

Annotated Checklist of the Arachnids and Myriapods of the Mariana Islands, Micronesia

by

Alexander M Kerr

Marine Laboratory
University of Guam

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SUMMARY

This report provides an annotated checklist of all the arachnids and myriapods known from the Mariana Islands, largely taken from the literature. A total of 195 species of arachnids have been reported, including 80 spiders, 14 pseudoscorpions, three short-tailed whipscorpions, two harvestmen, two scorpions and 94 members of the Acari (ticks and mites). As well, 17 myriapods have been reported, six centipedes and 11 millipedes. The arachnid and myriapod faunas are poorly known; many of the species reported here have only been identified to genus or family, or are known only tentatively, as from unpublished reports or have not been deposited in stable repositories.

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INTRODUCTION

There are 11 classes of living arachnids. Of these, only six are likely to be encountered on Guam: the Acari (ticks and mites), Pseudoscorpiones (pseudoscorpions), Scorpiones (scorpions), Schizomida (short-tailed whipscorpions), Opiliones (harvestmen or daddy long-legs) and Araneae (spiders). The pseudoscorpions are only at most a few millimeters long and usually live in the leaf litter of the forest floor. They resemble scorpions with their clawed pedipalps (crab-like pincers), but the end of the abdomen is rounded and lacks a stinger. The whipscorpions are somewhat spider-like in overall appearance, but rather more elongate, with a notable tail. They live under rocks and rotting wood where they prey on other small arthropods. Harvestmen live in the forest and are seen in openings to caves and moist limestone karst. By far the most commonly encountered arachnids on Guam are spiders and the following account will concentrate on this group. Unless otherwise noted, animal size indicates body length.

Cultural History

In Chamorro, the native language of Guam, spiders are called “sanye’ye”, “apayuak” or, its apparent variant, “payuak.” None of the mites, pseudoscorpions, harvestmen or whipscorpions are poisonous. The common species of scorpion reported from Guam is small (to 4 cm or 2.5 in), dark and has a sting that feels like that of a small ant. While the North American black-widow spider is occasionally seen in shipments of material from the mainland, it has not established itself on the island. There is, however, a native spider *Cheiracanthium diversum* whose bite, though not as venomous as that of the black widow, can still induce nausea. This spider is whitish to greenish,



Figure 1. The polydesmoid millipede *Harpappe haydeniana* or yellow-spotted millipede, introduced to the Marianas.

to 1 cm in body length with a somewhat flattened, crablike appearance. The largest spider on Guam *Heteropoda venatoria*, brown with a leg-span to 10 cm (4 in), is often seen on walls or in outdoor kitchens, especially at night. This species' bite is not particularly toxic, but is painful because of the spiders' large size.

Diversity and Systematics

There are no comprehensive surveys of Guam's arachnids, hence the number of species from the islands are not known. The pseudoscorpions are good dispersers, being small and hitching rides on insects and birds, and species can be broadly distributed in the Pacific. Hence, Guam likely has a good representation, over a dozen species, of at least the geographically widespread forms, as well as six species described from the archipelago. The small size, good dispersal ability and high ecological and geographic diversity of mites also indicate that Guam possesses a diverse fauna of these arachnids. There is one species of scorpion on Guam *Liocheles australasiae*, which is also widely distributed throughout Micronesia and the western Pacific. The diversity of harvestmen and tailless whipscorpions is low and they are seldom seen and often endemic forms. Of Guam's arachnids, spiders have been relatively more studied, generally in ecological studies. Commonly encountered families include Araneidae (the orb-web weavers), Salticidae (jumping spiders) and Theridiidae (cobweb weavers). These families probably include spiders either endemic to the Mariana Islands or western Micronesia.

Ecology

At certain times of the year Guam's jungles can seemingly become a maze of spider webs. These large webs belong to the communal-living spider *Cyrtophora mollucensis* also found on many other islands in the Pacific. The spiders build their webs adjacent to one another in groups of 2 to over 20 spiders. These group webs can be over 3 m (10 ft) in height and inadvertently ensnare even moderately sized birds, which, however, are not captured or eaten by the much smaller spiders. Further, the webs, unlike those

of most other orb weavers, are not sticky. This appears to be an adaptation to a rainy climate. The webs are not as efficient snares as sticky webs, but only the latter become completely ineffective during frequent tropical rains. Upon closer inspection, these webs are seen to house other species of spiders, as well. These are species of *Argyroides*, tiny (to 4 mm body length) web invaders that do not build their own web. The most common one has a high, silvered abdomen and may be found in the orb webs of another common Guam spider, *Argiope appensa*. *Argiope* is a large (to 3 cm), yellow spider that builds a flat vertical orb, often on roadsides or beach strand. Its web may also contain to four zigzag swatches of white silk radiating from the hub. Sometimes over ten silver *Argyroides* may invade an *Argiope* web, stealing its prey and occasionally even eating the much larger host.

Travelers often comment on the seemingly high number of spider webs in Guam's jungles. It has been speculated that this is an indirect effect of the demise of Guam's bird fauna due to predation by the brown tree snake (Kerr 1993). It is thought that spider numbers have increased to take the niche formerly filled by insect-eating birds. However, episodically high densities of spiders are known from other islands whose bird faunas are relatively intact. Recently, Rogers et al. (2012) address this issue and found increased abundance of spiders on Guam compared to Rota, an adjacent island with an intact avian fauna.

Outline of this report

The species are arranged alphabetically within families, themselves arranged alphabetically within higher taxa. Notes are primarily to indicate when another authority may also refer to the indicated species. The reference J. Beatty and J. Berry (unpubl.) refers to the list of spiders collected by these arachnologists while on Guam briefly in the mid-1970s. J. Berry (pers. comm.) refers to an exchange I had with Jim Berry via email in late 2012. Evenhuis et al. (2010) is a technical report by the Bishop Museum, Honolulu, on the terrestrial arthropod fauna of Pagan that includes sections on arachnids and myriapods. They indicate that the specimens were sent to the Bishop

Museum and identified by the museum's entomologists. It also provides a nice history of collecting on this remote island that extends to the late 19th century. Bourquin (2002) is an unpublished report of arthropods of Anatahan prepared for the Division of Wildlife, Saipan. The spiders were either identified by the author or sent for identification to Dr. M. Saaristo at Turku University, Finland, where the vouchers are presumably now housed. Moore (2012) refers to the online database *Insects of Guam* maintained by Aubrey Moore (University of Guam). R. A. Clouse (pers. comm.) indicates conversations with Ron Clouse (American Museum) who collected schizomids on Guam in 2011.

Alexander M. Kerr
uogmarinelab@gmail.com
Marine Laboratory
University of Guam
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Checklist of Arachnids and Myriapods of the Mariana Islands

(SUB)CLASS		
(SUB)ORDER		
Family		
<i>Genus and species</i>	Notes	References
CLASS ARACHNIDA		
ORDER ARANEAE		
Anyphaenidae		
Gen. sp.		Evenhuis et al. (2010)
Araneidae		
<i>Araneus ventricosus</i> (L. Koch, 1878)	Not established; found on a Korean ship in port.	Moore (2012)
<i>Argiope appensa</i> (Walckenaer, 1841)	Always makes linear to cruciate stabilimenta.	Kerr (1993)
<i>Argiope</i> sp.	Apparently non <i>A. appensa</i> ; small specimens at least make a circular stabilimentum.	Evenhuis et al. (2010)
<i>Cyclosa bifida</i> (Doleschall, 1859)		Bourquin (2002)
<i>Cyrtophora moluccensis</i> (Doleschall, 1857)		Platnick (2012)
<i>Gasteracantha cancriformis</i> (Linnaeus, 1758)	Likely, the <i>Thelacantha mammosa</i> (C.L.Koch, 1844) in Bourquin (2002).	A.M. Kerr, pers obs
<i>Gasteracantha fasciata</i> Guérin, 1838		Platnick (2012)
<i>Gasteracantha rubrospinis</i> Guérin, 1838		Platnick (2012)

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Larinioides cornutus (Clercki, 1757)

Not established; found on a Korean ship in port.

Moore (2012)

Neoscona sp D

Lettering follows J. Beatty and J. Berry (unpubl.)

J. Berry (pers. comm.)

Neoscona theisi (Walckenaer, 1841)

Type locality is Guam.

Moore (2012)

Barychelidae**Brushed trapdoor spiders***Sason maculatum* (Roewer, 1963)

Roewer (1963)

Clubionidae**Sac-web spiders**

Gen. sp. 1

Evenhuis et al. (2010)

Gen. sp. 2

Evenhuis et al. (2010)

Gen. sp. 3

Evenhuis et al. (2010)

Corinnidae**Swift spiders**

Gen. sp.

Evenhuis et al. (2010)

Dipluridae**Funnel-web spiders***Masteria hirsuta* L. Koch, 1873

Roewer (1963)

(SUB)CLASS		
(SUB)ORDER		
Family		
<i>Genus and species</i>	Notes	References
Gnaphosidae	Ground spiders	
Gen. sp. 1		Evenhuis et al. (2010)
Gen. sp. 2		Evenhuis et al. (2010)
Linyphiidae	Sheetweb spiders	
Gen. sp.	Bourquin (2002) lists a Micronetinae sp. that may be this species.	Evenhuis et al. (2010)
<i>Neonesiotes remiformis</i> Millidge, 1991		Bourquin (2002)
<i>Microbathyphantes palmaris</i> (Marples, 1955)	<i>Priscipalpus palmaris</i> of Beatty et al. (1991).	J. Berry (pers. comm.); Beatty et al. (1991)
Liocranidae	Spiny-legged sac spiders	
<i>Apostenus</i> sp.		Evenhuis et al. (2010)
Lycosidae	Wolf spiders	
Gen. sp.		Evenhuis et al. (2010)
<i>Pardosa marcheii</i> Simon, 1890	Evenhuis et al. (2010) lists a <i>Pardosa</i> sp. that may be this species.	Platnick (2012)
<i>Schizocosa</i> sp. 1		Evenhuis et al. (2010)

(SUB)CLASS		
(SUB)ORDER		
Family		
<i>Genus and species</i>	Notes	References
<i>Schizocosa</i> sp. 2		Evenhuis et al. (2010)
<i>Schizocosa</i> sp. 3		Evenhuis et al. (2010)
Miturgidae	Prowling spiders	
<i>Cheiracanthium mordax</i> L. Koch, 1866	Evenhuis et al (2010) list a <i>Cheiracanthium</i> sp. and J. Beatty and J. Berry (unpubl.), list from Guam a <i>C. insularum</i> that may be this species.	A.M. Kerr, pers obs
Nesticidae		
Gen. sp. 1		Evenhuis et al. (2010)
Gen. sp. 2		Evenhuis et al. (2010)
Ochyroceratidae		
<i>Speocera</i> sp.		Bourquin (2002)
Oonopidae		
<i>Ischnothyreus pacificus</i> Roewer, 1963		Roewer (1963)
<i>Opopaea foveolata</i> Roewer, 1963	Bourquin (2002) lists a <i>Opopaea</i> sp. 1 that may be this species.	Roewer (1963)

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Xestaspis loricata (L. Koch, 1873)

Roewer (1963)

Gamasomorpha sp.

Evenhuis et al. (2010)

Oxyopidae

Oxyopes sp. C

This sp. is also found in Australia (J. Berry, pers. comm.). Lettering follows J. Beatty and J. Berry (unpubl.).

J. Berry (pers. comm.)

Pholcidae

Smeringopus pallidus (Blackwall, 1858)

Evenhuis et al. (2010) lists a pholcid gen. sp. and Bourquin (2002) lists two pholcid gen. spp. that may be include species.

Beatty et al. (2008)

Pisauridae

Dolomedes sp

Evenhuis et al. (2010)

Salticidae

Athamas whitmeei O. P.-Cambridge, 1877

A.M. Kerr, pers obs

Bavia aericeps Simon, 1877

A.M. Kerr, pers obs

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Cosmophasis sp. 1

Perhaps *Cosmophasis micarioides* (L. Koch, 1880),
a widespread species.

A.M. Kerr, pers obs

Efate albobicinctus Berland, 1938

Berry (1996)

Hasarius adansonii (Audouin, 1825)

A.M. Kerr, pers obs

Menemerus bivittatus (Dufour, 1831)

A.M. Kerr, pers obs

Myrmarachne sp(p)

A.M. Kerr, pers obs

Plexippus paykulli Audouin, 1826

A.M. Kerr, pers obs

Plexippus petersi (Karsch, 1878)

Evenhuis et al. (2010) lists non-*P. paykulli* *Plexippus*
spp. 1 and 2 that may include this species.

A.M. Kerr, pers obs

Saccasus sp.

Evenhuis et al. (2010)

Thorelliola ensifera (Thorell, 1877)

A.M. Kerr, pers obs

Scytodidae

Scytodes striatipes (L. Koch, 1873)

Evenhuis et al (2010) lists a *Scytodes* sp. and
Bourquin (2002) lists "'*Scytodes*' *fusca*' and
'*Scytodes*' *lugubris*' that may be this species.

Roewer (1963)

Scytodes sp. A

This is listed in J. Beatty and J. Berry (unpubl.) as *S.*
bifurcata , a non-existent species. but should be *S.*
sp. A, an immature specimen from Guam (J. Berry,

J. Berry (pers. comm.)

(SUB)CLASS		
(SUB)ORDER		
Family		
<i>Genus and species</i>	Notes	References
	pers. comm.).	
<i>Scytodes fusca</i> Walckenaer, 1837		J. Berry (pers. comm.)
Sparassidae		
<i>Heteropoda venatoria</i> (Linneaus, 1767)	Evenhuis et al. (2010) and J. Beatty and J. Berry (unpubl.) also give a perhaps <i>non H. venatoria</i> .	Evenhuis et al. (2010)
<i>Olios</i> sp. A	Only known from Guam (J. Berry, pers. comm.). Evenhuis et al. (2010) reports an <i>Olios</i> sp. as does J. Beatty and J. Berry (unpubl.).	Evenhuis et al. (2010)
Tengellidae		
Gen. sp.		Evenhuis et al. (2010)
Tetrablemmidae		
<i>Tetrablemma alterum</i> Roewer, 1963		Roewer (1963)
Tetragnathidae		
<i>Leucauge decorata</i> (Blackwall, 1864)		A.M. Kerr, pers obs
<i>Leucauge</i> sp.	Black and red opisthosoma. Bourquin (2002) lists	A.M. Kerr, pers obs

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

	five "'Leucauge" spp', J. Beatty and J. Berry (unpubl.) gives spp A, C and D.	
<i>Opadometa fastigata</i> (Simon, 1877)	Until recently, placed in <i>Leucauge</i> .	Moore (2012)
<i>Tetragnatha mandibulata</i> Walckenaer, 1837	Evenhuis et al. (2010) lists a tetragnathid gen. sp. that may be this species.	A.M. Kerr, pers obs
Theraphosidae		
<i>Plesiophrictus senffti</i> (Strand, 1907)		Roewer (1963)
Theridiidae		
<i>Argyroides argentatus</i> O. P.-Cambridge, 1880		Kerr (2005)
<i>Argyroides</i> n. sp. E	Found only on Guam (J Berry, pers. comm.). Lettering follows J. Beatty and J. Berry (unpubl.).	Kerr & Quenga (2004)
<i>Argyroides</i> n. sp. F	Lettering follows J. Beatty and J. Berry (unpubl.).	Kerr & Quenga (2004)
<i>Coleosoma floridanum</i> Banks, 1900		Evenhuis et al. (2010)
<i>Latrodectus geometricus</i> Koch 1841	Possibly established; shows up in fruit shipments; Apparently established the naval base, Apra, Guam (A. Moore, pers. comm.).	A.M. Kerr, pers obs
<i>Latrodectus mactans</i> Fabricius, 1775	Not established; shows up in fruit shipments.	A.M. Kerr, pers obs

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

<i>Parasteatoda tepidariorum</i> (C. L. Koch, 1841)	Possibly <i>Achaeranea</i> sp. A of J. Berry (pers. comm.).	A.M. Kerr, pers obs
<i>Achaeranea</i> sp A	Possibly <i>Parasteatoda tepidariorum</i> (C. L. Koch, 1841).	J. Berry (pers. comm.)
<i>Chryso pulcherrima</i> (Mello-Leitão, 1917)		J. Berry (pers. comm.)
<i>Theridion adamsoni</i> Berland, 1934	Synonym of <i>Platnickina mneon</i> (Bösenberg & Strand, 1906) in Yoshida (2001).	J. Berry (pers. comm.)
<i>Nesticodes rufipes</i> (Lucas, 1846)		J. Berry (pers. comm.)
<i>Theridion</i> sp. D	Lettering follows J. Beatty and J. Berry (unpubl.).	J. Berry (pers. comm.)
Thomisidae		
Gen. sp. J	J. Beatty and J. Berry (unpubl.) lists a sp. J from Guam.	Evenhuis et al. (2010)
<i>Thomisus</i> sp.	The "horn-rimmed glasses" thomisid.	A.M. Kerr, pers obs
Titanoecidae		
aff. <i>Titanoeca</i> sp.		Evenhuis et al. (2010)
Gen. sp.		Evenhuis et al. (2010)
Uloboridae		

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Zosis geniculatus (Oliver, 1789)

Common in caves.

A.M. Kerr, pers obs

Zodariidaeaff. *Zodarion* sp.

Evenhuis et al. (2010)

ORDER OPILIONES (=PHALANGIDA)**Harvestmen, Daddy-long-legs****Epadanidae***Dibunus marianae* Goodnight & Goodnight,
1957

Type locality is Guam.

Goodnight & Goodnight
(1957)**Zalmoxidae***Zalmoxis marchei* Roewer, 1912

Type locality is 'Mariannen-Inseln'.

Goodnight & Goodnight
(1957)**ORDER PSEUDOSCORPIONIDA****Pseudoscorpions****Atemnidae***Oratemnus samoanus* Beier, 1932

Beier (1957)

Paratemnoides salomonis (Beier, 1935)

Beier (1957)

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Cheiridiidae

<i>Nesocheiridium stellatum</i> Beier, 1957		Beier (1957)
<i>Haplochernes insulanus</i> Beier, 1957	Type locality is Guam.	Beier (1957)
<i>Lagynochthonius chamorro</i> (Chamberlin, 1947)	Type locality is Guam.	Chamberlin (1947)
<i>Nesidiochernes carolinensis</i> Beier, 1957		Beier (1957)
<i>Nesidiochernes robustus</i> Beier, 1957	Type locality is Tinian.	Beier (1957)
<i>Smeringochernes guamensis</i> Beier, 1957	Type locality is Guam.	Beier (1957)
<i>Thapsinochernes flavus</i> Beier, 1957	Type locality is Guam.	Beier (1957)
<i>Tyrranochthonius</i> sp.	Non <i>L. (=T.) chamorro</i> , also listed by Sato.	Sato (1994)
<i>Verrucachernes oca</i> Chamberlin, 1947	Type locality is Guam.	Beier (1957)

Geogarypidae

<i>Geogarypus longidigitatus</i> (Rainbow, 1897)		Beier (1957)
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Olpiidae

<i>Beierolpium oceanicum</i> (With, 1907)	An intertidal species.	Beier (1957)
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Family uncertain

(SUB)CLASS		
(SUB)ORDER		
Family		
Genus and species	Notes	References
<i>Chelifer mariannus</i> Gervais, 1844	<i>nomen dubium</i>	Harvey (2011)
Withiidae		
<i>Withius australasiae</i> (Beier, 1932)		Beier (1957)
ORDER SCHIZOMIDA		
Hubbardiidae		
aff <i>Apozomus</i> sp. 8	Numbering follows Mark Harvey.	R. A. Clouse (pers. comm.)
Gen. sp.	<i>non Orientzomus</i> sp.	Cokendolpher & Tsurusaki (1994)
<i>Orientzomus</i> sp.		Cokendolpher & Tsurusaki (1994)
ORDER SCORPIONES		
Buthidae		
<i>Isometrus maculatus</i> (De Geer, 1778)	This may be the gen. sp. indet. of Evenhuis et al. (2010)	Bourquin (2002)
Hemiscorpiidae		

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Liocheles australasiae (Fabricius, 1775)Formerly placed in *Hormurus* in the family
Ischnuridae.

Evenhuis et al. (2010)

SUBCLASS ACARI**Mites and ticks****Various families**

94 spp.

An unpubl. compilation by A. Moore (Univ. Guam;
pers. comm.) primarily from Bourquin (2002) and
other sources totals 94 spp. of mites and ticks.

Evenhuis et al. (2010)

CLASS CHILOPODA**Centipedes****ORDER GEOPHILOMORPHA****Ballophilidae***Ityphilus microcephalus* (Brölemann, 1909)

Type locality is the "Mariannes".

Brölemann (1909)

Mecistocephalidae*Mecistocephalus apator* Chamberlin, 1920

Chamberlin (1920)

Mecistocephalus ocanus Chamberlin, 1946

Type locality is Guam.

Chamberlin (1946)

ORDER LITHOBIOMORPHA

(SUB)CLASS**(SUB)ORDER****Family*****Genus and species*****Notes****References**

Henicopidae*Lamyctes guamus* Chamberlin, 1946

Type locality is Guam.

Chamberlin (1920)

Otostigmus astenus (Kohlrausch, 1878)

Kohlrausch (1878)

ORDER SCOLOPENDROMORPHA**Scolopendridae***Scolopendra subspinipes* Leach, 1815

The Marianas's largest centipede.

Moore (2012)

CLASS DIPLOPODA**Millipedes****ORDER POLYDESMIDA (=MEROCHETA)****Polydesmidae***Oxidus gracilis* (Wood, 1864)

Bourquin (2002)

Xystodesmidae*Harpaphe haydeniana* (Wood, 1864)

Perhaps the black-and-yellow millipede polydesmidan sp. PB of Bourquin (2002).

Evenhuis et al. (2010)

Fam. indet.

Gen. sp. PA

Species labelling follows Bourquin (2002).

Bourquin (2002)

(SUB)CLASS		
(SUB)ORDER		
Family		
<i>Genus and species</i>	Notes	References
Gen. sp. PC	Species labelling follows Bourquin (2002).	Bourquin (2002)
ORDER SPIROBOLIDA		
Pachybolidae		
<i>Trigoniulus corallinus</i> (Gervais, 1847)	Perhaps the red-brown spirobolidan sp. A of Bourquin (2002) and the <i>T. lubricinus</i> of Townes (1946 in Bourquin 2002).	Evenhuis et al. (2010)
ORDER INDET.		
Fam. indet.		
Gen. sp. C	Species labelling follows Bourquin (2002).	Bourquin (2002)
Gen. sp. D	Species labelling follows Bourquin (2002).	Bourquin (2002)
Gen. sp. E	Species labelling follows Bourquin (2002).	Bourquin (2002)
Gen. sp. F	Species labelling follows Bourquin (2002).	Bourquin (2002)
Gen. sp. G	Species labelling follows Bourquin (2002).	Bourquin (2002)
ORDER JULIDA		
Julidae		

(SUB)CLASS

(SUB)ORDER

Family

Genus and species

Notes

References

Gen. sp. B

Species labelling follows Bourquin (2002).

Bourquin (2002)

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