

# Comparative arachnogeographical analysis between the faunas of Central America and the Antilleans (Caribbeans)

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**Abstract:** The distribution of all orders of Arachnida in Central America and the Antilleans is analysed and compared, together with analysis of the paleogeographical history of the area and the various attempts of zoogeographers to situate the continental and the insular parts on the zoogeographical map of Western Hemisphere.

## Conclusions:

**Palpigradi** are known only from the Antilleans.

In the seven countries of Central America (without counting Yucatan) are recorded 18 species of **Ricinu**lei belonging to the two American genera. From the Antilleans (Cuba) are known only two (endemic?) species. The genus *Cryptocellus* Westwood is common for both regions.

In the seven countries of Central America (without South Mexico) are recorded **Solifugae** of five genera, all belonging to Ammotrechidae (Ammotrechinae). Two of them seem endemic. Four genera have been recorded from the Antilleans (all of them from the same family Ammotrechidae), three of them are endemic. Only one genus (*Ammotrechella*) is in common for both regions, the species are endemic.

The Amblypygids (**Amblypygi**) of the Antilleans are more numerous and diverse (29 species of four genera), than in the seven countries of Central America (nine species of two genera, the families are the same). Again difference at the level of research? Both regions have different fauna of **Thelyphonida (Uropygi)** – three endemic genera in Central America, one endemic genus plus several end. species of *Mastigoproctus* in the Caribbean Islands). The Schizomids (**Schizomida**) in both areas belong to the same family, but the genera are different (seven genera, one endemic in Central America, eight genera, six of them endemic in the Antilleans). There are three genera in common for both areas. Again difference at the level of research?

**Opiliones. Cyphophthami** – unknown in both regions. **Eupnoi:** Sclerosomatidae (in both areas the same genera *Geaia* and *Prionostemma*); **Dyspnoi** – in Honduras is known the genus *Trilasma* Goodnight et Goodnight (Nemastomatidae, Ortholasmatinae); in the Antilleans the suborder Dyspnoi is not known. **Laniatores.** The Catalogue of KURY (2003) enumerates 56 genera and nine families of Laniatores, living in the seven countries of Central America. From the Antilleans in the same Catalogue are listed 117 species Opiliones Laniatores, belonging to 65 genera and 11 families. From this list five families are in common (underlined). The endemic genera on the islands are 13 (from Biantidae and Kimulidae). **There are no endemic families.**

The faune of **pseudoscorpions** in the Antilleans seems richer (39 genera, 15 families), than the one of the seven families of Central America (33 genera, 13 families). Both areas have 13 genera in common. Among the eight genera of **scorpions** in Central America and 11 genera in the Antilleans there are four genera in common. Three families in Central America (Chactidae, Euscorpiidae and Vaejovidae) are not recorded about Antilleans. Interesting fact is that the scorpions on the islands are more species and genera, than the scorpions in Central America, with land connection with such areas, rich in scorpions, as Mexico and the northern part of South America. One of the explanations is the very active speciation, especially in Cuba (55 species) and the Dominican Republic (40 species). Another explanation is that in Cuba live such specialists like Armas and Teruel.

**Araneae.** The spiders recorded from Cuba are 567 sp. of 52 families, including 247 endemic de Antilleans (43.56%) with eight endemic genera (Ochyroceratidae – *Fageicera* Dumitrescu et Georgescu, Barychelidae – *Troglithele* Fage, Pholcidae – *Bryantina* Brignoli, Oonopidae – *Brignolia* Dumitrescu et Georgescu, Prodidomidae – *Caudalia* Alayón, *Cubanopillus* Alayón et Platnick, Sparassidae – *Decaphora* Franganillo, Salticidae *Paraplexippus* Franganillo). **Opilioacarida.** Two genera from the same family (*Neocarus* Chamberlin et Mulaik and *Caribeacarus* Vasquez et Klompen) occur in both areas. The species are (for the time being) endemic. **Holothyrida** are unknown in Central America. From the Dominican Republic has been described the endemic *Caribothyrus barbatus* Kontchán et Mahunka, 2004. As a whole, there is considerable difference (artificial ?) between the arachnofauna of both areas, but Orly at a low level (genus or species). The Antilleans seem to be richer (or better explored). **In both areas are lacking endemic families.**

**Key words:** Antilleans, Central America, Arachnida, zoogeography

## Introduction

Central America (*sensu stricto* between Mexico and Colombia, but including Yucatan) is one of the areas with the highest biodiversity on Earth. The role of this narrow stripe of land for the Great Exchange of fauna and flora between the Neotropical and the Holarctic areas (belonging to different kingdoms!) has been analysed many times, but never through comparing the distribution of all orders of Arachnida within South and North America, and with the nearby Antillean (Caribbean) islands which are important centres of speciation.

### Central America

#### Geography, General Zoogeography and Paleogeography

Central America is extending from the Isthmus of Tehuantepec in southern Mexico southeastward to the Isthmus of Panama where it connects to the Colombian Pacific Lowlands in northwestern South America. Alternatively, the Transmexican Volcanic Belt delimits the region on the north. Central America has an area of some 592,000 km<sup>2</sup>, shared between seven states: Belize, Guatemala, Honduras, Costa Rica, Nicaragua, El Salvador and Panama. Most of Central America rests atop the Caribbean Plate (HALFFTER, 1976, 1987, KRAUS, 1962, MORRONE, 2001, KHUDOLEY & MEYERHOFF, 1971, RYAN, 1963, WEYL, 1964, 1966a, 1966b, 1970a, 1970b, 1973, WOODRING, 1966).

According to MORRONE (2005), Central America is included in the Caribbean Subregion of the Neotropical Region (Mesoamerican Dominion with five provinces).

Central America is part of the Mesoamerican Biodiversity hotspot, containing 7% of the world's biodiversity. As a bridge between North and South America, Central America has many species from the Nearctic and the Neotropic ecozones.

HALFFTER (1978) says that his "Patron Mesoamericano de Montaña" (Mountain Mesoamerican Pattern) is composed of elements having evolved in the Centroamerican Nucleus (determined by HALFFTER, 1978, as "La mesa Central y las dos cordilleras de Chiapas, así como las tierras altas y sus declives de Guatemala, Honduras, El Salvador y norte de Nicaragua").

In Central America (from the Isthmus of Tehuantepec to Panama) we can distinguish clearly two mountain massifs: north of the Centroamerican Nucleus, including 80% of the high grounds (above 600 m a.s.l.) of Central America; in the south la Sierra

de Talamanca in Costa Rica and the west of Panama (HALFFTER, 1978).

### Arachnogeography

Central America, being a bridge between North and South America and facing the Caribbeans, is zoogeographically important and is with rich and varied nature (ARMAS, 2004). In the seven countries between Mexico and Colombia are represented 14 orders: Ricinulei (18 species of two genera), Solifugae (12 species of five genera, all Ammotrechidae), Scorpiones (six families, 11 genera – non is endemic), Pseudoscorpiones (13 families, 33 genera, one endemic), Opiliones (one genus of Eupnoi, 56 genera of eight families of Laniatores, mostly Cosmetidae), Amblypygi (three genera of the families Phrynidae and Charinidae, four endemic species), Thelyphonida (Uropygi)(five species of three endemic genera), Araneae (many), Opilioacarida (two genera), the superfamilies Acariformes and Parasitiformes (BANKS, 1909a, KURY, 2003, ROEWER, 1954).

Palpigradi, Holothyrida and the suborders Palaeoamblypygi, Cyphophthalmi, Dyspnoi, Mesothelae have not been recorded from Central America. If we consider the entire area of Central America (incl. Yucatan) and the Caribbean, we may say that this is the most varied area in Arachnida in the world – all orders and almost all suborders are present (except of Palaeoamblypygi and Mesothelae).

**Palpigradi** – not recorded from Central America.

#### Ricinulei

In the seven countries of Central America (without S. Mexico) are registered 18 species of Ricinulei (COOKE & SHADAB, 1973, FAGE, 1921, 1938, MERRET, 1960, PLATNICK & PASS, 1982, PLATNICK & SHADAB, 1981, CHAMBERLIN & IVIE, 1938).

*Cryptocellus* Westwood, 1874 – Panama, Costa Rica, Honduras, Nicaragua (12 species)

*Pseudocellus* Platnick, 1980 – Guatemala, Honduras, El Salvador, Panama (six species)

These are the two genera of Ricinulei (Ricinoididae), known in the New World. They are represented also in Mexico and the Caribbean (Cuba). In Yucatan, which is part of Central America geographically, are known five more Ricinuleid species.

#### Solifugae

From the seven countries of Central America (without S. Mexico) are known 12 species of

Table 1

Country	Belize	Guatemala	Honduras	Salvador	Nicaragua	Costa Rica	Panama
	4	16	9	2	4	15	17
Fam. <b>Butthidae</b>	+	+	+	+	+	+	+
<i>Ananteris</i> Thorell	-	-	-	-	-	1	1
<i>Centruroides</i> Marx	1	6	5	1	3	4	4
<i>Isometrus</i> Ehrenberg	-	-	-	-	-	1	1
<i>Tityus</i> C.L. Koch	-	-	-	-	-	6	10
Fam. <b>Chactidae</b>	-	-	-	-	-	+	+
<i>Neochactas</i> Sol. et Fet	-	-	-	-	-	-	1
<i>Chactas</i> Gervais	-	-	-	-	-	1	2
Fam. <b>Euscorpidae</b>	-	+	+	-	-	-	-
<i>Plesiochactas</i> Pocock	-	-	-	-	-	-	-
Fam. <b>Hormuridae</b>	-	+	-	-	-	+	+
<i>Opisthocanthus</i> Peters	-	1	-	-	-	1	1
Fam. <b>Scorpionidae</b>	+	+	+	+	+	+	-
<i>Diplocentrus</i> Peters	4	6	3	-	-	-	-
<i>Didymocentrus</i> Kraep.	-	-	1	1	2	1	-
Fam. <b>Vaejovidae</b>	-	+	-	-	-	-	+
<i>Vaejovis</i> C.L. Koch	-	1	-	-	-	-	1

Solifugae of five genera, all belonging to the family of Ammotrechidae (ARMAS, 1993, 1996, 2000, 2004, MUMA, 1970, 1976, 1986, POCOCK, 1902, ROEWER, 1934). Highest diversity has been recorded in Nicaragua (six species) and Guatemala (five species). According to ARMAS (1996), this is only half of the presumed number of species in Centroamerica (23).

#### Ammotrechinae

*Ammotrecha* Banks, 1900

*Ammotrecha limbata* (Lucas, 1835) — Guatemala

*A. nigrescens* Roewer, 1934 — Costa Rica, Guatemala

*A. picta* Pocock, 1902 — Guatemala

*A. stollii* (Pocock, 1895) — Costa Rica, Guatemala, USA

*Ammotrechella* Roewer, 1934

*Ammotrechella pseustes* (Chamberlin, 1925) —

Panama, California, Puerto Rico

*A. tabogana* Chamberlin, 1919 — Panama

*Ammotrechesta* Roewer, 1934

*Ammotrechesta garcetei* Armas, 1993 — Nicaragua

*A. maesi* Armas, 1993 — Nicaragua

*A. schlueteri* Roewer, 1934 — Honduras

*A. brunnea* Roewer, 1934 — Costa Rica

*A. tuzi* Armas, 2000 — Mexico

*Innesa* Roewer, 1934

*Innesa vittata* (Pocock, 1902) — Guatemala

#### Scorpiones

The list of scorpions in Central America (Mexico excluded) of ARMAS & MAES (1998) contains data on 38 species of 11 genera and five families. From them 24 species are Central American endemics. Meanwhile, some changes occurred in the names of families, the place of the genera, etc. Now there are 11 accepted genera, but of six families (FRANCKE, 1978, FRANCKE & STOCKWELL, 1987, STOCKWELL, 1988, LOURENÇO, 1996c, LOURENÇO & MÉNDEZ, 1984, VIQUEZ, 1999).

#### Scorpiones in Central America (without Mexico)

**Pseudoscorpiones**

In the seven countries of Central America are recorded Pseudoscorpions of 33 genera and 13 families (Chthoniidae, Tridenchthoniidae, Bochicidae, Neobisiidae, Syarinidae, Ideoroncidae, Sternophoridae, Garypinidae, Atemnidae, Olpiidae, Cheliferidae, Chernetidae, Withiidae)(BEIER, 1931, 1932, 1953, 1955, 1976, HEURTAULT, 1998, HOFF, 1944, MAHNERT, 1987, MUCHMORE, 1973).

In six countries of Central America (no data for Honduras) the number of the pseudoscorpion species is as follows (HARVEY, 2003, 2011):

Belize – 10; Guatemala – 17; Costa Rica – 23; El Salvador – 10; Nicaragua – one; Panama – 15

Endemic genus for Central America:

Fam. Chernetidae

**Coprochernes** Beier, 1976 – Costa Rica

**Opiliones**

COKENDOLPHER & COKENDOLPHER (1984), GOODNIGHT & GOODNIGHT (1942, 1983), CRUZ-LÓPEZ, PROUD & PÉREZ-GONZALEZ (2016), KURY (2003), PICKARD-CAMBRIDGE (1904 -1905), ROEWER (1943, 1949), SHEAR (2010a), ŠILHAVÝ (1979), TOWNSEND, VIQUEZ, VANZANDT & PROUD (2010)

**Cyphophthami** – Unknown

**Eupnoi**

Fam. Sclerosomatidae

*Geaya* Roewer – Belize, Costa Rica

*Prionostemma* Pocock – Guatemala, El Salvador, Panama, Costa Rica

**Dyspnoi**

Fam. Nemastomatidae

Ortholasmatinae

*Trilasma* Goodnight et Goodnight – Honduras (one sp.)

**Laniatores**

The Catalogue of KURY (2003) enumerates from the seven countries of Central America 56 genera and nine families of Laniatores as follows:

Fam. Cosmetidae

*Acromares* Goodnight et Goodnight – Belize (one sp.)

*Bokwina* G. et G. – Belize (one sp.)

*Boneta* G. et G. - Guatemala (one sp.)

*Cosmetus* Perty – Panama (one sp.)

*Cynorta* C.L. Koch – Belize, Costa Rica, Panama, Honduras, Guatemala, El Salvador (20 sp.)

*Cynortellana* Roewer – Costa Rica (one sp.)

*Cynortoperna* Roewer – Costa Rica (one sp.)

*Cynortula* Roewer – Costa Rica, El Salvador, Nicaragua, Guatemala (nine sp.)

*Erginoides* Pickard – Cambridge – Panama, Costa Rica (two sp.)

*Erginulus* Roewer – Guatemala, Honduras, Belize, Costa Rica, El Salvador (21 sp.)

*Eucynorta* Roewer – Costa Rica, Panama, El Salvador, Guatemala (24 sp.)

*Eucynortella* Roewer – Guatemala, Panama (five sp.)

*Eucynortoides* Roewer – Costa Rica (one sp.)

*Eucynortula* Roewer – Costa Rica, Nicaragua, Guatemala, Belize, Panama (seven sp.)

*Eugnidia* Roewer – Costa Rica (one sp.)

*Eupoecilaema* Roewer – Costa Rica, Panama (two sp.)

*Flirtea* C.L. Koch – Honduras, Panama, Costa Rica (two sp.)

*Holovonones* Roewer – Belize, Costa Rica, Guatemala (one sp.)

*Kevonones* Chamberlin – Costa Rica (one sp.)

*Metacynorta* Pickard – Cambridge – Guatemala (one sp.)

*Metarhaucus* Pickard – Cambridge – Costa Rica (one sp.)

*Metavonones* Pickard – Cambridge – Costa Rica (two sp.)

*Meterginus* Pickard – Cambridge – Guatemala, Costa Rica, El Salvador (six sp.)

*Paecilaema* C.L. Koch – Costa Rica, Panama, Guatemala, Honduras, Belize (12 sp.)

*Paecilaemana* Roewer – Panama, Costa Rica (two sp.)

*Paracynorta* G. et G. – Panama (one sp.)

*Paravonones* Pickard – Cambridge – El Salvador (two sp.)

*Poecilaemula* Roewer – Costa Rica (one sp.)

*Reimoserius* Roewer – Costa Rica (one sp.)

*Tajumulcia* G. et G. – Guatemala (one sp.)

*Vonones* Roewer – Belize (one sp.)

*Vononesta* Roewer – Guatemala (one sp.)

*Vononula* Roewer – Guatemala (one sp.)

According to TOWNSEND et al. (2010), from the family Cosmetidae in Central America are registered 133 species of 33 genera.

Family Cranidae

*Comboyus* Roewer – Panama (one sp.)

*Phareicranaus* Roewer – Costa Rica, Panama (two sp.)

Family Gonyleptidae



*Glysterus* – Costa Rica (six sp.)  
*Hernandaria* Soerensen – Costa Rica (two sp.)  
*Hernandarioides* Picard-Cambridge – Panama  
(one sp.)  
*Nesopachylus* Chamberlin – Panama (two sp.)

#### Family Manaosbiidae

*Barrona* Goodnight C. J. et M. L. Goodnight –  
Panama (one sp.)  
*Bugabittia* Roewer – Panama (one sp.)  
*Poassa* Roewer – Costa Rica (one sp.)  
*Zygopachylus* Chamberlin – Panama (one sp.)

#### Family Samoidae

*Arganotus* Šilhavý – Guatemala (one sp.)  
*Neocynortina* Goodnight C. J. et M. L.  
Goodnight – Costa Rica (one sp.)  
*Pellobunus insularis* Banks – Panama (two sp.)  
*Pellobunus insulcatus* (Roewer)

#### Family Stygnommatidae

*Stygnomma* Roewer – Belize, Costa Rica (six  
sp.)  
*Stygnomma fuhrmanni* Roewer

#### Family Pyramidopidae

*Jarmilana* Cruz-López et al. – Belize (one sp.,  
troglobite)

#### Family Stygnopsidae

*Paramitraceras* P. – Cambridge – El Salvador,  
Guatemala, Costa Rica (two sp.)

#### Family Zalmoxidae

*Ethobunus* Chamberlin, 1925 – Panama,  
Guatemala, El Salvador, Costa Rica (15 sp.)  
*Pachylicus* Roewer, 1923 – Panama, Costa Rica  
(eight sp.)  
*Panopiliops* Roewer, 1949 – Costa Rica (two sp.)  
*Phalangoduna* Roewer, 1949 – Costa Rica,  
Panama (one sp.)  
*Stygnoleptes* Banks, 1914 – Costa Rica, Panama,  
El Salvador (three sp.)

#### Family uncertain

*Costabrimma* Goodnight et Goodnight – Costa  
Rica (three sp.)  
*Isaeolus* Roewer – El Salvador (one sp.)

#### Amblypygi

The Amblypygids are represented in Central  
America by the family Phrynidae and the gen-  
era *Phrynus* Lamarck (four species in Nicaragua,

Guatemala, Honduras, Belize, Costa Rica, Panama)  
and *Paraphrynus* Moreno (four species in Belize,  
Guatemala, Costa Rica, El Salvador, Nicaragua,  
Panama, Honduras). Both genera live also in South  
America, Mexico and the Antilleans (ARMAS,  
2004, ARMAS DE & GONZALEZ, 2001, ARMAS DE &  
MAES, 2000, ARMAS DE & VÍQUEZ, 2001, AVILA  
CALVO & ARMAS, 1997, GERVAIS, 1842, MULLINEX,  
1975, POCOCK, 1893, 1894, 1902, ROEWER, 1954,  
QUINTERO, 1981). The genus *Charinus* (fam.  
Charinidae) is found in Panama (VÍQUEZ, MIRANDA  
& de ARMAS, 2012).

There are four species, endemic for Central  
America (between Mexico and Colombia):

*Phrynus* Lamarck – *Ph. maesi* Armas, 1996  
(Nicaragua), *Ph. parvulus* Pocock, 1902 (Guatemala,  
Belize)

*Paraphrynus* Moreno – *P. emaciatus* Mullinex,  
1975 (Guatemala), *P. leptus* Mullinex, 1975  
(Guatemala)

#### Thelyphonida (Uropygi)

In Central America are found five species of  
Uropygi, and three endemic genera *Valeriphonus*  
Viquez et de Armas, 2005, *Mayacentrum* Viquez et  
Armas, 2006 and *Mimoscorpius* Butler, 1872). They  
live in Costa Rica – *Valeriphonus nara* (Valerio),  
El Salvador (*Mayacentrum tantalus* (Roewer)),  
Honduras (*M. pijol* Viquez et de Armas), Belize  
(*M. guatemalae* Viquez et de Armas), Guatemala  
(*Mimoscorpius pugnator* Butler)(ROEWER, 1954,  
VALERIO, 1981, VÍQUEZ & DE ARMAS, 2005, 2006;  
ARMAS & VÍQUEZ, 2007).

#### Schizomida

In Central America (between Mexico and  
Colombia) are recorded nine species, but there  
is also unidentified material from many places  
(ARMAS, VILLAREAL MANZANILLA & VÍQUEZ, 2010,  
ARMAS & VÍQUEZ, 2010, BRIGNOLI, 1973, ROWLAND  
& REDDELL, 1977, REDDELL & COKENDOLPHER,  
1995). Besides the largely distributed *Stenochrus*  
*portoricensis* (Guatemala, Honduras, Nicaragua,  
Belize), from Central America are known the genera  
*Heteronochrus* (Guatemala), *Hansenochrus* (Costa  
Rica, Panama), *Rowlandius*, *Piaroa* and *Surazomus*  
(Costa Rica), *Belicenchrus* from Belize. *Surazomus*  
Reddell et Cokendolpher is known also from many  
Southamerican countries. *Rowlandius* Reddell et  
Cokendolpher is widespread in the Caribbean is-  
lands. *Hansenochrus* Reddell et Cokendolpher is  
found also in South America and the Caribbean.

**Araneae**

PICKARD-CAMBRIDGE (1904 -1905),  
DUMITRESCU & GEORGESCU (1992), ZHANG &  
MADDISON (2012) et al.

Many endemic genera, but **no endemic families**.

**Some endemic genera in Central America  
and the Caribbeans:**

Family Microstigmatidae

*Micromyale* Platnick et Forster, 1982 –  
Panama (one sp.)

Family Theraphosidae

*Aenigmarachne* Schmidt, 2005 – Costa Rica  
(one sp.)

*Antillena* Bertani, Huff et Fukushima, 2017 –  
Dominican Rep. (one sp.)

*Barropelma* Chamberlin, 1940 – Panama (one sp.)

*Caribena* Fukushima et Bertani, 2017 – Puerto  
Rico, Cuba, US Virgin Isls, Martinique (two sp.)

*Crassicrus* Reichling et West, 1996 – Belize  
(one sp.)

*Longilyra* Gabriel, 2014 – El Salvador (one sp.)

*Mygalarachne* Ausserer, 1871 – Honduras  
(one sp.)

*Reichlingeria* Rudloff, 2001 – Belize (one sp.)

*Sphaerobothria* Karsch, 1879 – Costa Rica,  
Panama (one sp.)

*Stichoplastoris* Rudloff, 1997 – El Salvador,  
Costa Rica, Panama (eight sp.)

Family Ochyroceratidae

*Fageicera* Dumitrescu et Georgescu, 1992 –  
Cuba (three sp.)

Family Barychelidae

*Troglithele* Fage, 1929 – Cuba

Family Agelenidae

*Neowadotes* Alayón, 1995 – Hispaniola

Family Cyatholipidae

*Pokennips* Griswold, 2001 – Jamaica

Family Tetragnathidae

*Ancinosphenus* Simon, 1895 – West Indies  
(one sp.)

*Antillognatha* Bryant, 1945 – Hispaniola (one  
sp.)

*Hispanognatha* Bryant, 1945 – Hispaniola  
(one sp.)

Family Linyphiidae

*Lomaita* Bryant, 1948 – Hispaniola

*Primerigonina* Wunderlich, 1995 – Panama  
(one sp.)

*Sthelota* Simon, 1894 – Panama, Guatemala  
(two sp.)

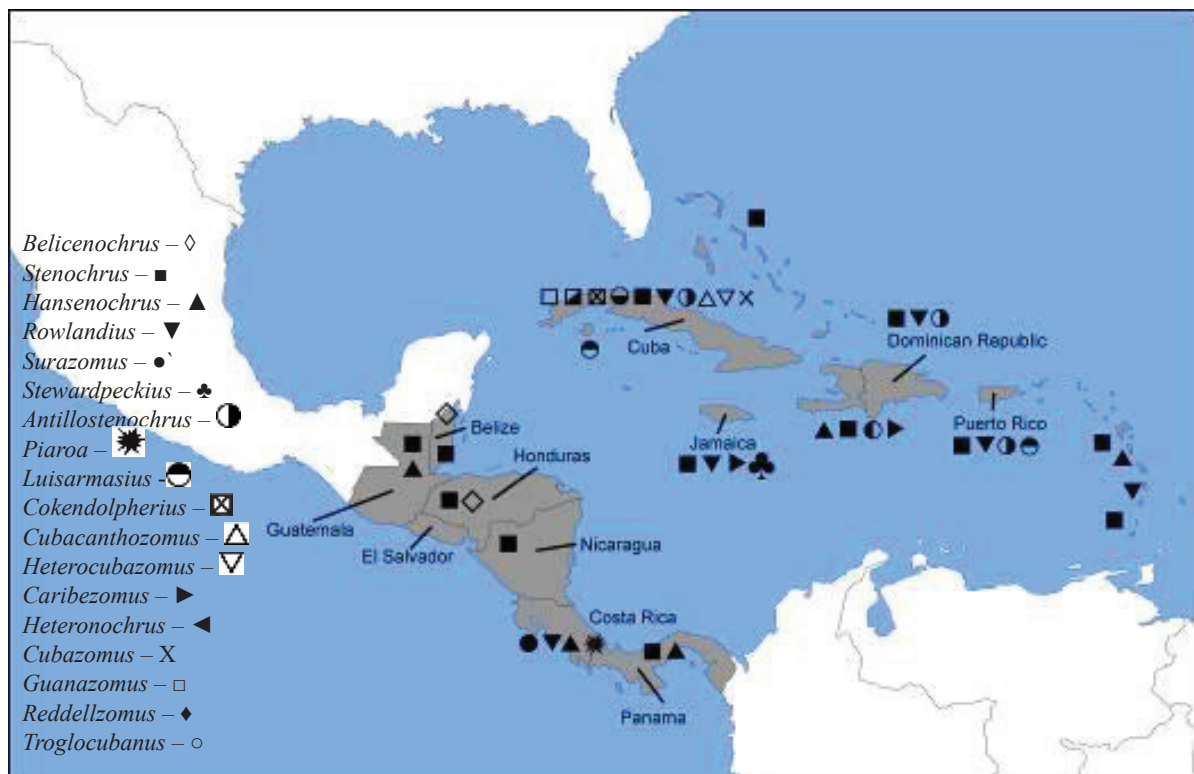
Family Filistatidae

*Antilloides* Breskovit et al., 2016 – Cuba, the  
Dominican Rep., Virgin Isls, Puerto Rico

Family Paratropididae

*Anisaspis* Simon, 1891 – St. Vincent (one sp.)

Family Amaurobiidae



Schizomida in Central America and the Caribbean

**Tugana** Chamberlin, 1948 – Cuba, Hispaniola (four sp.)  
Family Anyphaenidae

**Thaloe** Brescovit, 1993 – Cuba, Hispaniola (three sp.)  
Family Theridiidae

**Jamaitidion** Wunderlich, 1995 – Jamaica (one sp.)  
Family Liocranidae

**Laudetia** Gertsch, 1941 – the Dominican Rep., Puerto Rico (three sp.)

**Mesobria** Simon, 1897 – St. Vincent (one sp.)  
Family Ctenidae

**Ciba** Bloom et al., 2014 – Cuba, the Dominican Rep. (two sp.)

**Ohvida** Polotow et Brescovit, 2009 – Cuba, Puerto Rico, Bahamas (nine sp.)

**Trujillina** Bryant, 1948 – Hispaniola, Puerto Rico (three sp.)  
Family Pholcidae

**Bryantina** Brignoli, 1985 – Cuba

**Ciboneya** Perez, 2001 – Cuba (four sp.)

**Platnicknia** Özdikmen et Demir, 2009 – Cuba (two sp.)

**Tainonia** Huber, 2000 – Hispaniola (five sp.)  
Family Tetrablemmidae

**Micromatta** Lehtinen, 1981 – Belize  
Family Miturgidae

**Hoedillus** Simon, 1898 – Guatemala, Nicaragua (one sp.)  
Family Prodidomidae

**Caudalia** Alayón, 1980 – Cuba (one sp.)

**Cubanopillus** Alayón et Platnick, 1993 – Cuba  
Family Sparassidae

**Decaphora** Franganillo, 1931 – Cuba (one sp.)

**Defectrix** Petrunkevitch, 1925 – Panama (one sp.)  
Family Thomisidae

**Rejanellus** Lise, 2005 – Cuba, Puerto Rico, Hispaniola (four sp.)  
Family Salticidae

**Albionella** Chickering, 1946, **Banksetosa** Chickering, 1946, **Carabella** Chickering, 1946,  
**Gorgasella** Chickering, 1946, **Micalula** Strand, 1932, **Monaga** Chickering, 1946,  
**Orvilleus** Chickering, 1946, **Toloella** Chickering, 1946, **Udalmella** Galiano, 1994,  
**Uluella** Chickering, 1946 – all from Panama

**Allodecta** Bruyant, 1950 – Jamaica

**Antillattus** Bryant, 1943 – Hispaniola, Cuba

**Bythocrotus** Simon, 1903 – Hispaniola

**Caribattus** Bryant, 1950 – Jamaica

**Cerionesta** Simon, 1901 – St. Vincent

**Commoris** Simon, 1902 – Guadeloupe,

Dominica

**Corticettus** Zhang et Maddison, 2012 – Porto Rico, Hispaniola

**Paraplexippus** Franganillo, 1930 – Cuba

**Parasaitis** Bruyant, 1950 – Jamaica

**Parathiodina** Bruyant, 1943 – Hispaniola

**Popcornella** Zhang et Maddison, 2012 – Hispaniola, Puerto Rico

**Truncattus** Zhang et Maddison, 2012 – Hispaniola

### Opilioacarida

From Central America (between Mexico and Colombia) are known two sp. of Opilioacarida: *Caribeacarus panamensis* Vásquez et Klompen (Panama) and *Neocarus nicaraguensis* (Vásquez et Klompen)(Nicaragua), but we can add three species of *Neocarus* Chamberlin et Mulaik, 1942 from Yucatan Peninsula in Mexico. Both *Neocarus* and *Caribeacarus* live also on the Antilleans. The species are (so far) **endemic** (VÁSQUEZ & KLOMPEN, 2002, 2009).

**Holothyrida** – unknown

### Antillean (Caribbean) Islands

#### Geography, General Zoogeography and Paleogeography

“The West Indies and Central America, the question of the relationships between Atlantic and Pacific Ocean, between North and South America, as well as the question of possible land-bridges between the islands on one hand and the continent on the other, have been dealt with in an almost interminable procession of biogeographical and geological publications”.

RUTTEN (1935)

The Antilles islands form the greater part of the West Indies in the Caribbean. The Antilles are divided into two major groups: the „Greater Antilles“ to the north and west, including the larger islands of Cuba, Jamaica, Hispaniola (Haiti and the Dominican Republic), and Puerto Rico; and the smaller „Lesser Antilles“ on the southeast—comprising the northerly Leeward Islands, the southeasterly Windward Islands, and the Leeward Antilles just north of Venezuela. The Bahamas, though part of the West Indies, are generally not included among the Antillean islands. Geologically, the Greater Antilles are made up of continental rock, compared to the Lesser Antilles, which are mostly young volcanic or coral islands.

Cuba – area 109,886 km<sup>2</sup>, highest point Pico

Turkino (1974 m a.s.l.)(Isla de la Juventud – 2199 km<sup>2</sup>). Remaining is only ca. 15% of the original forest cover.

Hispaniola – area 76 480 km<sup>2</sup>, highest point Pico Duarte (3087 m)

Jamaica – area 10 990 km<sup>2</sup>, highest point Blue Mountain Peak (2256 m)

Puerto Rico – area 9104 km<sup>2</sup>, highest point Cerro de Punta (1338 m)

The **Lesser Antilles**, also known as the **Caribbees**, are part of the Antilles, which together with the Bahamas, the Cayman Islands, the Turks and Caicos Islands, and the Greater Antilles form the West Indies. The islands are a long partly volcanic island arc, most of which wrap around the eastern end of the Caribbean Sea and on the western boundary with the Atlantic Ocean.

Many papers deal with the paleogeography of the Caribbean: BLAIR HEDGES (2001), BONATTI & GARDNER (1973), BURKE et al. (1984), CURTIS, BRENNER & HODELL (2001), FREELAND & DIETZ (1971), HEDGES (1982, 2001), HEDGE, HAAS & MARXSON (1994), ITURRALDE-VINENT (1975), ITURRALDE-VINENT & MACPHEE (1999), JEANNEL (1939), KHUDOLEY & MEYERHOFF (1971), KOOPMAN (1959), MESCHÉDE & FRISH (1998, 2001), MEYERHOFF & MEYERHOFF (1972), MORRONE (2001), PAGE & LYDEARD (1994), SCHUCHERT (1935), WEYL (1964), WOODRING (1954), and others.

“A major deformation began in the Miocene, with folding of the Lower Tertiary sediments and uplifting of the cores of the present-day islands. During the Late Miocene and Pliocene, extensive peneplains were formed, which, as a result of the youngest crustal movements in the Antilles, now stand at elevations as great as 2000 m” (WEYL, 1966).

“In the Middle Eocene ends entirely the movement of the plate and Caribbean Sea and its surroundings acquired approximately their actual configuration” (ITURRALDE-VINENT, 1975).

The Antilles and the West Indies in sensu lato (including the Bahamas Bank) have been interesting to biogeographers even since WALLACE (1881). The Greater Antilles (Cuba, Hispaniola, Jamaica and Puerto Rico) are large enough to allow radiative speciation within the islands, between them and even to disperse some lines to the mainland (some examples among the vertebrates have been quoted by BLAIR HEDGES, 2006). This author analysed the paleogeography of the Antilles and the identity of the 1319 native terrestrial vertebrates on the islands. The problem how and when these animals arrived to the islands has been discussed (DARLINGTON, 1938,

WEYL, 1973, HEDGES, 1982, ITURRALDE-VINENT & MACPHEE, 1999, MORRONE, 2001a, 2005, 2006, 2017, RAPOPORT, 1968, ROSEN, 1975, and others).

Among the non-flying terrestrial vertebrates the endemism is high: nearly all 173 sp. of Amphibians, 96% of the 499 species of Reptiles, 96% of the freshwater fishes, but only 35% of the birds and 50% of the bats. It would be interesting to compare these figures with the various orders of Arachnida (although with the vertebrates we have to deal with classes). Thanks to many local and foreign researchers the general picture of the Arachnida on the Antilles is more or less complete and a sound basis for discussions.

Actually, the main argument is centered on the importance (and feasibility) of the three ways of “arrival” of the animals: dispersal, vicariance, and land bridges. The age of the various groups is also important. There are few fossils of Arachnida on the islands, mostly from Dominican amber (Miocene -15-20 MA to Upper Eocene – ca. 30-45 MA), so hypotheses should be based on speculations.

Based on insects (mostly Coleoptera), Krzhanovskiy (2002) considered the Antillean Subregion part of the Neotropical Region. For him the explanation is simple: volcanic archipelago, raised in the Late Tertiary and was populated by casual migrants from Central and South America. Some speciation took place after that.

According to MORRONE (2001), within the Caribbean Subregion there are seven insular provinces, plus Trinidad and Tobago. All major islands are separate provinces. In this monograph the biogeographical subregion “Caribeña” is rather wide – from Central Mexico to Ecuador and Galapagos.

According to MORRONE (2005), the Antillean Dominion is divided into eight provinces: the Yucatan Peninsula (the states of Yucatan, Campeche and Quintana Roo), Bahama, Cuba, the Cayman Islands, Jamaica, Hispaniola, Puerto Rico, and the Lesser Antilles Provinces. These provinces reflect the distribution of some orders of insects in the area.

Morrone (2017) provided a detailed regionalization of the Neotropics, dividing the area in three subregions: Antillean, Brazilian and Chacoan.

### Arachnogeography

The arachnofauna of the islands is varied and with many endemics, well studied by Cuban, Romanian and other specialists. Represented are all orders, except of Opilioacarida (ARMAS, 1982, 2004, BANKS, 1909b, PEREZ-GELABERT, 2008, TERUEL & DE ARMAS, 2005, ARMAS & AVILA, 2015). Remarkable is the finding of an endemic genus and species of



Holothyrina. Many endemic genera of Schizomida. Very rich fauna of scorpions (130 sp., only in Cuba are 55 sp.). According to these authors, there is a zoogeographical barrier between Trinidad and Tobago on the one hand and Grenada on the other, "the Bond line". LOURENÇO (1999b) indicates that the number of scorpion species doesn't seem to be correlated negatively with the distance from South America, but rather with the surface of the islands – five on Martinique, three on Saint Lucie and one on each of the smaller islands.

LOURENÇO (1999b) made important analysis of the origins and the affinities of the scorpions of the Greater Antilleans.

On the islands are lacking the suborders Cyphophthalmi, Dyspnoi, Paleoamblypygi and Mesothelae.

### Palpigradi

The only troglobite Palpigradi in the New World (*Eukoenenia orghidani* Condé et Juberthie) was described from Cuba. Some non-described Palpigradi have been recorded from Guadeloupe, Haiti and the subspecies *Eukoenenia berlessei virginea* Condé, 1984 was described from the Virgin Islands (CONDÉ, 1984, 1986, CONDÉ & JUBERTHIE, 1982, REMY, 1948).

### Solifugae

From the Antilleans are known three genera of Solifugae, two of them **endemic**, all belonging to Ammotrechidae, as follows (ARMAS, 1994, 2004, ARMAS & TERUEL, 2005, MUMA, 1970, 1976, 1986, MUMA & NEZARIO, 1971):

*Ammotrechella apejii* Muma, 1981 – Jamaica (**endemic**)

*A. bahamica* Muma, 1986 – Bahamas (**endemic**)

*A. bonariensis* (Werner, 1925) – Bonaire (**endemic**)

*A. [Ammotrechona] cubae* (Lucas, 1835) – Cuba (**endemic**)

*A. geniculata* (C.L. Koch, 1842) – Bahamas, Curacao, St. Vincent, Guadeloupe; also U.S.A., Mexico and Panama

*A. jutisi* Armas et Teruel, 2005 – Cuba (**endemic**)

*A. hispaniolana* Armas et Alegre, 2001 – the Dominican Republic (**endemic**)

*A. maguirei* Muma, 1986 – Caicos (**endemic**)

*A. pallida* Muma et Nezario, 1971 – Puerto Rico (**endemic**)

*A. pseustes* (Chamberlin, 1925) – Puerto Rico, Panama

*Ammotrechinus gryllipes* (Gervais, 1842) – Jamaica, Haiti (**endemic genus** and species)

*Antillotrecha iviei* Armas, 2002 – Leeward Islands (**endemic**)

*A. fraterna* Armas, 1994 – the Dominican Republic (**endemic genus** for the Caribbean, **endemic** species for Dominican Rep.)

*A. disjunctodens* Armas et Teruel, 2005 – Cuba (**endemic** sp.)

The genus *Ammotrechella* prevails and is found also in Panama, Mexico and the U.S.A. (Texas and Florida). In Cuba there are eight species of Solifugae, in Jamaica – two, in Dominican Rep. – three species (ARMAS, 2004, with catalogue and analysis of the distribution of Solifugae in Caribbean and Central America). Since only few taxa have been added (ARMAS & TERUEL, 2005).

### Ricinulei

The only Ricinuleids known from the Greater Antilleans were found in Cuba. These are one cave inhabiting *Pseudocellus*, described almost simultaneously by COOKE (1972) and by DUMITRESCO & JUVARA-BALS (1973), and *Pseudocellus silvai* (Armas, 1977). Both species seem **endemic** for Cuba. JUDSON & HARDY (2001) described a protonymph of *Cryptocellus* sp. from the Tobago Island.

### Scorpiones

The information on the Scorpions in the Antillean fauna was generalized by ARMAS (2001, 2009b), who has described many of the existing taxa in the islands. Zoogeographical analysis of the origin and the affinities of the Antillean scorpions is due to LOURENÇO (1999a). On the Antilleans have been recorded four families (Buthidae, Chactidae, Hormuridae, and Scorpionidae), 17 genera and 130 species. Four genera with 21 species are **endemic** to the Antilleans (ARMAS, 1973, 1974, 1982, 1983, 1999, ARMAS & MAES, 1998, ARMAS & MARCANO, 1987, FRANCKE, 1978, FRANCKE & SISSOM, 1980, KJELLESVIG-WAERING, 1966, LOURENÇO, 1984, 1986, 1987, LOURENÇO et al., 1991, LOURENÇO & HUBER, 1999, LOURENÇO & VACHON, 1996, KOVARIK & TERUEL, 2014, MORENO, 1940, TERUEL, 2006).

#### Family Buthidae

*Alayotityus* Armas, 1973 (Cuban endemics; seven species).

*Tityopsis* Armas, 1974 (Cuban endemics; two species)

#### Family Scorpionidae (incl. Diplocentridae)

*Cazierius* Francke, 1978 (a Greater Antillean endemics; 10 species).

**Oiclus** Simon, 1880 – ( Lesser Antillean endemics; two species from the Leeward Islands).

The other 11 genera are distributed as follows:

*Ananteris* Borelli, 1910 (one species from Trinidad and Tobago).

*Centruroides* Marx, 1890 (28 species on the Antilles).

*Isometrus* Ehrenberg, 1828 (one introduced species).

*Microtityus* Kjellesvig-Waering, 1966 (15 species, incl. six recent sp. from Hispaniola).

*Rhopalurus* Thorell, 1876 (eight species from Cuba and Hispaniola).

*Tityus* C. L. Koch, 1836 (20 species on the Antilles, incl. 13 recent species from Hispaniola).

*Broteochactas* Pocock, 1893 (two species from Trinidad and Tobago).

*Chactas* Gervais, 1844 (one species from Trinidad and Tobago).

*Opisthacanthus* Peters, 1861 (one species from Hispaniola).

*Didymocentrus* Kraepelin, 1905 (nine species from the Lesser Antilles, and central Cuba).

*Heteronebo* Pocock, 1899 (14 species from the Greater Antilles).

The scorpions of the Antilleans belong to 17 genera of four families, but Chactidae (with three genera) is known only from the islands Trinidad and Tobago near the coast of Venezuela (also the genus *Ananteris*). From the other 13 genera by far the richest is the fauna of Cuba (55 sp.), followed of Hispaniola (the Dominican Republic and Haiti), with in total 41 species.

The list of the scorpions in the Lesser Antilleans (16 spp.) is provided by LESCURE, JEREMIE, LOURENÇO et al. (1991), the one for Pinos (Isla de la Juventud), three species *Centruroides*, *Rhopaluros*, no endemics) by ARMAS (1983).

### **Pseudoscorpiones**

The fauna of Pseudoscorpiones in the Caribbean belong to 14 families as follows (only the species **endemic** for West Indies)(BARBA DIAZ & PÉREZ, 2001, BARBA DIAZ & BARROSO, 2013, BEIER, 1976, DUMITRESCO & ORGHIDAN, 1977, 1981, HEURTAULT & REBIÈRE, 1983, HOFF, 1945, 1946, 1959, 1963, 1964, 1976, MUCHMORE, 1967, 1979, 1982, 1984, 1992, 1998, TULLGREN, 1907, VITALI-DI-CASTRI, 1984).

Family Chthoniidae

*Caribchthonius butleri* Muchmore, 1976 – U.S. Virgin Isls (**endemic**)

*Pseudochthonius thibaudi* Vitali-di-Castri, 1984 – Guadeloupe (**endemic**)

*Tyrannochthonius guadeloupensis* Vitali-di-Castri, 1984 – Guadeloupe (**endemic**)

*T. imitatus* Hoff, 1959 – Jamaica, the Dominican Rep.

*T. proximus* Hoff, 1959 – Jamaica, the Dominican Rep.

Family Lechythiidae

*Lechythia delamarei* Vitali-di-Castri, 1984 – Guadeloupe (**endemic**)

*L. trinitatis* Beier, 1970 – the Dominican Rep., Trinidad

Family Syarinidae

*Ideobisium balzanii* With, 1905 – Guadeloupe, Dominica, St. Vincent

*I. puertoricense* Muchmore, 1982 – the Dominican Rep., Puerto Rico

*I. puertoricense cavicola* Muchmore, 1982 – Puerto Rico

*I. yunqueense* Muchmore, 1982 – Puerto Rico

*Ideoblothrus carinatus* (Hoff, 1964) – Jamaica

*I. insularum* (Hoff, 1945) – Jamaica, Puerto Rico

*I. pygmaeus* (Hoff, 1964) – Jamaica, Martinique

*I. truncatus* (Hoff, 1964) – Jamaica

Family Bochicidae

*Antillobisium mitchelli* Dumitresco et Orghidan, 1977 – Cuba (**endemic genus**)

*A. vachoni* Dumitresco et Orghidan, 1977 – Cuba

*Troglobochica* Muchmore, 1984 – Jamaica (**endemic genus**)

*T. jamaicensis* Muchmore, 1984

*T. pecki* Muchmore, 1984

*Mexobisium armasi* Muchmore, 1980 – Cuba

*M. cubanum* Muchmore, 1973 – Cuba

*M. sierramaestrae* Muchmore, 1980 – Cuba

*Nannobisium mollis* (Hoff, 1964) – Jamaica

Family Ideoroncidae

*Typhloroncus coralensis* Muchmore, 1979 – U.S. Virgin Isls (**endemic**)(the other four *Typhloroncus* are from Mexico)

Family Olpiidae

*Aphelolpium thibaudi* Heurtault et Rebière, 1893 – Guadeloupe, Martinique

*Novohorus subfuscus* Hoff, 1945 – Jamaica, Puerto Rico

*Olpiolum monae* (Hoff, 1964) – Mona, Jamaica, the Dominican Rep., Florida

*O. amplum* Hoff, 1964 – Jamaica

*O. aureum* (Hoff, 1945) – Mona, Puerto Rico

*O. confundens* (Hoff, 1945) – Puerto Rico

*O. puertoricensis* (Hoff, 1945) – Puerto Rico

Family Garypidae

Table 2. Scorpiones in the Antilleans

Country	Cuba	Hispaniola	Jamaica	Puerto Rico	Bahamas	Lesser Antilles	Trinidad and Tobago
Number of species	55	(40+6) 41	6	17	2	16	11
Fam. Buthidae	+	+	+	+	+	+	+
<i>Alayotityus</i> Armas	8	-	-	-	-	-	-
<i>Ananteris</i> Thorell	-	-	-	-	-	-	1
<i>Centruroides</i> Marx	14	5	4	5	2	8	1
<i>Isometrus</i> Ehrenberg							
<i>Microtityus</i> K. – W.	9	12	-	2	-	-	2
<i>Rhopalurus</i> Thorell	7	3	-	1	-	-	-
<i>Tityopsis</i> Pocock	2	-	-	-	-	-	-
<i>Tityus</i> C.L. Koch	1	13	1	7	-	4	4
Fam. Chactidae	-	-	-	-	-	-	+
<i>Neochactas</i> Sol. et Fet	-	-	-	-	-	-	1
<i>Chactas</i> Gervais	-	-	-	-	-	-	1
<i>Broteochactas</i> Pocock	-	-	-	-	-	-	1
Fam. Hormuridae	-	+	-	-	-	-	-
<i>Opisthocanthus</i> Peters	-	1	-	-	-	-	-
Fam. Scorpionidae	+	+	+	+	-	+	+
<i>Casierus</i> Francke	7	2	-	1	-	1	-
<i>Didymocentrus</i> Kraepelin	4	-	-	-	-	3	-
<i>Cryptoiclus</i> Ter. et Kov.	1	-	-	-	-	-	-
<i>Heteronebo</i> Pocock	2	5	1	1	-	5	-
<i>Oiclus</i> Simon	-	-	-	-	-	3	-

*Planctolpium arboreum* Hoff, 1964 – Jamaica, the Dominican Rep.

Family Cheiridiidae

*Cheiridium insulare* Heurtault et Rebière, 1893 – Guadeloupe (**endemic**)

Family Pseudochiridiidae

*Pseudochiridium insulae* Hoff, 1964 – Cuba, the Dominican Rep.

Family Atemnidae

*Paratemnoides elongatus* (Banks, 1895) – Cuba, the Dominican Rep., U.S. Virgin Isls, Central America, Mexico, U.S.A.

*P. nidificator* (Balzan, 1888) – Haiti, St Vincent, Central and South America

Family Cheliferidae

*Cubachelifer strator* Hoff, 1946 – the Dominican Rep., Cuba

*Parachelifer dominicanus* Beier, 1976 – the Dominican Rep. (**endemic**)

*P. parvus* Muchmore, 1981 – U.S. Virgin Isls (**endemic**)

*Tyrannochelifer cubanus* Hoff, 1964 – Cuba (**endemic**)

*T. floridanus* (Banks, 1891) – the Dominican Rep., Florida

*T. macropalpus* (Tullgren, 1907) – Haiti (**endemic**)

Family Chernetidae

*Americhernes puertoricensis* Muchmore, 1976 – Puerto Rico

*Antillochernes cruzensis* Muchmore, 1984 – U.S. Virgin Isls (**endemic**)

*Bituberochernes jonensis* Muchmore, 1979 – U.S. Virgin Isls (**endemic**)

*Byrsochernes caribicus* Beier, 1976 – the Dominican Rep. (**endemic**)

*Caribochernes pumilus* Beier, 1976 – the Dominican Rep. (**endemic**)

*Chelanops*? [*Dinocheirus*] *altimanus* (Ellingsen, 1910) – St Thomas (**endemic**)

*Chernes hispaniolicus* Beier, 1976 – the Dominican Rep. (**endemic**)

*Dinochernes chalumeaui* Heurtault et Rebière, 1893 – Guadeloupe (**endemic**)

*Hesperochernes vespertilionis* Beier, 1976 – the Dominican Rep. (**endemic**)

*Lustrochernes communis* (Balzan, 1890) – South America, Trinidad, the Dominican Rep.

*L. mauriesi* Heurtault et Rebière, 1893 – Guadeloupe (**endemic**)

*Parachernes* (*Scapanochernes*) *compressus* (Tullgren, 1907) – the Dominican Rep., Haiti, Florida

*P. dominicanus* Beier, 1976 – the Dominican Rep., Haiti (**endemic**)

*Parazaona klapperichi* Beier, 1976 – the Dominican Rep. (**endemic**)

Family Withiidae

*Cacodemonijs segmentidentatus* [in Beier, 1976 – “*serratidentatus*”] (Balzan, 1891) – the Dominican Rep., South America

*Dolichowithius canestrinii* (Balzan, 1887) – Virgin Islands, St Thomas, South America

*D. simplex* Beier, 1932 – the Dominican Rep., Puerto Rico

**Endemic genera** for the Antilleans are:

*Antillobisium* Dumitresco et Orghidan, 1977 – Cuba (two species)

*Caribochernes* Beier, 1976 – the Dominican Republic (one species)

*Cubachelifer* Hoff, 1946 – Cuba, the Dominican Rep. (one species)

*Troglobochica* Muchmore, 1984 – Jamaica (two species)

The pseudoscorpions are distributed between the main countries as follow:

Cuba – 27; Jamaica – 31; Puerto Rico – 18; Haiti – three; the Dominican Rep. – 26; Barbados – one; American Virgin Isl. – 12; Dominica – two; Martinique – seven; Guadeloupe – eight.

## Opiliones

**Cyphophthalmi** – not recorded on the Antilleans

### Eupnoi

Family Sclerosomatidae – *Geaia* Roewer, 1910 (Haiti), *Prionostemma* Pocock, 1903 (Cuba)

**Dyspnoi** – not recorded

### Laniatores

According to Kury (2003), in the Caribbean area are known 117 species of Opiliones Laniatores, belonging to 65 genera and 11 families: Cosmetidae, Agoristenidae, Stygnidae, Stygnommatidae, Kimulidae (= Minuidae), Biantidae, Samoidae, Podoctidae, Manaosbiidae, Phalangodidae, Zalmoxidae. The subfamily Stenostygninae of Biantidae consists almost entirely of taxa from the Caribbean (eight of the nine genera)(AVRAM, 1970, 1973a, 1973b, 1977a, 1977b, 1981, BANKS, 1909, COKENDOLPHER & CAMILO – RIVERA, 1989,

GOODNIGHT & GOODNIGHT, 1942, RAMBLA, 1969, ROEWER, 1947, ŠILHAVÝ, 1971, 1973, 1976, 1979, STARĚGA, 1970).

By far the best studied island is Cuba, not only because of its size, but mainly as a result of the studies of the Cubano-Romanian Expeditions (S. Avram and V. Šilhavý described from Cuba and other islands 58 new species and many new genera).

Here are listed the **endemic taxa** in the Antilleans:

Family Cosmetidae

*Arucillus hispaniolicus* Šilhavý, 1971– the Dominican Republic

*Cynortula garna* Goodnight et Goodnight, 1942 – Bahamas (Andros)

*C. sayensis* Goodnight et Goodnight, 1942 – Bahamas (New Providence)

*C. juncta* (Gervais, 1844) – Cuba

*C. fraterna* Banks, 1909 – Cuba

*C. quinquesignata* Franganillo Balboa, 1926 – Cuba

*Cynorta sextuberculata* Franganillo Balboa, 1926 – Cuba

*C. hassleri* Goodnight et Goodnight, 1942 – Haiti

*C. lithoclasica* Avram 1981- Cuba

*C. poaensis* Avram 1981 – Cuba

*C. quibijana* Avram 1981 – Cuba

*Cynortoides caraibicus* (Sørensen, 1932) – U.S. Virgin Islands – St. Thomas

*C. cubanus cubanus* (Banks, 1909) – Cuba

*C. cubanus signatus* Roewer, 1912 – Cuba

*C. lateralis* Roewer, 1947 – Jamaica

*C. roeweri* (Henriksen, 1932) – Puerto Rico

*C. quadrispinosus* Goodnight et Goodnight, 1942 – Jamaica

*C. roeweri* (Henriksen, 1932) – Cuba, Puerto Rico

*C. caraibicus* (Sørensen, 1932) – the Dominican Republic

*C. marginatus* Goodnight et Goodnight, 1942– the Dominican Republic

*C. v-album* (Simon, 1879) – the Dominican Republic, Haiti, Tortuga Island

*Cynortesta laevis* Roewer, 1947 – the Winward Islands

*C. granulata* Roewer, 1947 – the Winward Islands – Saint Vincent and the Grenadines

*Eucynortoides antillarum* Roewer, 1947 – the Winward Islands – Saint Vincent and the Grenadines

*Cynortellana quadrimaculata* (Gervais, 1844) – Cuba



- C. bisignata* (Banks, 1909) – Cuba  
*Heterovonones insularis* Roewer, 1947 – Cuba  
*Erginulus castaneus* (Banks, 1906) – Bahamas (Andros, New Providence)  
*E. quadricristatus* (Franganillo Balboa, 1926) – Cuba  
*Metacynortoides bilineatus* Goodnight et Goodnight, 1942 – the Dominican Republic  
*M. obscurus dorsalis* Roewer, 1916 – U.S. Virgin Islands – St. Croix, St. Thomas  
*M. obscurus obscurus* (Banks, 1901) – Haiti, Jamaica, Puerto Rico, U.S. Virgin Islands – St. John  
*M. romanus* Goodnight et Goodnight, 1942 – the Dominican Republic  
*M. transversalis* Goodnight et Goodnight, 1942 – the Dominican Republic  
*M. scabrosus* (Banks, 1909) – Cuba  
*Paecilaema luquillense* H. Soares, 1990 – Puerto Rico  
*P. conspicillatum* Simon, 1879 – the Windward Islands – Martinique  
*Platycynorta secunda* Roewer, 1947 – Cuba  
*Prasiana fallax* (Sørensen, 1932) – West Indies  
*Proerginus lineatus* Roewer, 1917 – the Dominican Republic  
*Trinimontius darlingtoni* Šilhavý, 1970 – Cuba  
*Vonones sayi* (Simon, 1879) – Cuba  
*V. granulatus* Roewer, 1947 – the Leeward Islands – Antigua and Barbuda  
*V. planus* Goodnight et Goodnight, 1942 – the Leeward Islands – Dominica  
Family Samoidae  
*Akdalima jamaicana* Šilhavý, 1979 – Jamaica  
*Arganotus robustus* Šilhavý, 1979 – Haiti  
*Hummelinckiolus parvus* Šilhavý, 1979 – the Leeward Islands – Guadeloupe, Montserrat, St. Kitts & Nevis  
*Maracaynatum cubanum* Šilhavý, 1979 – Cuba  
*M. stridulans* Šilhavý 1979 – Cuba  
*Orsa daphne* Šilhavý, 1979 – Haiti  
*Pellobunus haitiensis* (Šilhavý, 1979) – Haiti  
*Reventula amabilis* Šilhavý, 1979 – Jamaica  
Family Stygnidae  
Heterostygninae  
*Stygnoplus antiguanus* (Roewer, 1943) – the Leeward Islands – Antigua and Barbuda  
*S. flavitarsis* (Simon, 1879) – the Leeward Islands – Guadeloupe  
*S. tuberculatus* (Goodnight et Goodnight, 1942) – the Leeward Islands – Dominica  
Family Stygnomatidae  
*Stygnomma spiniferum bolivari* (Goodnight et Goodnight, 1945) – Cuba  
*S. spiniferum spiniferum* (Packard 1888) – Florida Keys (U.S.A.) – Tortugas, Jamaica  
*S. spinula* (Goodnight et Goodnight, 1942) – Puerto Rico  
*S. fiskei* Rambla, 1969 – Jamaica  
Family Agoristenidae  
Agoristeninae  
*Agoristenus cubanus* Šilhavý, 1973 – Cuba  
*A. haitiensis* Šilhavý, 1973 – the Dominican Republic  
*Ahotta hispaniolica* Šilhavý, 1973 – Haiti  
*Calmotrinus turquinensis* Šilhavý, 1973 – Cuba  
*Dumitrescuella ornata* Avram, 1977 – Cuba  
*Haitimera paeninsularis* Šilhavý, 1973 – Haiti  
*Lichirtes hexapodoides* Šilhavý, 1973 – Cuba  
*Meriosfera gertschi* Šilhavý, 1973 – Haiti  
*M. lineata* Šilhavý, 1973 – Haiti  
*Orghidaniella granpiedrae* Avram, 1977 – Cuba  
*Piratrinus calcaratus* Šilhavý, 1973 – Cuba  
*Torreana poeyi* Avram, 1977 – Cuba  
*T. spinata* Avram, 1977 – Cuba  
*Vampyrostenus kratochvili* Šilhavý, 1976 – Puerto Rico  
*Yunquenus portoricanus* Šilhavý, 1973 – Puerto Rico  
Family Phalangodidae  
*Phalangodes flavipes* (Banks, 1908) – Cuba  
Family Biantidae  
Stenostygninae  
*Caribbiantes cubanus* Šilhavý, 1973 – Cuba  
*Galibrotus carlotanus* Šilhavý, 1973 – Cuba  
*G. matiasis* Avram, 1977- Cuba  
*G. riedeli* Šilhavý, 1973 – Cuba  
*Bidoma indivisa* Šilhavý, 1973 – Haiti  
*Decuella cubaorientalis* Avram, 1977- Cuba  
*Negreaella fundorai* Avram, 1977 – Cuba  
*N. palenquensis* Avram, 1977 – Cuba  
*N. rioindiocubanicola* Avram, 1977- Cuba  
*N. vinai* Avram, 1977 – Cuba  
*N. yumuriensis* Avram, 1977 – Cuba  
*Manahunca bielawskii* Šilhavý, 1973 – Cuba  
*M. cuevajibarae* Avram, 1977- Cuba  
*M. silhavyi* Avram, 1977 – Cuba  
*Martibianta virginsulana* Šilhavý, 1973 – U.S. Virgin Islands — St. John  
*Vestitecola haitensis* Šilhavý, 1973 – Haiti  
Family Podoctidae Ibaloniinae  
[*Santobius cubanus* = *Ibantila cubana* (Šilhavý, 1969) – Cuba (probably introduced from Melanesia, see Kury & Machado, 2009)]  
Family Kimulidae (Minuidae)  
*Kimula levii* Šilhavý, 1969 – Cuba  
*K. banksi* Šilhavý, 1969 – Cuba

- K. goodnightiorum* Šilhavý, 1969 – Cuba  
*K. cokendolpheri* Pérez et Armas, 2000 – the Dominican Republic  
*K. elongata* Goodnight et Goodnight, 1942 – Puerto Rico  
*K. tuberculata* Goodnight et Goodnight, 1943 – Cuba  
*K. turquinensis* Šilhavý, 1969 – Cuba  
*Metakimula botosaneanui* Avram, 1973 – Cuba  
*Minuides milleri* Šilhavý 1978 – Cuba  
 Family Manaosbiidae  
*Cranellus balthazar* Roewer, 1932 – the Windward Islands  
*Sanvincentia tarsalis* Roewer, 1943 – the Windward Islands — Saint Vincent and the Grenadines  
 Family Zalmoxidae  
*Cersa kratochvili* Šilhavý 1979 – Cuba  
*Ethobunus cubensis* (Šilhavý 1979) – Cuba  
*E. goodnighti* (Rambla, 1969) – Jamaica  
*E. pecki* (Rambla, 1969) – Jamaica  
*E. zebroides* (Šilhavý 1979) – Cuba  
*Pachylicus castaneus* (Šilhavý 1979) – Cuba  
 Family uncertain  
*Anamota custodiens* Šilhavý 1979 – Cuba  
*Caribula longimana* Šilhavý 1979 – Cuba  
*Jimeneziella negreai* Avram, 1970 – Cuba (**endemic genus**)  
*J. decui* Avram, 1970 – Cuba  
*Metapellobunus unicolor* (Roewer, 1912) – U.S. Virgin Islands – St. Thomas  
*Mirda insulanus* (Banks, 1901) – Haiti, Puerto Rico  
*Neoscotolemon pictipes* (Banks, 1908) – Cuba  
*N. lutzi* Goodnight et Goodnight, 1942 – the Leeward Islands – Dominica  
*Paraconomma ovala* Goodnight et Goodnight, 1942 – Puerto Rico  
*P. spinooculorum* Goodnight et Goodnight, 1942 – Puerto Rico  
*Pseudomitraceras minutus* Goodnight et Goodnight, 1942 – Puerto Rico  
*Turquinia montana* Šilhavý 1979 – Cuba  
*Valifema blanda* Šilhavý 1979 – Cuba

**Endemic genera** of Opiliones in the Caribbean are:

- Family Kimulidae (= Minuidae)  
*Jimeneziella* Avram, 1970 — Cuba (two sp.)  
*Kimula* Goodnight et Goodnight, 1942 – Cuba, the Dominican Republic, Puerto Rico (eight sp.)  
 Family Biantidae (Stenostygninae)  
*Bidoma* Šilhavý, 1973 – Haiti (one sp.)

- Caribbiantes* Šilhavý, 1973 – Cuba (one sp.)  
*Decuella* Avram, 1977 – Cuba (one sp.)  
*Galibrotus* Šilhavý, 1973 – Cuba (three sp.)  
*Manahunca* Šilhavý, 1973 – Cuba (three sp.)  
*Martibianta* Šilhavý, 1973 – Virgin Islands (one sp.)  
*Negreaella* Avram, 1977 – Cuba (five sp.)  
*Vestitecola* Šilhavý, 1973 – Haiti (one sp.)  
 Family Samoidae  
*Neoorsa* Ozdikmen, 2006 (= *Orsa* Šilhavý, 1979) – Haiti (one sp.)  
*Reventula* Šilhavý, 1979 – Jamaica (one sp.)  
*Vlachiolus* Šilhavý, 1979 – Cuba (one sp.)

### Amblypygi

From the Antillean Archipelago have been recorded 29 species of Amblypygi from four genera (*Charinus*, *Heterophrynus*, *Paraphrynus*, *Phrynus*) and two families (Charinidae and Phrynidae). The endemism is only at species level (25 species), most species being confined to only one island (ARMAS, 2004, 2006, 2007, 2009a, 2010, 2013, ARMAS & AVILA CALVO, 2000, ARMAS & PÉREZ GONZALEZ, 1994, 2001, 2002, ARMAS & TERUEL, 1997, AVILA CALVO & ARMAS, 1997, FRANGANILLO, 1926, MULLINEX, 1975, POCKOCK, 1893, QUINTERO, 1981, 1983, 1986, TERUEL, 2011, TERUEL & QUESTEL, 2011, TERUEL, DE ARMAS & RODRIGUEZ, 2009).

Five species (three *Phrynus*, one *Paraphrynus* and one *Heterophrynus*) are known also from South and Central America, Mexico, the Bahamas or Florida). This is in contrast with the order of Scorpions, where four of the 15 genera are **endemic** to the Antilleans.

As ARMAS (2009b) points out, Cuba has the most diverse amblypygid fauna (two fam., three genera, 19 species, incl. 12 **endemic**). Follows Hispaniola with two families, two genera and seven species, incl. **endemic**). Currently the distribution of the Amblypygi in the Antillean s:

Fam. Charinidae – *Charinus* Simon (12 sp., Cuba, Jamaica, the Dominican Rep., Puerto Rico, the Lesser Antileans)

Fam. Phrynidae – *Heterophrynus* Pocock (one sp., Trinidad and Tobago), *Paraphrynus* Moreno (three sp., Bahamas and Cuba), *Phrynus* Lamarck (14 sp., Cuba, Puerto Rico, the Dominican Republic, US Virgin Isls, Barbados, St. Vincent, Jamaica, Grenada, Haiti, etc.)

### Thelyphonida (Uropygi)

According to the list of ROWLAND & COOKE (1973), on the Antillean islands live only two

sp. of Thelyphonida; *Mastigoproctus baracoensis* Franganillo, 1931 (Cuba) and the second described species in Thelyphonida *M. proscorpio* (Latreille, 1806) (the Dominican Rep., Haiti and Martinique). Another *Mastigoproctus* (*M. pelegri* Armas, 2000) was described later from Cuba. ARMAS (2002) described a new Uropygid from the Dominican Rep., first as *Telyphonellus wetherbee*, then raised in a new genus *Ravilops* Viquez et Armas, 2005. So far the two Cuban *Mastigoproctus* and *Ravilops wetherbee* are considered **endemic species**, *Ravilops* is also **endemic genus** for the Dominican Republic (ARMAS, 2000, 2004, FRANGANILLO, 1931, VIQUEZ & DE ARMAS, 2005).

### Schizomida

Identified Schizomida are known (ÁVILA CALVO & ARMAS, 1997, ARMAS, 1977, 1989, 2004, 2011, ARMAS & ABUD ANTUN, 1990, 2002, ARMAS & TERUEL, 2002, CAMILO & COKENDOLPHER, 1988, DUMITRESCU, 1973, 1977, HILTON, 1933, QUINTERO, 1983, REDDELL & COKENDOLPHER, 1995, ROWLAND & REDDELL, 1977, TERUEL, 2003, 2004, 2007) from:

Cuba – *Antillostenochrus alejandroi*, *A. alticola*, *A. cokendolpheri*, *A. gibarensis*, *A. holguin*, *A. planicauda*, *Cubazomus armasi*, *C. montanus*, *C. orghidani*, *C. rowlandi*, *Guanazomus armatus*, *Reddellzomus cubensis*, *Rowlandius abeli*, *R. alayoni*, *R. baracoae*, *R. biconouros*, *R. cubanacan*, *R. cupeyalensis*, *R. decui*, *R. digitiger*, *R. falcifemus*, *R. florentiae*, *R. gladiger*, *R. gracilis*, *R. Guantanamo*, *R. labarcae*, *R. littoralis*, *R. marianae*, *R. melici*, *R. mixtus*, *R. monticola*, *R. negreai*, *R. ramosi*, *R. recuerdo*, *R. reyesi*, *R. serrano*, *R. siboney*, *R. terueli*, *R. toledo*, *R. vinai*, *Stenochrus alejandroi*, *S. portoricensis*, *Troglocubazomus orghidani*, *T. rowlandi*

Pinos (Isla de la Juventud) – *Luisarmasius insulaepinorum*

Hispaniola (the Dominican Rep. and Haiti) – *Antillostenochrus brevipatellatus*, *A. subcerdoso*, *Cokendolpherius ramosi*, *Rowlandius anasilviae*, *R. casabito*, *R. ducoudrayi*, *R. engombe*, *R. isabel*, *R. jarmillae*, *R. lantiguai*, *R. longipalpus*, *R. naranjo*, *R. virginiae*, *Stenochrus subcerdoso*, *S. portoricensis*

Dominica – *Stenochrus portoricensis*

Puerto Rico (incl. Isla Desecheo, Mona Island) – *Antillostenochrus cerdoso*, *Luisarmasius yunqueensis*, *Rowlandius desecheo*, *R. monensis*

Jamaica – *Caribezomus laurae*, *Rowlandius cousinensis*, *R. peckorum*, *R. primibiconourus*, *R. viridis*, *Stenochrus portoricensis*, *Stewardpeckius troglobius*

Navassa – *Rowlandius steineri*

The Virgin Islands – *Stenochrus portoricensis*  
Martinique – *Hansenochrus dispar*, *Rowlandius insignis*

There is also unidentified material from Barbados and the Cayman Islands.

Except of *Stenochrus portoricensis*, all species are **endemic** to the respective islands. **Endemic** to the Caribbean are also the genera *Cokendolpherius* (Cuba), *Luisarmasius* (Cuba, Pinos, Puerto Rico), *Reddellzomus* (Cuba), *Stewardpeckius* (Jamaica), *Cubazomus* (Cuba), *Troglocubazomus* (Cuba).

### Araneae

SIMON (1888), ALAYON (1994, 1995, 2000, 2005), BRUYANT (1940, 1945, 1947, 1948), DUMITRESCU (1973), DUMITRESCU & GEORGESCU (1992)

According to ALAYÓN (2000), the spiders recorded from Cuba are 567 species of 52 families, including 247 endemic of the Antilleans (43.56%) with seven endemic genera

From the Antilleans are known some **endemic genera** of spiders, but **no endemic families**:

Family Theraphosidae

*Antillena* Bertani, Huff et Fukushima, 2017 – the Dominican Rep. (one sp.)

*Caribena* Fukushima et Bertani, 2017 – Puerto Rico, Cuba, US Virgin Isls, Martinique (two sp.)

*Cubanana* Ortiz, 2008 – Cuba (one sp.)

*Nesipelma* Schmidt et Kovarik, 1996 – Nevis (one sp.)

Family Ochyroceratidae

*Fageicera* Dumitrescu et Georgescu, 1992 – Cuba

Family Barychelidae

*Troglothele* Fage, 1929 – Cuba

Family Agelenidae

*Neowadotes* Alayón – Hispaniola

Family Cyatholipidae

*Pokennips* Griswold, 2001 – Jamaica

Family Tetragnathidae

*Ancinosphenus* Simon, 1895 – West Indies (one sp.)

*Antillognatha* Bryant, 1945 – Hispaniola

*Hispanognatha* Bryant, 1945 – Hispaniola

Family Linyphiidae

*Lomaita* Bryant, 1948 – Hispaniola

Family Filistatidae

*Antilloides* Breskovit et al., 2016 – Cuba, the Dominican Rep., the Virgin Isls, Puerto Rico

Family Theridiidae

*Jamaitidion* Wunderlich, 1995 – Jamaica (one sp.)

Family Paratropididae

*Anisaspis* Simon, 1891 – St. Vincent (one sp.)



Family Amaurobiidae

**Tugana** Chamberlin, 1948 – Cuba, Hispaniola (four sp.)

Family Anyphaenidae

**Thaloe** Brescovit, 1993 – Cuba, Hispaniola (three sp.)

Family Liocranidae

**Laudetia** Gertsch, 1941 – the Dominican Rep., Puerto Rico (three sp.)

**Mesobria** Simon, 1897 – St. Vincent (one sp.)

Family Ctenidae

**Ciba** Bloom et al., 2014 – Cuba, the Dominican Rep. (two sp.)

**Ohvida** Polotow et Brescovit, 2009 – Cuba, Puerto Rico, Bahamas (nine sp.)

**Trujillina** Bryant, 1948 – Hispaniola, Puerto Rico (three sp.)

Family Pholcidae

**Bryantina** Brignoli, 1985 – Cuba

**Ciboneya** Perez, 2001 – Cuba (four sp.)

**Platnicknia** Özdikmen et Demir, 2009 – Cuba (two sp.)

**Tainonia** Huber, 2000 – Hispaniola (five sp.)

Family Prodidomidae

**Caudalia** Alayón, 1980 – Cuba

**Cubanopillus** Alayón et Platnick, 1993 – Cuba

Family Sparassidae

**Decaphora** Franganillo, 1931 – Cuba

Family Salticidae

**Allodecta** Bruyant, 1950 – Jamaica

**Bythocrotus** Simon, 1903 – Hispaniola

**Caribattus** Bryant, 1950 – Jamaica

**Cerionesta** Simon, 1901 – St. Vincent

**Commoris** Simon, 1902 – Guadeloupe, Dominica

**Corticettus** Zhang et Maddison, – Porto Rico, Hispaniola

**Paraplexippus** Franganillo, 1930 – Cuba

**Parasaitis** Bruyant, 1950 – Jamaica

**Parathiodina** Bruyant, 1943 – Hispaniola

**Popcornella** Zhang et Maddison, 2012 – Hispaniola, Puerto Rico

**Truncattus** Zhang et Maddison, 2012 – Hispaniola

### Opilioacarida

From Cuba and the Dominican Republic has been described the new genus *Caribeacarus* Vásquez et Klompen, 2009, from which two species have been described from Cuba, one also from the Dominican Republic and one from Panama. Another species, described from Cuba (and the Antillean Isls), was *Neoacarus orghidani* (Juvara-Balş et Baltac, 1977).

Two of the three Cuban species and *Caribeacarus panamensis* live in caves (BERON, 2014, JUVARA-BALŞ & BALTAC, 1977, VÁSQUEZ & KLOMPEN, 2009).

### Parasitiformes (Mesostigmata and Ixodida)

BERON (2014), CRUZ (2001)

From *Capromys pilorides* (Rodentia, Capromyidae) has been described the **endemic Ixodes**

*capromydis* Černý, 1966 (endemic subgenus *Alloixodes*).

The purely Neotropical family of Spelaeorhynchidae (parasites on bats of the families Phyllostomatidae and Mormoopidae) are found, together with these bats, in Cuba, Jamaica, Puerto Rico and the Dominican Republic, but also in Central America.

### Holothyrida

The only Holothyrid recorded from the Antilleans is the **endemic** genus *Carabothyrus* Kontschán et Mahunka with one species *C. barbatus* Kontschán et Mahunka, described from the Dominican Republic (KONTSCHÁN & MAHUNKA, 2004).

### Comparison between the faunas of Central America and the Antilleans

**Palpigradi** – known only from the Antilleans

#### Ricinulei

##### Central America

In the seven countries of Central America (without S. Mexico) are registered 18 species of Ricinulei:

*Cryptocellus* Westwood, 1874 – 12 species

*Pseudocellus* Platnick, 1980 – six species

##### The Antilleans

Two **endemic** species of *Cryptocellus* from Cuba

#### Solifugae – endemic genera in bold

**Central America** – From the seven countries of Central America (without S. Mexico) are known 10 sp. of Solifugae of five genera, all belonging to Ammotrechidae family (Ammotrechinae): *Ammotrecha* Banks, 1900 (four sp.), *Ammotrechella* Roewer, 1934 (two sp.), *Ammotrechesta* Roewer, 1934 (five sp.), *Innesa* Roewer, 1934 (one sp., **endemic genus**), *Ammotrechula* Roewer

**The Antilleans** – From the Antilleans are known four genera of Solifugae (all from Ammotrechidae), three of them endemic, all belonging to Ammotrechidae: *Ammotrechinus* Roewer, 1934 (one sp.), *Ammotrechella* Roewer, 1934 (nine sp.), *Ammotrechona* Roewer, 1934 (one sp.),



**Antillotrecha** Roewer, 1934 (three sp.)

All Solifugae in both areas belong to the same family. There is only one genus in common (*Ammotrechella*), the species are **endemic**.

**Amblypygi**

**Central America** The Amblypygids are represented in Central America by nine sp.

Fam. Charinidae – *Charinus* Simon

Fam. Phrynidae – *Phrynus* Lamarck, *Paraphrynus* Moreno

**The Antilleans** – 29 species of Amblypygi from four genera (*Charinus*, *Heterophrynus*, *Paraphrynus*, *Phrynus*) and the same two families (Charinidae and Phrynidae). The **endemism** is only on species level (25 species). Except of *Heterophrynus*, known from the islands Trinidad and Tobago by the Venezuelan coast, the generic composition of Mesoamerica and the Antilleans is the same.

**Thelyphonida (Uropygi)**

**Central America** – five endemic species of three endemic genera (*Valeriphonus* Viquez et Armas **endemic** for Costa Rica, *Mayacentrum* Viquez et Armas – Guatemala, Belize, Honduras, El Salvador, *Mimoscorpis* Pocock – Guatemala)

**The Antilleans** – four species (*Mastigoproctus* Pocock – three in Cuba, Haiti and Martinique, *Ravilops* Viques et Armas). All species and the genus *Ravilops*, are **endemic** for the Antilleans.

**Schizomida**

Central America

In Central America (between Mexico and Colombia) are recorded seven species, but there is also unidentified material from many places (REDDELL & COKENDOLPHER, 1995). Besides the largely distributed *Stenochrus portoricensis* (Guatemala, Honduras, Nicaragua, Belize), from Central America are known the genera *Hansenochrus* (Costa Rica, Panama), *Rowlandius* and *Surazomus* (Costa Rica). *Surazomus* Reddell et Cokendolpher is known also from many Southamerican countries. *Rowlandius* Reddell et Cokendolpher is widespread in the Caribbean islands. *Hansenochrus* Reddell et Cokendolpher is found also in South America and the Caribbean.

**The Antilleans**

From the Antilleans are known Schizomids of nine genera (six **endemic**), all belonging to one family – Hubbardiidae.

**Central America**

- *Cubazomus* Red. et Cokendolpher  
- *Heterocubazomus* Teruel

*Rowlandius*=====*Rowlandius* Red. et Cok.  
*Stenochrus*=====*Stenochrus* Chamberlin  
*Piaroa* Manz. et al. -

- *Luisarmasius* Red. et Cok.  
- *Stewardpeckius* Red. et Cok.

- *Reddellzomus* Armas  
- *Cokendolpherius* Armas

*Surazomus* -  
*Hansenochrus*=====*Hansenochrus* Red. et Cok.

*Mayazomus* Red. et Cok. (*Heteronochrus*  
Armas et Viques) (Guatemala) -

*Belicenzomus* Armas et Viques -

The present list is based on the papers of: ÁVILA CALVO & ARMAS (1997), ARMAS (1977, 1989, 2004), ARMAS & ABUD ANTUN (1990, 2002), ARMAS & TERUEL (2002), CAMILO & COKENDOLPHER (1988), DUMITRESCO (1973, 1977), HILTON (1933), QUINTERO (1983a), REDDELL & COKENDOLPHER (1995), ROWLAND & REDDELL (1977), AND OTHERS.

Identified Schizomida are known from:

Cuba – *Cokendolpherius*, *Reddellzomus*, *Heterocubazomus*, *Cubazomus armasi*, *C. orghidani*, *C. rowlandi*, *Rowlandius alayoni*, *R. baracoae*, *R. biconouros*, *R. cubanacan*, *R. decui*, *R. digitiger*, *R. gladiger*, *R. labarcae*, *R. negreai*, *R. recuerdo*, *Stenochrus alejandroi*, *S. portoricensis*,

Pinos (Isla de la Juventud) – *Luisarmasius insulaepinorum*

Hispaniola (the Dominican Rep. and Haiti) – *Rowlandius anasilviae*, *R. brevipatellatus*, *R. casabito*, *R. ducoudrayi*, *R. engombe*, *R. isabel*, *R. jarmillae*, *R. lantiguai*, *R. longipalpus*, *R. naranjo*, *R. virginiae*, *Stenochrus subcerdoso*, *S. portoricensis*

Dominica – *Stenochrus portoricensis*

Puerto Rico (incl. Isla Desecheo, Mona Island) – *Luisarmasius yunquensis*, *Rowlandius desecheo*, *R. monensis*

Jamaica – *Rowlandius cousinensis*, *R. peckorum*, *R. primibiconourus*, *R. viridis*, *Stenochrus portoricensis*, *Stewardpeckius troglobius*

The Virgin Islands – *Stenochrus portoricensis*

Martinique – *Hansenochrus dispar*, *H. insignis*

There is also unidentified material from Barbados and the Cayman Islands.

Except of *Stenochrus portoricensis*, all species are **endemic** to the respective islands. **Endemic** to the Caribbean are also the genera *Cokendolpherius* (Cuba), *Luisarmasius* (Cuba, Pinos, Puerto Rico), *Reddellzomus* (Cuba), *Stewardpeckius* (Jamaica), *Cubazomus* (Cuba), *Heterocubazomus* (Cuba).

**Pseudoscorpiones**

**Central America**

In the seven countries of Central America are recorded Pseudoscorpions of 18 genera and 12 families (Chthoniidae, Bochicidae, Neobisiidae, Syarinidae, Ideoroncidae, Sternophoridae, Garypinidae, Atemnidae, Olpiidae, Cheliferidae, Chernetidae, Withiidae).

**The Antilleans**

The fauna of Pseudoscorpiones in the Antilleans consists in 39 genera and 16 families.

Genera and families in both areas:

**Central America****The Antilleans**

## Chthoniidae

*Caribchthonius*=====*Caribchthonius* Muchmore  
- *Mundochthonius* Chamberlin  
*Pseudochthonius*=====*Pseudochthonius* Balzan  
*Tyrannochthonius*=====*Tyrannochthonius* Chamberlin

## Lechythiidae

- *Lechytia* Balzan

## Tridenchthoniidae

- *Tridenchthonius* Balzan

## Bochicidae

*Antillobisium* Dumitresco et Orghidan  
(**end. genus**, Cuba)

*Mexobisium* Muchmor=====*Mexobisium* Muchmore  
- *Troglobochica* Muchmore  
(**end. genus**, Jamaica)

## Neobisiidae

*Microbisium* Chamberlin -

## Syarinidae

*Ideobisium* Balzan =====*Ideobisium* Balzan  
*Ideoblothrus* Balzan=====*Ideoblothrus* Balzan

## Ideoroncidae

- *Typhloroncus* Muchmore  
*Albiorix* Chamberlin -  
*Pseudalbiorix* Barba et Pérez -

## Sternophoridae

*Garyops*=====*Garyops* Banks  
- *Idiogaryops* Hoff

## Cheiridiidae

- *Cheiridium* Menge  
- *Cryptocheiridium* Chamberlin

## Pseudochiridiidae

*Pseudochiridium* With

## Garypinidae

*Pseudogarypinus* Beier -  
*Serianus* Chamberlin=====*Serianus* Chamberlin

## Atemnidae

- *Atemnus* Canestrini  
- *Oratemnus* Beier  
*Paratemnoides* Harvey=====*Paratemnoides* Harvey

## Olpiidae

*Aphelolpium* Hoff  
*Olpiolum* Beier=====*Olpiolum* Beier  
- *Planctolpium* Hoff

## Cheliferidae

*Cubachelifer* Hoff (Dominican Rep., Cuba –  
**endemic genus**)  
*Parachelifer* Chamberlin==*Parachelifer* Chamberlin  
- *Tyrannochelifer* Chamberlin

## Chernetidae

*Antillochernes* Muchmore  
*Bituberochernes* Muchmore  
*Byrsochernes* Beier  
*Caribochernes* Beier (the Dominican Rep.,  
**endemic genus**)  
*Chelanops* Gervais  
*Chernes* Menge  
*Dinochernes* Beier  
- *Hesperochernes* Chamberlin  
*Lustrochernes* Beier=====*Lustrochernes* Beier  
*Parachernes* (*Parachernes*) Chamberlin -  
*Parachernes* (*Scapanochernes* Beier)=====*Parachernes*  
(*Scapanochernes* Beier)  
*Parazaona* Beier

## Withiidae

*Cacodemonius* Chamberlin=====*Cacodemonius*  
Chamberlin  
*Dolichowithius* (*D.*) Chamberlin=====*Dolichowithius*  
(*D.*) Chamberlin

Both areas have 10 families and 15 genera of Pseudoscorpions in common. No endemic families, no endemic genera in Central America, four endemic genera in the Antilleans.

**Scorpiones****Central America****Antilleans (without  
Trinidad and Tobago)**

	Buthidae	
		<i>Alayotityus</i> Armas
<i>Centruroides</i>	=====	<i>Centruroides</i> Marx
-		<i>Microtytius</i> K.-W.
-		<i>Rhopalurus</i> Thorel
-		<i>Tityopsis</i> Pocock
<i>Tityus</i>	=====	<i>Tityus</i> C.L. Koch
Chactidae		-
<i>Chactas</i> Gervais		-
	Hormuridae	
<i>Opisthacanthus</i>	=====	<i>Opisthacanthus</i> Peters
	Scorpionidae	
-		<i>Cazierus</i> Francke
-		<i>Cryptoiclus</i> Ter. et Kov.
<i>Didymocentrus</i>	=====	<i>Didymocentrus</i> Kraep.
-		<i>Heteronebo</i> Pocock
<i>Diplocentrus</i> Peters		-
	Euscorpiidae	
<i>Plesiochactas</i> Pocock		-
	Vaejovidae	
<i>Vaejovis</i> C.L. Koch		-

**Conclusion**

**Palpigradi** are known only from the Antilleans.

In the seven countries of Central America (without counting Yucatan) are known 18 sp. of **Ricinulei** of both American genera. From the Antilleans (Cuba) have been recorded only two (endemic) species. The genus *Cryptocellus* Westwood is in common of both areas.

From the seven countries of Central America (without S. Mexico) are known **Solifugae** of five genera, all belonging to Ammotrechidae family (Ammotrechinae). Two genera seem endemic. From the Antilleans are recorded four genera (all from the same family Ammotrechidae), three of them endemic. There is only one genus in common among both areas (*Ammotrechella*), the species are **endemic**.

The **Amblypygi** of the Antilleans are much numerous and varied (29 sp. of four genera), than in the seven countries of Central America (nine sp. of two genera, the families are the same). Again difference in the research?

Both areas have comparable fauna of **Thelyphonida (Uropygi)** (each one has the genus *Mastigoproctus* plus one endemic genus).

The **Schizomida** of both areas belong to one family, but the genera are very different (seven gen-

era, one endemic in Central America, eight genera in the Antilleans, six endemic). Both areas have three genera in common. Again difference in the research?

**Opiliones.**

**Cyphophthami** – unknown in both areas.

**Eupnoi:** Sclerosomatidae (in both areas the same genera *Geaia* and *Prionostemma*);

**Dyspnoi** – in Honduras the genus *Trilasma* Goodnight et Goodnight, 1942 (Nemastomatidae, Ortholasmatinae); in the Antilleans Dyspnoi are not recorded.

**Laniatores.** The Catalogue of KURY (2003) enumerates from the seven countries of Central America 56 genera and nine families of Laniatores (Cosmetidae, Cranidae, Gonyleptidae, Stygnommatidae, Samoidae, Pyramidopidae, Manaosbiidae, Stygnopsidae, Zalmoxidae). From the Antilleans in the same Catalogue are listed 117 species of Opiliones Laniatores, belonging to 65 genera and 11 families: Cosmetidae, Agoristenidae, Stygnidae, Stygnommatidae, Kimulidae (= Minuidae), Biantidae, Samoidae, Podoctidae, Manaosbiidae, Phalangodidae, Zalmoxidae. From this number there are genera and five families (underlined) in common. The endemic genera of opilions in the islands are 13 (Biantidae, Kimulidae). There are **no endemic families**.

The fauna of **pseudoscorpions** in the Antilles seems much richer (39 genera, 16 families) than the fauna of the seven countries of Central America (33 genera, 13 families). Both areas have 13 genera in common.

This comparison shows that from eight genera of **scorpions** in Central America and 11 genera in the Antilleans there are four genera in common. Three families in Central America (Chactidae, Euscorpiidae and Vaejovidae) are not recorded in the Antilleans. The fact that the scorpions in the islands are more genera and species than the scorpions of Central America, region with land connection with such rich areas like Mexico and northern South America. One explanation is the very active speciation, especially in Cuba (55 sp.) and the Dominican Rep. (40 species). The other explanation is the presence in Cuba of such specialists as Armas and Teruel.

**Araneae**

According to Alayón (2000), the spiders recorded from Cuba are 567 species of 52 families, including 247 endemic de Antilleans (43.56%) with eight endemic genera (*Troglithele* Fage, *Bryantina*

Brignoli, *Fageicera* Dumitresco et Georgesco, *Caudalia* Alayón, *Cubanopilus* Alayón et Platnick, *Decaphora* Franganillo, *Paraplexippus* Franganillo).

From the Antilleans are known some **endemic genera** of spiders.

**Opilioacarida** – Two genera from the same family (*Neocarus* Chamberlin et Mulaik and *Caribeacarus* Vasquez et Klompen live in both areas.

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The species are (so far) **endemic**.

**Holothyrida** are unknown in Central America. From the Dominican Republic has been described the endemic species *Caribothyrus barbatus* Kontchán et Mahunka, 2004.

In general, there is considerable difference (artificial  $\xi$ ) between the arachnofaunae of both areas, but on low (genus, species) level. The Antilleans seem richer (or better explored).



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## Сравнителен арахногеографски анализ на фауните на Централна Америка и Антилските (Карибските) острови

Петър БЕРОН

(Резюме)

Разпространението на всички разреци от клас Arachnida в Централна Америка и Антилските острови е анализирано и сравнено, заедно с анализ на палеогеографската история на районите и на разните опити на зоогеографите да ситуират континенталната и островната части върху зоогеографската карта на Западното полукълбо.

Заклучения:

**Palpigradi** са познати само от Антилските острови.

В седемте страни на Централна Америка (без да броим Юкатан) са познати 18 вида **Ricinulei** от двата американски рода. От Антилите (Куба) са съобщени само два (ендемични?) вида. Род *Cryptocellus* е общ за двата района.

От седемте страни на Централна Америка (без Южно Мексико) са познати **Solifugae** от пет рода, всички от Ammotrechidae (Ammotrechinae). Два рода изглеждат ендемични. От Антилите са съобщени четири рода (всички от същото сем. Ammotrechidae), три от тях ендемични. Има само един род общ и за двата района (*Ammotrechella*), видовете са ендемични.

Амблипигите (**Amblypygi**) на Антилите са по-многобройни и ранообразни (29 в. от четири рода), отколкото в седемте страни на Централна Америка (девет вида от два рода, семействата са същите). Отново разлика в проучеността?

Двата района имат различна фауна от **Thelyphonida (Uropygi)**: в Централна Америка има три ендемични рода и пет ендемични вида, в Антилските острови има ендемични видове *Mastigoproctus* и един ендемичен род.

Схизомидите (**Schizomida**) в двата района спадат към едно и също семейство, но родовете са различни (седем рода, един ендемичен в Централна Америка, осем рода, шест ендемични в Антилите). Двамата района имат три общи рода. Отново разлика в проучеността?

**Opiliones. Cyphophthami** – непознати и в двата района. **Eupnoi**: Sclerosomatidae (и в двата района едни и същи родове *Geaia* и *Prionostemma*); **Dyspnoi** – в Хондурас е познат род *Trilasma* (Nemastomatidae, Ortholasmatinae); в Антилските острови подразред Dyspnoi не е съобщен. **Laniatores**. Каталогът на KURY (2003) изброява за седемте страни на Централна Америка 56 рода

и девет семейства от Laniatores (Cosmetidae, Cranidae, Gonyleptidae, Stygnommatidae, Samoidea, Pyramidopidae, Manaosbiidae, Stygnopsidae, Zalmoxidae). От Антилите в същия Каталог са изброени 117 вида Opiliones Laniatores, които спадат към 65 рода и 11 семейства: Cosmetidae, Agoristenidae, Stygnidae, Stygnommatidae, Kimulidae (= Minuidae), Biantidae, Samoidea, Podoctidae, Manaosbiidae, Phalangodidae, Zalmoxidae. От този брой има пет общи семейства (подчертани). Ендемичните родове по островите са 13 (от Biantidae и Kimulidae). **Няма ендемични семейства.**

Фауната на **псевдоскорпионите** в Антилите изглежда по-богата (39 рода, 16 семейства), отколкото тази на седемте страни на Централна Америка (33 рода, 13 семейства). Двата района имат 13 общи рода.

Това сравнение сочи, че от осем рода **скорпиони** в Централна Америка и 11 рода в Антилите има четири общи рода. Три семейства от Централна Америка (Chactidae, Euscorpidae и Vaejovidae) не са съобщавани за Антилите. Интересен факт е, че скорпионите по островите са повече родове и видове, отколкото скорпионите в Централна Америка, която и свързана по суша с такива богати райони като Мексико и северната част на Южна Америка. Едно от обясненията е много активното видообразуване, специално в Куба (55 вида) и Доминиканската република (40 вида). Друго обяснение е наличието в Куба на такива специалисти като Armas и Teruel.

**Araneae.** От Куба са съобщени 567 вида от 52 сем., вкл. 247 ендемични за Антилите (43.56%) със седем ендемични рода (Ochyroceratidae – *Fageicera*, Barychelidae – *Troglothele*, Pholcidae – *Bryantina*, Prodidomidae – *Caudalia*, *Cubanopillus*, Sparassidae – *Decaphora*, Salticidae *Paraplexippus* Franganillo). Изброени са редица ендемични родове за Антилите и за Централна Америка. Няма ендемични семейства.

**Opilioacarida.** Два рода от едно и също семейство (*Neocarus* и *Caribeacarus*) се срещат в двата района. Видовете са (засега) ендемични.

**Holothyrida** са непознати в Централна Америка. От Доминиканската република беше описан ендемичният вид *Caribothyrus barbatus*.

Общо взето, има значителна разлика (изкуствена ?) между арахнофауните на двата района, но на ниско ниво (род, вид). Антилите изглеждат по-богати (или по-добре изследвани). И в двата района липсват ендемични семейства.