

ARTHROPODS ASSOCIATED WITH *ANNONA* SPP. IN THE  
NEOTROPICSJ. E. PEÑA<sup>1</sup> AND F. D. BENNETT<sup>2</sup><sup>1</sup>University of Florida, Tropical Research and Education Center,  
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## ABSTRACT

Two hundred and ninety-six species of arthropods are associated with *Annona* spp. The genus *Bephratelloides* (Hymenoptera: Eurytomidae) and the species *Cerconota anonella* (Sepp) (Lepidoptera: Oecophoridae) are the most serious pests of *Annona* spp. Host plant and distribution are given for each pest species.

Key Words: *Annona*, arthropods, Insecta.

## RESUMEN

Doscientas noventa y seis especies de artrópodos están asociadas con *Annona* spp. en el Neotrópico. De las especies mencionadas, el género *Bephratelloides* (Hymenoptera: Eurytomidae) y la especie *Cerconota anonella* (Sepp) (Lepidoptera: Oecophoridae) sobresalen como las plagas más importantes de *Annona* spp. Se mencionan las plantas hospederas y la distribución de cada especie.

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The genus *Annona* is confined almost entirely to tropical and subtropical America and the Caribbean region (Safford 1914). Edible species include *Annona muricata* L. (soursop), *A. squamosa* L. (sugar apple), *A. cherimola* Mill. (cherimoya), and *A. reticulata* L. (custard apple). Each geographical region has its own distinctive pest fauna, composed of indigenous and introduced species (Bennett & Alam 1985, Brathwaite et al. 1986, Brunner et al. 1975, D'Araujo et al. 1968, Medina-Gaud et al. 1989, Peña et al. 1984, Posada 1989, Venturi 1966). These reports place emphasis on the broader aspects of pest species. Some recent regional reviews of the status of important pests and their control have been published in Puerto Rico, U.S.A., Colombia, Venezuela, the Caribbean Region and Chile (Medina-Gaud et al. 1989, Bustillo & Peña 1992, Peña et al. 1984, Gutierrez & Trochez 1977, Venturi 1966, Anonymous 1989). There is no contemporary published summary of Neotropical arthropods of *Annona* spp.. This list is offered as a contribution to an understanding of the arthropod fauna of *Annona* spp. in the Neotropics.

In the following checklist, distributional information is given for each arthropod. The checklist was compiled from collections of arthropods by the authors in Colombia, Ecuador, Brazil, and Dominican Republic, by summarizing the reports from several publications (Venturi 1966, Gutierrez & Trochez 1977, Medina-Gaud et al. 1989, Marin 1973, D'Araujo et al. 1968, Bennett & Alam 1985, Alata 1973, Anguita 1990,

Brussel & Wiedjk 1975, Deckle 1965, Fennah 1937, Grissell & Schauff 1990, Hamon & Williams 1984, Kimball 1965, Mound & Halsey 1978, Peña et al. 1984, Russell 1948, Hill 1975, Ebeling 1959) and by obtaining information from the collection of arthropods in Florida, USA, Honduras and Mexico and collections in Ecuador and Colombia by the authors.

The first column of the checklist refers to the *Annona* species. Arthropod order, family, genus and species are listed and the arthropod distribution by country based on *Annona* spp. records is given. The versions of the scientific names used in this text may not be the same as those used in the references.

#### DISCUSSION

The arthropod families most frequently observed on *Annona* spp. were Coccidae (Homoptera), Noctuidae, Oecophoridae (Lepidoptera), Eurytomidae (Hymenoptera) and Nitidulidae (Coleoptera). The most common arthropod species in the different neotropical countries are *Bephratelloides cubensis*, *B. pomorum*, *Cerconota anonella*, *Parasaissetia nigra*, *Saissetia coffeae*, *S. oleae* and *Cocytius antaeus*. The first three species are considered key pests of *Annona* spp. They are stenophagous, multivoltine *Annona* seed and fruit feeders. *Bephratelloides cubensis* has been reported from the USA, Caribbean Region, Central America and northern South America, whereas *B. pomorum* is listed from Central and South America. Biology and habits of *Bephratelloides* spp. have been provided by Brunner & Acuña (1967), Peña et al. (1984) and Nadel & Peña (1991). *Cerconota anonella* has been reported from tropical America and the Caribbean Region. Information on its biology, morphology and control is provided by Bustillo & Peña (1992). The last two genera are secondary pests of *Annona* spp. *Saissetia* spp. are polyphagous, leaf and branch feeders. *C. anteus* is a stenophagous species collected from the USA, the Caribbean and northern South America. Species of the family Nitidulidae were collected from flowers and decaying fruits. Nitidulids are considered important pollinators of *Annona* spp. (Gazit et al. 1982, Podoler et al. 1985, Nagel et al. 1985). This preliminary list of the arthropod fauna of *Annona* in the Neotropics points out that, although the distributions and relationships of the *Annona* are still poorly known, *Annona* spp. host a complex number of species throughout the Neotropical area. Since *Annona* spp. are mostly confined to the Neotropics, we would expect a lower number of stenophagous species in those areas where *Annona* was introduced (i.e., Asia, Australia).

#### ACKNOWLEDGMENTS

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TABLE 1. LIST OF ARTHROPOD PESTS OF ANNONA SPP. IN THE AMERICAS AND THE CARIBBEAN REGION.

Annona <sup>a</sup> Species	Order	Family	Species	Country <sup>b</sup>
15	Isoptera	Kalotermitidae	Neotermes sp	8
9		Termitidae	Nasutitermes costalis (Holmgren)	21
15	Thysanoptera	Phlaeothripidae	Liothrips anonae Moulton	13
16		Thripidae	Frankliniella bispinosa (Morgan)	1
16			F. kelliiae Sakimura	1
1,2			Heliothrips haemorrhoidales (Bouche)	13,11
15			Selenothrips rubrocinctus (Giard)	8
2			Thrips tabaci Lindeman	11
1	Orthoptera	Gryllidae	Oecanthus niveus (De Geer)	2
9	Hemiptera	Coreidae	Leptoglossus zonatus (Dallas)	17,2
9			L. phyllopus (L.)	2
2			Madura perfida Stal	17
9			Sphictyrtus chrysis (Lich)	17
9		Cydnidae	Cyrtomenus sp.	3
2		Lygaeidae	Neopamera bilobata (Say)	17
9		Miridae	Hyaloides mani Maldonado	21
9			Monalonium sp.	17
2			Phytocoris sp.	9

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1, 15		Pentatomidae	<i>Antiteuchus tripterus</i> (F.)	8
9			<i>Edessa vinula</i> Stal	17
9			<i>Loxa flavicollis</i> Drury	7
15			<i>Mecistorhinus amplus</i> (Walker)	13
9, 11		Pyrrhocoridae	<i>Dysdercus fernaldi</i> Ballou	17
2		Reduviidae	<i>Sinea coronata</i> Stal	17
1		Tingidae	<i>Corythucha gossypii</i> (F.)	17, 18, 21
9			<i>Corythucha</i> sp.	2
3			<i>Idostyia anonae</i> (Drake & Hambleton)	13
3			<i>Teleonemia morio</i> (Stal)	13
1, 2, 9	Homoptera	Aetalionidae	<i>Aethalium reticulatum</i> (L.)	2, 8, 17
1, 9, 15		Aleyrodidae	<i>Aleurodicus cocois</i> (Curtis)	13
1			<i>A. dugesii</i> Cockerell	23
15			<i>A. dispersus</i> Russell	1
12, 15			<i>A. neglectus</i> Quaintance & Baker	6, 13, 16
2, 9, 12, 15			<i>Aleurocanthus woglomi</i> Ashby	18, 21, 22
2, 12			<i>Aleurotrachelus trachoides</i> (Back)	10, 18

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1			<i>Aleurotrachelus</i> spp.	8
1,12			<i>Aleurothrixus floccosus</i> (Maskell)	11,13
15			<i>Ceraleurodicus moreirai</i> Costa Lima	13
1,2			<i>Lecanoides giganteus</i> (Quaintance & Baker)	8,13,16
15			<i>L. mirabilis</i> (Cockerell)	8,23
13			<i>Metaleurodicus lacerdae</i> (Signoret)	13
9			<i>Tetraleurodes</i> sp.	23
5,15			<i>Trialeurodes floridensis</i> (Quaintance)	9,4
9		Aphididae	<i>Aphis citricola</i> Van de Groot	21
1,2,16			<i>A. gossypii</i> (Glover)	1,8,10
1,9			<i>A. spiraeola</i> Patch	17,8
1,15			<i>Macrosiphum euphorbiae</i> (Thomas)	8
8,9			<i>Toxoptera aurantii</i> (Foyer de Fonscolombe)	13,17,21
1			<i>Toxoptera citricida</i> (Kirkaldy)	8
9			<i>Toxoptera</i> sp.	2
1,3,15		Asterolecaniidae	<i>Asterolecanium pustulans</i> (Cockerell)	13,18,21
9		Cercopidae	<i>Clastoptera</i> sp.	2
9		Cicadellidae	<i>Erthronia quadriguttata</i> (F.)	17

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9			<i>Graphocephala propior</i> (Fowler)	17
9			<i>G. spinosa</i> Van Duzee	17
9			<i>Oncometopia</i> sp.	17
15		Coccidae	<i>Ceroplastes actiniformis</i> Green	13
15			<i>C. cirripediformis</i> Comstock	1
1,15			<i>C. deodorensis</i> Hempel	13
8,15			<i>C. floridensis</i> Comstock	1,13
15			<i>Ceroplastes</i> sp.	13
8,9,12,14,15			<i>Coccus longulus</i> (Douglas)	1,8,9
8,12			<i>C. viridis</i> (Green)	1
15			<i>C. hesperidum</i> L.	1
2,9,12			<i>Eucalymnatus tessellatus</i> (Signoret)	1
1,2,8,9,11,15			<i>Parasaissetia nigra</i> (Nietner)	3,8,13,17,18,21
2			<i>Parthenolecanium corni</i> (Bouche)	10
9,15,16			<i>Philephedra tuberculosa</i> Nakahara & Gill	1,21
15			<i>Platingisia noacki</i> Cockerell	13
12,15			<i>Protospulvinaria pyriformis</i> (Cockerell)	1,8
9			<i>Pulvinaria psidii</i> Maskell	1

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15			<i>P. urbicola</i> Cockerell	1
1,15			<i>Saissetia anonae</i> Hempel	13
1,6,9,11,12,15			<i>S. coffeae</i> (Walker)	3,8,13,17,18,21
9			<i>S. oleae</i> (Olivier)	1,21,17
9			<i>Vinsonia stellifera</i> (Westwood)	17
2		Conchaspidae	<i>Conchaspis agreci</i> Cockerell	10
2,5		Diaspididae	<i>Abgrallaspis cyanophylli</i> (Signoret)	1
2			<i>Acutaspis scutiformis</i> (Cockerell)	10
1,9			<i>Aonidiella aurantii</i> (Maskell)	13,21
9			<i>A. comperei</i> McKenzie	13,21
1,5,6,12			<i>A. orientalis</i> (Newstead)	1
1,2,9,12			<i>Aspidiotus destructor</i> Signoret	1,8,13
2,12			<i>A. nerii</i> Bouché	1,11
15			<i>A. similimus translucens</i> (Cockerell)	13
15			<i>Aspidiotus</i> sp.	13
1,9			<i>Chrysomphalum aonidium</i> L.	13,21
1,9			<i>C. dictyospermi</i> (Morgan)	13,18
1			<i>Clavaspis herculeana</i> (Doane & Hadden)	13

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2,9,12			<i>Hemiberlesia lataniae</i> Signoret	1, 10
1			<i>Howardia biclavus</i> (Comstock)	1
1			<i>Ischnaspis longirostris</i> (Signoret)	13,8
2			<i>Lepidosaphes beckii</i> (Newman)	10
9			<i>Lepidosaphes</i> sp.	2
9			<i>Lindgaspis floridana</i> Ferris	1
1			<i>Melanaspis paulista</i> (Hempel)	13
15			<i>M. mimosae</i> (Comstock)	1
9			<i>Mycetaspis personata</i> (Comstock)	21
12			<i>Palinaspis quohogiformis</i> (Merrill)	1
1,15			<i>Pinnaspis aspidistrae</i> (Signoret)	8,13
1,9,15			<i>P. strachani</i> (Cooley)	1,8,13,21,27
9			<i>Pinnaspis</i> sp.	2
1			<i>Pseudalacaspis acephala</i> Ferris	8
1,15			<i>P. sordida</i> Hempel	13
1			<i>Pseudadonidia trilobitiformis</i> (Green)	8,13
8,6			<i>Pseudischnaspis bowreyi</i> Cockerell	1,18
9			<i>Radionaspis indica</i> (Marlatt)	1

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1,2,9			<i>Selenaspidus articulatus</i> (Morgan)	1, 17, 18, 21
2,9			<i>Unaspis citri</i> (Comstock)	3, 10
9		Flatidae	<i>Poekiloptera</i> sp.	2
1		Margarodidae	<i>Crypticerya rosae</i> Riley & Howard	8
2			<i>Icerya purchasi</i> Maskell	10, 11
1			<i>I. montserratensis</i> Riley & Howard	8
1		Membracidae	<i>Aconophora concolor</i> Walker	8
9			<i>A. pugionata</i> Germar	13
1,2,9			<i>Aconophora</i> sp.	2, 3, 8, 17
1			<i>Boethoos reticulata</i> (F.)	8
1			<i>Bolbonata insignis</i> Fowler	8
2,9,11			<i>Campylenchia hastata</i> Stal	17
2			<i>Ceresa vitulus</i> (Fabricius)	17
2			<i>Cyphonia clavata</i> (Fabricius)	17
2			<i>Enchenopa lanceolata</i> (Stol)	17
1			<i>Encophyllum quinque maculata</i> (Fairmoire)	13
1			<i>Erechtia</i> sp.	8
1			<i>Gerridius scutellatus</i> Fowler	8

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1			Guayaquila sp. near noreriana Godling	8
1			Holophorium sp.	8
1,2,9,11,15			Horiola picta (Cockerell)	2,17
15			Membracis albimbata Fowler	17
1,9			M. arcuata De Geer	13
9			M. foliata (Richter)	8,13,17
2,9,11			M. mexicana Guerin	3,8
1			Metcalfiella monogramma Germar	8
9			Sciotopelta acutula (Fairmont)	17
1,2,9			Tragopa involuta (F.)	8
9			Vanduzee laeta segmentata (Fowler)	17
1,9		Ortheziidae	Orthezia insignis Browne	2,13,17
2			O. olivicola Beingolea	10
15		Pseudococcidae	Dysmicoccus brevipes (Cockerell)	13
1,15			Ferrisia virgata (Cockerell)	8,13
9,15			Nipaecoccus nipae (Maskell)	13,18,21
1			Nipaecoccus spp.	8
1,9,15,16			Planococcus citri (Risso)	1,7,8,13

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TABLE 1. (CONT.) LIST OF ARTHROPOD PESTS OF ANNONA SPP. IN THE AMERICAS AND THE CARIBBEAN REGION.

Annona <sup>a</sup> Species	Order	Family	Species	Country <sup>b</sup>
2			<i>Pseudococcus calceolaria</i> (Maskell)	11
1,2,9			<i>P. longispinus</i> (Targioni)	11,13,21
2			<i>P. maritimus</i> (Ehrhorn)	2,9
1,9,16			<i>Pseudococcus</i> spp.	1,8,12,13
1			<i>Pseudotectococcus anonae</i> Hempel	13
2	Lepidoptera	Gracillariidae	<i>Phyllocnistis</i> sp.	8,9,10,17
1		Hesperiidae	<i>Bungalotis fulvius</i> (Plotz)	13
9			<i>Camptopleura</i> spp.	17
1			<i>Discophellus ramusis</i> (Stoll)	13
1,9			<i>D. sebalus</i> (Stoll)	13
1,9			<i>Milanion hemes</i> (Cramer)	13
1			<i>M. leucaspis</i> Mabilie	13
1,15			<i>Paraminus scurra</i> (Hubner)	13
1			<i>Pythonides heremius</i> (Geyer)	13
1			<i>Thracides scipio</i> (F.)	13
1,9,15		Lycaenidae	<i>Thecla ducalis</i> Doubleday	8,13,17
9			<i>T. irtyginus</i> Cramer	13
9			<i>T. ortygunus</i> Cramer	13

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Annona <sup>a</sup> Species	Order	Family	Species	Country <sup>b</sup>
1,2			Thecla sp.	10,13,18
2		Lyonetidae	Lyonetia sp.	10
1			Leucoptera sp.	18
2,6,9,15,16		Noctuidae	Gonodonta clotilda (Stoll)	1,17,18
6,9,15,16			G. nutrix (Cramer)	1,18,24
15			G. pyrgo (Cramer)	13
1		Nymphalidae	Mechanitis lysimnia (F.)	13
1,9,12,15,8		Oecophoridae	Cerconota anonella (Sepp)	3,8,9,13,14,15,17,23
1,15			Steroma leucana (Sepp)	8
15			S. sciogama Meyrick	13
2,9		Papilionidae	Graphium ariarathes metagenes (Rotschild & Jordan)	13
1,15			G. harrisianus (Swainson)	13
2,6			G. lysithous (Hubner)	6
1,2,9,15		Psychidae	Oelketicus kirbyi (Guilding)	8,10,13,18
1,9			Oelketicus sp.	2,8,17
15		Pyralidae	Ectomyelois decolor (Zeller)	13
1		Saturniidae	Rhescyntis armida (Cramer)	13
14			Dirphia avia triangulum Walker	13

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1			<i>Rothschildia aurota aurota</i> (Cramer)	13
2, 11, 14			<i>Hylesia coex</i> Dyar	17
1, 9, 15, 16		Sphingidae	<i>Cocytius antaeus</i> (Drury)	13, 17, 21, 24
1, 15			<i>C. anteus</i> medor Stoll	13
15			<i>C. cluentius</i> (Cramer)	13
1, 15			<i>C. duponchel</i> (Poey)	13, 18
9			<i>Protambulix strigilis</i> Clark	22
1	Coleoptera	Anobiidae	<i>Catorama palmarum</i> (Guerin-Meneville)	8
9		Anthribidae	<i>Araecerus fasciculatus</i> De Geer	8
1		Cerambycidae	<i>Alphus canescens</i> (Bates)	13
15			<i>A. senilis</i> Bates	13
1			<i>Ammiscus polygraphoides</i> White	10
1			<i>Ancylocera</i> sp.	13
1			<i>Ibidion</i> sp.	8
15			<i>Oncideres aegrota</i> Thomson	13
15			<i>O. dejeani</i> Thomson	13
15			<i>O. saga</i> (Dalman)	13
1			<i>Trachyderes interruptus</i> Dupont	8

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Annona <sup>a</sup> Species	Order	Family	Species	Country <sup>b</sup>
9			<i>Trachysomus thomsoni</i> Aurivillius	17
2		Chrysomelidae	<i>Alethaxius</i> sp.	17
2			<i>Colaspis lebasii</i> Lefebvre	17
2			<i>Diabrotica centralis</i> Jacoby	17
2			<i>D. mutabilis</i> Baly	17
2			<i>Diphaulaca panamae</i> Barber	17
1			<i>Justus gibber</i> Bondar	13
1			<i>J. tuberosus</i> Bondar	13
2,9			<i>Megascelis</i> sp.	17
1			<i>Uroplata anonicola</i> Maulik	13
6,11		Curculionidae	<i>Brachiomus quadrinodosus</i> (Boheman)	17
2,8			<i>Compsus signatus</i> Say	17
3			<i>Conotrachelus anonae</i> Bondar	13
15			<i>C. bondari</i> Marshall	13
3			<i>C. marshalli</i> Bondar	13
1,9,10,15			<i>Cratosomus bombina</i> F.	8,13,17
1,15			<i>Cratosomus</i> sp.	13
1			<i>Heilus ochrifer</i> (Boheman)	13

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Annona <sup>a</sup> Species	Order	Family	Species	Country <sup>b</sup>
15			<i>Helipus catagraphus</i> Germar	13
15			<i>H. lactarius</i> Germar	13
1, 15			<i>H. velamen</i> (Boheman)	13
1			<i>Lydamis angulus</i> Boheman	13
1			<i>L. confusa</i> Casey	13
1			<i>L. maculata</i> Casey	13
1			<i>L. ruficollis</i> Bondar	13
1			<i>Lydamis</i> sp.	13
2			<i>Naupectus xanthographus</i> (Germar)	11
3, 10, 15			<i>Priomerus brevirostris</i> Hustache	13
1, 9			<i>Prionomerus flavitarsis</i> Jekel	17
1			<i>Spermologus anonae</i> (Araujo)	13
3			<i>S. funerus</i> (Pascoe)	13
1			<i>Telemus carinosus</i> (Casey)	13
1, 3			<i>T. gibbicollis</i> (Casey)	13
2		Elateridae	<i>Conoderus</i> spp.	11
9, 16		Nitidulidae	<i>Carpophilus fumatus</i> (Boheman)	1, 13
16			<i>C. freemani</i> (Dobson)	1

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9,16			<i>C. mutilatus</i> (Erichson)	1,8,21
9,16			<i>C. humeralis</i> (F.)	1,8
9			<i>C. succisus</i> (Erichson)	8
2			<i>Colopterus macropterus</i> (F.)	9
16			<i>C. posticus</i> (Erichson)	1
2			<i>C. vulneratus</i> (Erichson)	9
9			<i>Colopterus</i> sp.	8
16			<i>Haptoncus luteolus</i> (Erichson)	1
16			<i>Lobiopa</i> sp.	1
6		Languridae	<i>Hapalips</i> prob. <i>fusca</i> Reiter	8
15		Scolytidae	<i>Coccotrypes pygmaeus</i> Eichhoff	13
16			<i>Pityophilus</i> sp.	1
15,16			<i>Xyleborus</i> sp.	1,13
1,15		Scarabaeidae	<i>Ancistrostoma klugi</i> Curtis	10
15			<i>Antichira inaurata</i> Burmeister	8
9			<i>Cyclocephala brittoni</i> Endrodi	8
1,15			<i>C. ruficollis</i> Burmeister	8
15			<i>Macroductylus affinis</i> Laporte	3

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15			<i>M. pumilio</i> Burmeister	13
15			<i>M. suturalis</i> Manneheim	13
9		Staphylinidae	<i>Coproporus</i> sp.	8
9	Diptera	Anthomyiidae	<i>Atherigona orientalis</i> (Schiner)	17
9		Bibionidae	<i>Plectia plagata</i> Wiedeman	17
1		Lonchaidae	<i>Lonchea aculeata</i> Bezzi	8
1			<i>Neosilba</i> sp.	8
1			<i>Silba dimidiata</i> (Curran)	8
1,9,15			<i>S. pendula</i> (Bezzi)	8,13,17
2		Tephritidae	<i>Anastrepha bistrigata</i> Bezzi	10
2			<i>A. barandiaranae</i> Korytowski & Ojeda	9
2			<i>A. chichlayae</i> Greene	10
2			<i>A. distincta</i> Greene	10
2			<i>A. extensa</i> Stone	10
2			<i>A. fraterculus</i> (Wiedemann)	9,10,13
2			<i>A. obliqua</i> (Macquart)	13
2			<i>A. scholae</i> Capoor	13
2			<i>A. serpentina</i> (Wiedemann)	10

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2,9			<i>A. striata</i> Schiner	2,10,17
2			<i>A. suspensa</i> (Loew)	10
1,2			<i>Anastrepha</i> sp.	8,13
2,9			<i>Ceratitidis capitata</i> (Wiedemann)	2,13
2			<i>Tomoplagia monostigma</i> Hendel	10
2			<i>Trupanea fucata</i> F.	10
2			<i>Xanthaciura major</i> Malloch	1
1,2,6,8,9,12,15,16	Hymenoptera	Eurytomidae	<i>Bephratelloides cubensis</i> (Ashmead)	2,3,4,6,7,8,17,18,20, 21,22,25,26
1			<i>B. limai</i> (Bondar)	13
1			<i>B. paraguayensis</i> Crawford	12,24
1			<i>B. petiolatus</i> Grissell & Schauff	7
1,2,8,9,15			<i>B. pomorum</i> (F.)	2,3,5,6,7,8,9,10,17,1 8,20,21,22,26,26
15		Formicidae	<i>Atta sexdens rubropilosa</i> Forel	13
15			<i>A. sexdens sexdens</i> (L.)	13
9			<i>Atta</i> sp.	2,17
14			<i>Camponotus</i> sp.	2

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14				<i>Dolichoderus bispinosus</i> (Olivier)	13
1				<i>Monacis trinidadensis</i> Provancher	8
1				<i>Monomorium floricola</i> (Jerdon)	1
1				<i>Paratrechina longicornis</i> (Latreille)	1
14			Meliponidae	<i>Trigona trinidadensis silvestriana</i> Vach.	13
14				<i>Trigona</i> sp.	2, 13
14			Vespidae	<i>Polistes versicolor</i> Olivier	13
15	Acarina		Ertophyidae	<i>Ertophyes anonae</i> Kelfer	8
2			Tenuipalpidae	<i>Brevipalpus chilensis</i> Baker	11
2				<i>B. californicus</i> (Banks)	11
2			Tetranychidae	<i>Oligonychus yothersi</i> (McGregor)	11
14				<i>Oligonychus</i> sp.	3
2				<i>Tetranychus urticae</i> Koch	11
15				<i>Tetranychus mexicanus</i> (McGregor)	8

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