

**A review of the biology and biogeography of Mantispidae  
(Neuroptera)**

**Louwrens Pieter Snyman<sup>a,b,d,\*</sup>, Michael Ohl<sup>c</sup>, Christian Walter Werner Pirk<sup>a</sup> and  
Catherine Lynne Sole<sup>a</sup>**

<sup>a</sup>Department of Zoology and Entomology, University of Pretoria, Lynnwood road,  
Hatfield, Pretoria, 0002, South Africa

<sup>b</sup>Department of Veterinary Tropical Diseases, University of Pretoria, Soutpan road,  
Onderstepoort, Pretoria, South Africa, 0110

<sup>c</sup>Museum für Naturkunde, Invalidenstraße. 43, 10115 Berlin, Germany

<sup>d</sup>Current address: Durban Natural Science Museum, Durban, South Africa

\*Corresponding author, e-mail: lokisnyman@gmail.com

**Supplementary material**

**Table S1.** Associations between Mantispidae (+Rhachiberothidae) and spiders from the literature.

Neuroptera taxon	Associated species	Family	Guild	Association	Region	Condition	Reference
Rhachiberothidae							
<i>Mucroberotha</i>							
<i>vesicaria</i>	-	Araneae	-	first instar fed eggs, but did not progress to second instar	Afro	L	(Minter 1990)
Mantispidae							
Symphrasinae							
No records							
Drepanicinae							
<i>Theristria</i> sp.	<i>Achaeearanea</i> sp.	Theridiidae	WD	-	Aus	-	(Austin 1985)
Calomantispinae							
<i>Nolima</i>							
<i>pinal</i>	<i>Achaeearanea idariorum</i>	Theridiidae	WD	larvae reared to adulthood by feeding on eggs	Nea	L	(Macleod & Redborg 1982)

Mantispinae

*Afromantispa*

Acp 5469 - Araneae - larvae reared on eggs Afro L (Bissett & Moran 1967)

*tenella* *Palystes* sp. Sparassidae PD Emerged from egg-sac Afro F n.r.

*Austromantispa*

*imbecilla* *Menemerus bracteatus* Salticidae PD Emerged from egg sac. 26% of egg-sacs contained one/two mantispid larvae Aus F (Rienks 2000)

*imbecilla* *Mopus penicillatus* Salticidae PD Two adults emerged from nest Aus F (Downes 1985)

*imbecilla* *Mopsus penicillatus* Salticidae PD - Aus - (Austin 1985)

*imbecilla* *Achaeearanea decorata* Theridiidae WD - Aus - (Austin 1985)

*imbecilla* *Achaeearanea tepidariorum* Theridiidae WD - Aus - (Austin 1985)

*imbecilla* *Latrodectus hasselti* Theridiidae WD - Aus - (Austin 1985)

*imbecilla* *Theridion rufipes* Theridiidae WD - Aus - (Austin 1985)

<i>imbecilla</i>	Various, do not mention spp.	Theridiidae	WD	20 observations of adults emerging	Aus	F	(Downes 1985)
sp.	Clubiona sp.	Clubionidae	PD	-	Aus	-	(Austin 1985)
sp.	Servaea sp.	Salticidae	PD	-	Aus	-	(Austin 1985)
sp.	Isopoda sp.	Sparassidae	PD	-	Aus	-	(Austin 1985)
<i>Campion</i>							
<i>australasiae</i>	<i>Lycosa</i> sp.	Lycosidae	GD	Penetrated egg-sac	Aus	L	(Mckeown & Mincham 1948)
<i>australasiae</i>	<i>Lycosa</i> sp.	Lycosidae	GD	Ignored live spider female	Aus	L	(Mckeown & Mincham 1948)
<i>australasiae</i>	<i>Lycosa pertnfiata</i>	Lycosidae	GD	Penetrated egg-sac	Aus	L	(Mckeown & Mincham 1948)
<i>australasiae</i>	<i>Isopeda</i> sp.	Sparassidae	PD	Penetrated egg-sac	Aus	L	(Mckeown & Mincham 1948)
<i>australasiae</i>	-	-	-	Penetrated egg-sac	Aus	L	(Mckeown & Mincham 1948)
sp.	<i>Lycosa perinflata</i>	Lycosidae	GD	-	Aus	-	(Austin 1985)
<i>Climaciella</i>							
<i>brunnea</i>	<i>Agelenopsis</i> sp.	Agelenidae	WD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)

<i>brunnea</i>	<i>Lycosa punctulata</i>	Lycosidae	GD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)
<i>brunnea</i>	<i>Lycosa rabida</i>	Lycosidae	GD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)
<i>brunnea</i>	<i>Lycosa watsoni</i>	Lycosidae	GD	Emerged from egg sac	Nea	F	(Lasalle 1986)
<i>brunnea</i>	<i>Rabidosa punctulata</i>	Lycosidae	GD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>brunnea</i>	<i>Schizocosa ocreata</i>	Lycosidae	GD	Boarded spider	Nea	L	(Scheffer 1992) (Redborg & Redborg 2000)
<i>brunnea</i>	<i>Schizocosa rovneri</i>	Lycosidae	GD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>brunnea</i>	<i>Schizocosa saltatrix</i>	Lycosidae	GD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)
<i>brunnea</i>	Schizocosa sp.	Lycosidae	GD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)
<i>brunnea</i>	<i>Tarantula</i> sp.	Lycosidae	GD	Pupa found in egg sac carried by female spider and bred through	Nea	F	(George & George 1975)
<i>brunnea</i>	<i>Metacyrba undata</i>	Salticidae	PD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)
<i>brunnea</i>	<i>Phidippus audax</i>	Salticidae	PD	first instar boarded spider	Nea	L	(Redborg & Macleod 1983a)
<i>brunnea</i> " <i>occidentalis</i> "	-	-	-	Mounted by larvae in confined space		L	(Batra 1972)
<i>Dicromantispa</i>							

<i>interrupta</i>	<i>Gnaphosa muscorum</i>	Gnaphosidae	GD	Emerged from egg sac	Nea	F	(Kaston 1940)
<i>interrupta</i>	<i>Gladicosa gulosa</i>	Lycosidae	GD	first instar boarded spider	Nea	F	(Guarisco 1998)
<i>interrupta</i>	<i>Gladicosa bellamyi</i>	Lycosidae	GD	Emerged from egg sac	Nea	F	(Guarisco 2006)
<i>interrupta</i>	-	Lycosidae	GD	Mated in lab, given egg sac & live spider, spider mounted and mantispids bred through	Nea	L	(Viets 1941)
<i>interrupta</i>	<i>Philaeus militaris</i>	Salticidae	PD	Present in egg-sac	Nea	F	(Smith 1934)
<i>cf. interrupta</i>	<i>Peucetia viridans</i>	Oxyopidae	PD	Third instar found in egg sac carried by female	Nea	F	(Killebrew 1981)
<i>gracilis</i>	-	-		Larva present in egg-sac	Neo	F	(Carico <i>et al.</i> 1985)
<i>sayi</i>	<i>Aysha decepta</i>	Anyphaenidae	GD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Argiope aurantia</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Cyclosa bifurca</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Mecynogea lemniscata</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Metazygia wittfeldae</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Metazygia wittfeldae</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice 1986)

<i>sayi</i>	<i>Metazygia zilloides</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice 1986)
<i>sayi</i>	<i>Metazygia zilloides</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Neoscona arabesca</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Neoscona hentzii</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Neoscona utahana</i>	Araneidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Dictyna calcarata</i>	Dictynidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Kukulcania hibernalis</i>	Filistatidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Drassodes saccatus</i>	Gnaphosidae	GD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Herpyllus cockerelli</i>	Gnaphosidae	GD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Sosippus texanus</i>	Lycosidae	GD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Mimetus epeiroides</i>	Mimetidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Mimetus notius</i>	Mimetidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Oecobius annulipes</i>	Oecobiidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)

<i>sayi</i>	<i>Oxyopes aureus</i>	Oxyopidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Apollophanes texanus</i>	Philodromidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Bagheera prosper</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Eris limbata</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Maevia poultoni</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Menemerus bivittatus</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Metacyrba undata</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Metacyrba undata</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Metacyrba</i> sp.	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Peckhamia picata</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Phidippus audax</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice 1986)
<i>sayi</i>	<i>Phidippus audax</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Phidippus</i> sp.	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)



<i>sayi</i>	<i>Phidippus texanus</i>	Salticidae	PD	-	Nea	F	(Hoffman & Brushwein 1992)
<i>sayi</i>	<i>Plexippus paykulli</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Synageles noxiosus</i>	Salticidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Scytodes</i> sp.	Scytodidae	GD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Scytodes</i> sp. undescrbed	Scytodidae	GD	first instar on spider	Nea	F	(Rice 1986)
<i>sayi</i>	<i>Scytodes</i> sp. undescrbed	Scytodidae	GD	One adult emerged from egg-sac of housed spider, presumably after boarding the spider, two others from egg-sacs	Nea	F	(Gilbert & Rayor 1983)
<i>sayi</i>	<i>Loxosceles devia</i>	Sicariidae	GD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Tetragnatha guatemalensis</i>	Tetragnathidae	WD	first instar on spider	Nea	F	(Rice 1986)
<i>sayi</i>	<i>Tetragnatha guatemalensis</i>	Tetragnathidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Argyrodes elevatus</i>	Theridiidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Argyrodes furcatus</i>	Theridiidae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Xysticus</i> sp.	Thomisidae	PD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Uloborus glomosus</i>	Uloboridae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)

<i>sayi</i>	<i>Uloborus segregatus</i>	Uloboridae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i>	<i>Uloborus</i> sp.	Uloboridae	WD	first instar on spider	Nea	F	(Rice & Peck 1991)
<i>sayi</i> (as <i>uhleri</i> )	<i>Agelenopsis naevia</i>	Agelenidae	WD	Emerged from egg sac	Nea	F	(Kaston 1938)
<i>sayi</i> (as <i>uhleri</i> )	<i>Agelena naevia</i>	Agelenidae	WD	Emerged from egg sac	Nea	F	(Kaston 1938)
<i>sayi</i> (as <i>uhleri</i> )	<i>Agelenopsis pennsylvanica</i>	Agelenidae	WD	Present in egg-sacs	Nea	F	(Redborg 1983)
<i>sayi</i> (as <i>uhleri</i> )	<i>Agelenopsis pennsylvanica</i>	Agelenidae	WD	Penetrated egg-sac with facilitation, then boarded spiderlings inside the sac	Nea	F/L	(Redborg 1985)
<i>sayi</i> (as <i>uhleri</i> )	<i>Hibana gracilis</i>	Anyphaenidae	PD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>sayi</i> (as <i>uhleri</i> )	<i>Argiope aurantia</i>	Araneidae	WD	Penetrated egg-sac with facilitation, then boarded spiderlings inside the sac	Nea	F/L	(Redborg 1985)
<i>sayi</i> (as <i>uhleri</i> )	<i>Cheiracanthium mildei</i>	Eutichuridae	PD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>sayi</i> (as <i>uhleri</i> )	<i>Lycosa rabida</i>	Lycosidae	GD	Boarded spider	Nea	L	(Redborg 1982a)
<i>sayi</i> (as <i>uhleri</i> )	<i>Rabidosa punctulata</i>	Lycosidae	GD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>sayi</i> (as <i>uhleri</i> )	<i>Philodromus vulgaris</i>	Philodromidae	PD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>sayi</i> (as <i>uhleri</i> )	<i>Philodromus vulgaris</i>	Philodromidae	PD	1st instar larval transferal during cannibalism & mating	Nea	L	(O'Brien & Redborg 1997)

<i>sayi</i> (as <i>uhleri</i> )	<i>Metacyrba undata</i>	Salticidae	PD	Boarded spider	Nea	L	(Redborg & Redborg 2000)
<i>sayi</i> (as <i>uhleri</i> )	<i>Salticus scenicus</i>	Salticidae	PD	Boarded spider	Nea	L	(Redborg & Macleod 1983b)
<i>sayi</i> (as <i>uhleri</i> )	<i>Achaearana tepidariorum</i>	Theridiidae	WD	Penetrated egg-sac	Nea	L	(Redborg & Macleod 1983b)
<i>Euclimacia</i>							
sp. undescribed	-	-	-	Reared from spider nest from Malasia	Ort	F	(Ohl 2011a)
<i>Eumantispa</i>							
<i>harmandi</i>	<i>Coelotes exitialis</i>	Agelenidae	WD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>harmandi</i>	<i>Coelotes yaginumai</i>	Agelenidae	WD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>harmandi</i>	<i>Coelotes personatus</i>	Agelenidae	WD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>harmandi</i>	<i>Coelotes antri</i>	Agelenidae	WD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>harmandi</i>	<i>Cybaeus nipponicus</i>	Agelenidae	WD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>harmandi</i>	<i>Heteropoda forcipata</i>	Sparassidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>harmandi</i>	-	-	-	Photos of first intars on spiders	Pal	-	(Hirata 1999)

<i>harmandi</i>	-	-	-	larvae in egg-sacs	Pal	F	(Hirata & Ishii 1995)
<i>Leptomantispa</i>							
<i>pulchella</i>	<i>Anyphaena maculata</i>	Anyphaenidae	GD	-	Nea	F	(Brushwein et al. 1992)
<i>Mantispa</i>							
<i>styriaca</i>	<i>Drassodes hypocrita</i>	Gnaphosidae	GD	-	-	-	(Poujade 1898)
<i>styriaca</i>	<i>Drassid</i> sp.	Gnaphosidae	GD	-	-	-	(Main 1931)
<i>styriaca</i>	<i>Lycosa</i> sp.	Lycosidae	GD	Emerged from egg sac	Pal	F	(Brauer 1852)
<i>styriaca</i>	<i>Lycosa inquilina</i>	Lycosidae	GD	-	-	-	(Brauer 1869a)
<i>styriaca</i>	<i>Lycosa</i> sp.	Lycosidae	GD	-	-	-	(Rogenhofer 1862)
sp. prob. <i>styriaca</i>	<i>Thomisus</i> sp.	-	-	-	Pal	-	(Brauer 1869a)
-	<i>Metepeira</i> sp.	Araneidae	WD	-	Neo	-	(Birabén 1960)
<i>Mantispilla</i>							

<i>japonica</i>	<i>Clubiona jucunda</i>	Clubionidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Clubiona yigil</i>	Clubionidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Clubiona</i> sp. 1	Clubionidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Clubiona</i> sp. 2	Clubionidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Clubiona</i> sp. 3	Clubionidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Philodromus auricomus</i>	Philodromidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Yaginumanis sexdentatus</i>	Salticidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Okytate striatipes</i>	Thomisidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	<i>Lysiteles eoronatus</i>	Thomisidae	PD	first instar boarded spider	Pal	F	(Hirata & Ishii 1995)
<i>japonica</i>	-	-	-	Photos of first instars on spiders	Pal	-	(Hirata 1999)
<i>Paramantispa</i>							
<i>decorata</i>	<i>Lycosa poliostrata</i>	Lycosidae	GD	Emerged from egg-sac, ± 5% spiderlings survived	Neo	-	(Capocasale 1971)
<i>Pseudoclimaciella</i>							

<i>erichsoni</i>	<i>Palystes</i> sp.	Sparassidae	PD	Emerged from egg-sac	Afro	F	n.r.
<i>Zeugomantispa</i>							
<i>minuta</i>	<i>Metepeira labyrinthea</i>	Araneidae	WD	Emerged from egg sac	Neo	F	(Birabén 1960)
<i>minuta</i>	<i>Parasteatoda tepidariorum</i>	Theridiidae	WD	Emerged from egg sac	Neo	F	(Triana et al. 2012)
<i>minuta</i>	<i>Latrodectus geometricus</i>	Theridiidae	WD	Emerged from egg sac	Neo	F	(Triana et al. 2012)
<i>virescens</i>	<i>Agelenopsis</i> sp.	Agelenidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Agelenopsis</i> cf. <i>pennsylvanica</i>	Agelenidae	WD	Cocoons found in host egg-sacs		F	(Parfin 1952)
<i>virescens</i>	<i>Teudis mordax</i>	Anyphaenidae	GD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Araneus pegnia</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Araniella displicata</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Argiope aurantia</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Argiope aurantia</i>	Araneidae	WD	Present in egg-sac	-	-	(Tolbert 1976)
<i>virescens</i>	<i>Argiope trifasciata</i>	Araneidae	WD	Present in egg-sac	-	-	(Tolbert 1976)

<i>virescens</i>	<i>cf.Neoscona</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Cyclosa cf.turbinata</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Cyclosa turbinata</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Mecynogea lemniscata</i>	Araneidae	WD	Emerged from egg sac	Nea	-	(Hieber 1984)
<i>virescens</i>	<i>Metepeiral abyrinthea</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Neoscona arabesca</i>	Araneidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Cheiracanthium clusum</i>	Clubionidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Clubiona</i> sp.	Clubionidae	PD	-	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	-	Clubionidae or Gnaphosidae	PD/GD				(Stein 1955)
<i>virescens</i>	<i>Castianeira</i> sp.	Corinnidae	GD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Cupiennius salei</i>	Ctenidae	GD	-	-		(Milliron 1940)
<i>virescens</i>	<i>Gladicosa pulchra</i>	Lycosidae	GD				(Roble 1986)
<i>virescens</i>	<i>Lycosa pulchra</i>	Lycosidae	GD	Pupa found in spider egg-sac	Nea	F	(Roble 1986)

<i>virescens</i>	<i>Varacosa avara</i>	Lycosidae	GD	-	Nea	F	(Hoffman & Brushwein 1992)
<i>virescens</i>	unidentified genus	Lycosidae	GD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i> (as <i>minuta</i> )	<i>Parawixia bistrriata</i>	Araneidae	WD	Emerged from egg sac	Neo	F	(Berti-filho et al. 2002)
<i>virescens</i>	<i>Peucetia viridans</i>	Oxyopidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Peucetia viridans</i>	Oxyopidae	PD	larvae in egg-sacs, several emerged from several egg-sacs	Nea	L	(Fink 1987)
<i>virescens</i>	<i>Philodromus imbecillus</i>	Philodromidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Pholcus phalangioides</i>	Pholcidae	WD	larvae reared to adulthood by feeding	Nea	L	(Davidson 1958)
<i>virescens</i>	<i>Pisaurina mira</i>	Pisauridae	PD/WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Habronattus coecatus</i>	Salticidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Phidippus clarus</i>	Salticidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Phidippus mystaceus</i>	Salticidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Plexippus paykulli</i>	Salticidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Psecas chapoda</i>	Salticidae	PD	Present in egg-sacs	Neo	F	(Vieira & Romero 2008)



<i>virescens</i>	<i>Tetragnatha</i> sp.	Tetragnathidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Achaearaneat epidariorum</i>	Theridiidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Achaearaneat epidariorum</i>	Theridiidae	WD	Present in egg-sac	Neo	-	(Valerio 1971)
<i>virescens</i>	<i>Achaearanea rupicola</i>	Theridiidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Latrodectus mactans</i>	Theridiidae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Tidarren sisypoides</i>	Theridiidae	WD	Emerged from egg sac	Nea	F	(Guarisco 2014)
<i>virescens</i>	-	Theridiidae	WD	larvae reared to adulthood by feeding	Nea	L	(Davidson 1958)
<i>virescens</i>	<i>Misumenoidesformosipes</i>	Thomisidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Tmarus angulatus</i>	Thomisidae	PD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
<i>virescens</i>	<i>Uloborus glomosus</i>	Uloboridae	WD	larvae in egg-sacs	Nea	F	(Brushwein et al. 1992)
Unknown							
-	-	Clubionidea:-	PD	first instar boarded spider	Pal	F	(Ohl 2011a)
-	<i>Arctosa littoralis</i>	Lycosidae	GD	first instar on spider	Nea	F	(Hungerford 1939)

-	<i>Miturga</i> sp.	Clubionidae	PD	-	Aus	-	(Austin 1985)
-	<i>Lampona cylindrata</i>	Gnaphosidae	GD	-	Aus	-	(Austin 1985)

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SG – Spider Guild: WD-Web dweller PD-Plant dweller GD-Ground dweller

**Table S2.** Associations between Mantispidae and Hymenoptera from the literature.

Mantispidae species	Associated species	Fam	Association type	Region	Condition	Reference
<i>Symphrasinae</i>						
<i>Anchieta</i>						
<i>fumosella</i>	<i>Trypoxylon (Tripargylum) aestivale</i>	Crabronidae	3 pupae found inside host nest, one emerged. Also mentions vespids mimicry with respect to colour & behaviour	Neo	F	(Buys 2008)
<i>fasciatella</i>	Many species	Braconinae	Similar colouration of adults	Neo	F?	(Ardila-Camacho & García 2015)
sp.	<i>Meliponini</i> sp.	Apidae	Mentiones resemblance nb. Stingless bees	Neo	D	(Penny & Da Costa 1983)
spp.	<i>Meliponini</i> sp.	Apidae	Similar colouration of adults	Neo	F?	(Ardila-Camacho & García 2015)
spp.	Vespidae sp. (not specified)	Vespidae	Similar colouration of adults	Neo	F?	(Ardila-Camacho & García 2015)
<i>cf. Hemerobius</i>						
<i>nervosus</i>	<i>Polybia scutellaris</i>	Vespidae	Found the remains in the nest	Neo	F/D	(White 1841)
<i>Plega</i>						
<i>beardi</i>	<i>Montezumia pelagica sepulchralis</i>	Vespidae	emerged from <i>Montezumia pelagica</i> sepulchralis nest	Neo	F	(Auko et al. 2014)

<i>cf. beardi</i>	<i>Trypoxylon albitarse</i>	Crabronidae Sphecidae	specimen reared from nests, deposited in BMNH	Neo	F	(Penny 1982a)
<i>dactylota</i>	<i>Pison</i> sp. larvae from cells	Sphecidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>dactylota</i>	<i>Trypoxylon</i> sp. larvae from cells	Sphecidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>fumosa</i>	<i>Polistes</i> spp.	Vespidae	Found in proximity of 3 <i>Polistes</i> spp	Neo	F	(Lindsey & Macswain 1955)
<i>hagenella</i>	<i>Trypoxylon manni</i> .	Crabronidae	Reared from nest of <i>Trypoxylon manni</i> Crabronidae secondarily occupied by <i>Hylaeus</i> sp. <i>Plega hagenella</i> fed on pupa of <i>Hylaeus</i> sp.	Neo	F	(Hook et al. 2010)
<i>hagenella</i>	<i>Melipona subnitida</i>	Apidae	Mass infest host nests	Neo	F/L	(Maia-Silva et al. 2013)
<i>hagenella</i>	<i>Hylaeus (Hylaeopsis)</i> sp.	Colletidae	in <i>Trypoxylon manni</i> Crabronidae nest	Neo	F	(Hook et al. 2010)
<i>melitomae</i>	<i>Melitoma segmentaria</i>	Apidae	18 reared from cells collected in field	Neo	F	(Lindsey & Macswain 1955)
<i>cf. melitomae</i>	<i>Trypoxylon</i> sp.	Crabronidae	Reared from earthen cells of host	Neo	F	(Parker & Stange 1965)
<i>yucatanae</i>	<i>Megachile exaltata</i>	Megachilidae	Reared from cells found in a cave, adult mantispids was found close by	Neo	F	(Parker & Stange 1965)
<i>cf. beardi</i>	<i>Zethus (Zethoides) miniatus</i>	Crabronidae Sphecidae	specimen reared from nests, deposited in BMNH	Neo	F	(Penny 1982a)
<i>Trichoscelia</i>						

<i>santareni</i>	<i>Polybia diguetana</i>	Vespidae	Adults found in the vicinity of the host nest, enter nest after mating	Neo	F	(Dejean & Canard 1990)
-	<i>Polybia occidentalis</i>	Vespidae	-	Neo	-	(Dejean & Canard 1990)
-	<i>Polybia rejecta</i>	Vespidae	-	Neo	-	(Dejean & Canard 1990)
-	<i>Polybia scrobalis surinama</i>	Vespidae	Adults found in the vicinity of the host nest, enter nest after mating	Neo	f	(Dejean et al. 1998)
<i>signata</i>	<i>Xylomyges curialis</i>	Noctuidae	Cocoons found within pupal skin	Nea	F	(Woglum 1935)
<i>varia</i>	<i>Polybia occidentalis</i> var. <i>scutellaris</i>	Vespidae	Found in abandoned nest of host (>100 <i>T. varia</i> in nest)	Neo	F/D	(Smith 1863)
<i>varia</i>	<i>Polybia occidentalis</i> var. <i>scutellaris</i>	Vespidae	Cocoons found in host nest	-	F/D	(Hagen 1877)
<i>varia</i>	<i>Polybia</i> sp.	Vespidae	specimen reared from nest, deposited in Vienna museum	-	F	(Penny 1982a)
<i>varia</i>	<i>Polybia (Myaptera) scutellaris</i>	Vespidae	specimen reared from nests, deposited in BMNH	-	F	(Penny 1982a)
<i>varia</i>	<i>Polybia ruficeps</i>	Vespidae	specimen reared from nests, deposited in BMNH	-	F	(Penny 1982a)
<i>varia</i>	<i>Polybia</i> sp.	Vespidae	Parasitic association	Neo	-	(Berg 1899)

Drepanicinae

No records

Calomantispinae

*Nolima*

<i>pinal</i>	<i>Acanthomyops</i> sp. larvae from nest	Formicidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>pinal</i>	<i>Sceliphron</i> larva from cell	Sphecidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)

Mantispinae

*Climaciella*

<i>brunnea "canadensis"</i>	<i>Polistes cadensis</i>	Vespidae	Similar colouration of adults	Nea	F	(Opler 1981)
<i>brunnea "carnifer"</i>	<i>Polistes camifex</i>	Vespidae	Similar colouration of adults	Nea	F	(Opler 1981)
<i>brunnea "erythrocephalus"</i>	<i>Polistes erythrocephalus</i>	Vespidae	Similar colouration of adults	Nea	F	(Opler 1981)
<i>brunnea "instabilis"</i>	<i>Polistes instabilis</i>	Vespidae	Similar colouration of adults	Nea	F	(Opler 1981)
<i>brunnea "instabilis"</i>	<i>Polistes instabilis</i>	Vespidae	Apparent mimicking behaviour on <i>Asclepias syriaca</i>		F	(Boyden 1983)
<i>brunnea "occidentalis"</i>	<i>Bombus griseocollis</i>	Apidae	Avoided by larvae in confined space	Nea	L	(Batra 1972)
<i>brunnea "occidentalis"</i>	<i>Bombus morrisoni</i>	Apidae	Mounted by larvae in confined space	Nea	L	(Batra 1972)

<i>brunnea "occidentalis"</i>	<i>Halictus ligatus</i>	Halictidae	Avoided by larvae in confined space	Nea	L	(Batra 1972)
<i>brunnea "occidentalis"</i>	<i>Osmia</i> sp.	Megachillidae	Avoided by larvae in confined space	Nea	L	(Batra 1972)
<i>brunnea "occidentalis"</i>	<i>Cerceris</i> sp.	Sphecidae	Avoided by larvae in confined space	Nea	L	(Batra 1972)
<i>brunnea "occidentalis"</i>	<i>Polistes fuscatus utahensis</i>	Vespidae	Observed amongst wasp model	Nea	F	(Batra 1972)
<i>brunnea "occidentalis"</i>	<i>Polistes fuscatus utahensis</i>	Vespidae	Mounted by larvae in confined space	Nea	L	(Batra 1972)
<i>brunnea "occidentalis"</i>	-	-	Notes on number of eggs laid	Nea	-	(Hoffmann 1936)
<i>brunnea "occidentalis"</i>	Several unidentified spiders	-	Avoided by larvae in confined space	Nea	L	(Batra 1972)
<i>brunnea "synoeca"</i>	<i>Synoeca septentrionalis</i>	Vespidae	Similar colouration of adults	Nea	F	(Opler 1981)
<i>brunnea "-"</i>	<i>Polistes fuscatus</i> female	Vespidae	Similar colouration of adults	Nea	D	(Waldbauer et al. 1977)
<i>brunnea "-"</i>	<i>Cerceris macrostricta</i> male	Sphecidae	Similar colouration of adults	Nea	D	(Waldbauer et al. 1977)
<i>brunnea "-"</i>	-	Vespidae	Similar colouration of adults	Neo	F	(Waldbauer et al. 1977)
<i>obtusa</i>	<i>Polybia</i> sp.	Vespidae	Similar colouration of adults	Neo	F?	(Ardila-Camacho, et al. 2018)
<i>obtusa</i>	<i>Synoeca</i> sp.	Vespidae	Similar colouration of adults	Neo	F?	(Ardila-Camacho, et al. 2018)

<i>semihyalina</i>	<i>Polybia ignobilis</i>	Vespidae	Similar colouration of adults	Neo	F?	(Ardila-Camacho, & García 2015)
<i>semihyalina</i>	<i>Polybia simillima</i>	Vespidae	Similar colouration of adults	Neo	F?	(Ardila-Camacho, & García 2015)
<i>Euclimacia</i>						
<i>horstaspoecki</i>	<i>Polistes stigma</i>	Vespidae	In the vicinity of aculeate wasps, none collected, suggested the species group <i>P. stigma</i>	Ort	F	James M. Carpenter, pers. comm.
<i>nodosa</i>	<i>Vespa (Vespa) tropica tropica</i>	Vespidae	Similar colouration of adults	Ort	D	(Bhattacharjee et al. 2010)
<i>sp. undescribed</i>	<i>Polistes sagittarius</i>	Vespidae	Similar colouration of adults	Ort	D	(Ohl 2011b)
<i>sp. undescribed</i>	<i>Vespa tropica</i>	Vespidae	Similar colouration of adults	Ort	D	(Beck 2005)
<i>Pseudoclimaciella</i>						
various species	<i>Polistes</i> spp.	Vespidae	Similar colouration of adults	Afro	D	n.r.
<i>Tuberontha</i>						
<i>sp. undescribed</i>	<i>Provespa</i> sp.	Vespidae	Similar colouration of adults	Ort	D	Beck, pers. comm.

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Condition: Field/Lab/Dried



**Table S3.** Associations between Mantispidae (+Berothidae and Rhachiberothidae) and taxa other than spiders or Hymenoptera

Neuropteran	Associated species	Family	Association type	Region	Field/Lab	Reference
Berothidae						
Berothinae						
<i>Podallea</i>						
<i>vasseana</i>	<i>Cubitermes</i>	Termitidae	Berothidae larvae was fed workers	Afro	L	(Moller 2003)
	-	Termite workers	Fed on workers, progressed to second instar but not third	Afro	L	(Minter 1990)
Rhachiberothidae						
<i>Microberotha</i>						
<i>vesicaria</i>	-	Lepidoptera larvae	first instar fed, did not progress to second instar	Afro	L	(Minter 1990)
<i>vesicaria</i>	-	Termite workers	first instar fed, did not progress to second instar	Afro	L	(Minter 1990)
Symphrasinae						
Symphrasinae						

<i>Plega</i>	<i>Helianthus</i> sp.	Curculionidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>banksi</i>	-	Asilidae	found lying next to the pupal skin of the beetle, on the cast larval skin of the beetle	Nea	F	(Werner & Butler 1965)
<i>banksi</i>	<i>Cyclocephala</i> cf. <i>pasadenae</i>	Scarabaeidae	found lying next to the pupal skin of the beetle and a hollowed out asilid pupal skin on the cast larval skin of the beetle	Nea	F	(Werner & Butler 1965)
<i>dactylota</i>	<i>Ephestia kuehniella</i> pupae	Pyralidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>signata</i>	<i>Ephestia kuehniella</i> pupae	Pyralidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
Calomantispinae						
<i>Nolima</i>						
<i>pinal</i>	<i>Phormia regina</i> pupae in opened puparium	Calliphoridae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>pinal</i>	<i>Helianthus</i> sp.	Curculionidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>pinal</i>	<i>Lynaephiidae</i> adults paralysed, from <i>Pison cells</i>	Lynaephiidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>pinal</i>	<i>Ephestia kuehniella</i> pupae	Pyralidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)

<i>pinal</i>	<i>Tribolium confusum</i> larvae	Tenebrionidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
<i>pinal</i>	<i>Tribolium confusum</i> pupae	Tenebrionidae	larvae reared to adulthood by feeding	Nea	L	(Macleod & Redborg 1982)
Mantispinae						
<i>Climaciella</i>						
<i>brunnea "occidentalis"</i>	Grasshoppers	-	Avoided by larvae in confined space	Nea	L	(Batra 1972)
Dicromantispa						
-	-	Sarcophagidae	Found in abdomen of mantispid, not known if mantispid was alive/dead when fly initiated feeding	Nea	F	(Parfin 1952)
<i>Leptomantispa</i>						
<i>pulchella</i>	<i>Oecetis inconspicua</i>	Leptoceridae	First instar boarded a caddisfly	Nea	F	(Hoffman & Hamilton 1988b)

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