen, die zu 109 Arten gehören zeigten 1235 (32%) zu 100 Arten gehörende Tiere Befall mit Ektoparasiten. Im ganzen wurden 3545 Ektoparasiten gefunden, die zu 88 verschiedenen Arten gehören (**Mesostigmata**: 1 Halarachnidae; 19 Macronyssidae, 4 Spelaeorrhynchidae; 104 Spinturnicidae. **Ixodides**: 449 Argasidae. **Trombidiformes**: 1 Spelognathidae; 340 Trombiculidae. **Sarcoptiformes**: 170 Listrophoridae. **Hemiptera**: 16 Cimicidae; 4 Polycetenidae. **Diptera**: 7 Nycteribiidae, 2405

Streblidae, Siphonaptera: 25 Pulicidae). Neun Arten von Fledermäusen waren frei von Parasiten.

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