

The Spiders of the Northern Mariana Islands, Micronesia

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Abstract A preliminary list of spiders is presented on the basis of about 300 specimens from the northern Mariana Islands, Micronesia, collected during the Biological Expedition conducted by the Natural History Museum and Institute, Chiba, in 1992. The list comprises 12 families including seven identified species. All of these species are recorded for the first time from the northern Marianas.

Key words: Spiders, fauna, northern Mariana Islands.

The northern Mariana Islands of Micronesia are located in the western Pacific between 16°22'N and 20°32'N. The Natural History Museum and Institute, Chiba, carried out a biological expedition to these islands in May to June 1992 in cooperation with the Department of Natural Resources (Commonwealth of the Northern Mariana Islands) and the University of Guam Marine Laboratory. We received and identified a series of spider specimens collected from 9 islands during the expedition. As there have been no studies on the spider fauna of this region, we report a preliminary list of spiders in this paper. In addition, we discuss the spider fauna of the northern Marianas in relation to that of the Ogasawara Islands.

Sampling Sites and Methods

The dates of specimen collection on each island during the 1992 expedition were as follows; Anatahan: 10–12 May; Sarigan: 14–16 May; Guguan: 17, 18 May; Alamagan: 18, 19 May, 9 June; Pagan: 24–27 May; Agrihan: 28–31 May; Asuncion: 1, 7 June; Maug: (3 small islets): 2–5 June; Uracas: 6 June. Other detailed information on the sampling sites

has been given by Asakura *et al.* (1994). Most specimens were collected by directly picking up in the field by the expedition members, Taiji Kurozumi and Sinya Miyano. Others were extracted using Tullgren funnels and then collected by direct searching. The specimens were preserved in 70% alcohol. A complete set of specimens is deposited at the Natural History Museum and Institute, Chiba. The taxa in the list are arranged systematically for each island from south to north.

A List of Species Collected

Anatahan Island

Oonopidae

Opepaea sp. 1juv

Pholcidae

Pholcidae gen. et sp. 4juv.

Theridiidae

Achaearanea sp. 2 ♀

Argyrodes bonadea (Karsch, 1881) 2 ♀ 1 ♂

Argyrodes sp. 1 ♀ 1juv.

Coleosoma floridanum Banks, 1900 5 ♀

Theridiidae gen. et sp. 9juv.

Linyphiidae

Linyphiidae gen. et sp. 2 ♀

Araneidae

- Argiope appensa* (Walckenaer, 1841) 3 ♀
Argiope sp. 1 juv.
Cyrtophora moluccensis (Doleschall, 1857)
 2 ♀ 1 ♂
Cyrtophora sp. 4 juv.
Gasteracantha sp. 1 ♀

Tetragnathidae

- Leucauge* sp. 1 ♂ 2 ♀ 3 juv.

Thomisidae

- Thomisidae gen. et sp. 1 juv.

Lycosidae

- Pardosa* sp. 3 ♀

Clubionidae

- Clubiona* sp. 1 ♂

Heteropodidae

- Heteropodidae gen. et sp. 3 juv.

Salticidae

- Salticidae gen. et sp. 1 ♀ 1 ♂ 2 juv.

Undet. 1 ♀ 21 juv.

Sarigan Island

Oonopidae

- Gamasomorpha* sp. 1 juv.

Theridiidae

- Argyroides bonadea* (Karsch, 1881) 1 ♂
Argyroides sp. 1 juv.
Coleosoma floridanum Banks, 1900 1 ♀
 Theridiidae gen. et sp. 1 juv.

Araneidae

- Argiope appensa* (Walckenaer, 1841) 1 ♀
Gasteracantha sp. 1 ♀ 1 juv.
Neoscona sp. 1 ♂ 1 juv.

Tetragnathidae

- Leucauge* sp. 1 juv.

Lycosidae

- Pardosa* sp. 1 ♀ 3 ♂

Clubionidae

- Clubionidae gen. et sp. 3 juv.

Thomisidae

- Thomisidae gen. et sp. 5 juv.

Salticidae

- Bavia* sp. 1 ♂
 Salticidae gen. et sp. 2 ♀

Undet. 1 juv.

Guguan Island

Oonopidae

- Gamasomorpha* sp. 1 juv.

Scytodidae

- Scytodes* sp. 2 juv.

Phocidae

Pholcidae gen. et sp. 1 juv.

Theridiidae

- Argyroides* sp. 1 juv.
Coleosoma floridanum Banks, 1900 4 ♀
Chrysso pulcherrima (Mello-Leitao, 1917)
 1 ♀
Theridion sp. 1 juv.
 Theridiidae gen. et sp. 8 juv.

Araneidae

- Neoscona theisi* (Walckenaer, 1841) 1 ♀
Neoscona sp. 4 juv.

Tetragnathidae

- Leucauge* sp. 1 ♀ 1 juv.

Salticidae

- Neon* sp. 1 ♀
 Salticidae gen. et sp. 3 ♀

Undet. 26 juv.

Alamagan Island

Linyphiidae

- Linyphiidae gen. et sp. 1 ♂

Theridiidae

- Achaeearanea* sp. 2 ♀
Argyroides bonadea (Karsch, 1881) 1 ♀
Coleosoma floridanum Banks, 1900 1 ♂
 Theridiidae gen. et sp. 2 juv.

Araneidae

- Argiope* sp. 1 juv.
Cyrtophora moluccensis (Doleschall, 1857)
 1 ♀
Cyrtophora sp. 2 juv.
Neoscona theisi (Walckenaer, 1841) 1 ♀ 2 ♂
Neoscona sp. 2 juv.

Tetragnathidae

- Leucauge* sp. 1 ♂ 2 ♀ 1 juv.

Clubionidae

- Clubionidae gen. et sp. 1 ♀

Salticidae

- Neon* sp. 1 juv.

Undet. 1 juv.

Pagan Island

Oonopidae

- Gamasomorpha* sp. 1 juv.

Scytodidae

- Scytodes* sp. 1 juv.

Pholcidae

- Pholcidae gen. et sp. 1 juv.

Theridiidae

- Argyroides* sp. 1 ♀
Coleosoma floridanum Banks, 1900 1 ♀

Araneidae

Argiope appensa (Walckenaer, 1841) 2 ♀

Argiope sp. 2juv.

Neoscona sp. 1juv.

Lycosidae

Pardosa sp. 1 ♀ 1juv.

Clubionidae

Clubionidae gen. et sp. 4juv.

Salticidae

Plexippus sp. 1 ♀

Undet. 2juv.

Agrihan Island

Scytodidae

Scytodes sp. 3juv.

Pholcidae

Pholcidae gen. et sp. 1juv.

Linyphiidae

Linyphiidae gen. et sp. 2 ♂ 1 ♀

Theridiidae

Coleosoma floridanum Banks, 1900 2 ♀

Stemmopes sp. 1 ♀

Theridiidae gen. et sp. 1 ♀ 7juv.

Araneidae

Argiope appensa (Walckenaer, 1841) 1 ♀

Argiope sp. 2juv.

Neoscona theisi (Walckenaer, 1841) 1 ♀

Tetragnathidae

Leucauge sp. 2 ♀ 1juv.

Lycosidae

Pardosa sp. 1 ♂ 1 ♀ 15juv.

Salticidae

Athamas sp. 1 ♂

Bavia sp. 2juv.

Undet. 1 ♀ 2juv.

Asuncion Island

Amaurobiidae

Titanoeca laminata (Thorell, 1978) 1 ♀

Oonopidae

Gamasomorpha sp. 1 ♀ 6juv.

Scytodidae

Scytodes sp. 1 ♀ 1juv.

Theridiidae

Theridion sp. 1juv.

Theridiidae gen. et sp. 1juv.

Linyphiidae

Linyphiidae gen. et sp. 1 ♀ 1juv.

Araneidae

Argiope sp. 1juv.

Neoscona theisi (Walckenaer, 1841) 1 ♀

Neoscona sp. 3juv.

Tetragnathidae

Laucauge sp. 1 ♂ 1juv.

Lycosidae

Pardosa sp. 2juv.

Clubionidae

Clubionidae gen. et sp. 1 ♀

Maug Islands

Oonopidae

Gamasomorpha sp. 1 ♀ 8juv.

Scytodidae

Scytodes sp. 1 ♀

Araneidae

Argiope sp. 1juv.

Neoscona sp. 9juv.

Tetragnathidae

Leucauge sp. 1 ♀ 1juv.

Tetragnatha sp. 1juv.

Salticidae

Neon sp. 2 ♂

Plexippus sp. 1 ♀

Undet. 4juv.

Uracus Island

Scytodidae

Scytodes sp. 3juv.

Pholcidae

Pholcidae gen. et sp. 1 ♀

Araneidae

Neoscona theisi (Walckenaer, 1841) 2 ♀ 1 ♂

Neoscona sp. 6juv.

Lycosidae

Pardosa sp. 1juv.

Saiticidae

Plexippus sp. 1 ♂

Salticidae gen. et sp. 1juv.

Undet. 1juv.

Discussion

During the expedition to the northern Marianas, 12 families, 27 genera and 32 species of spiders were collected. However, we were able to identify only 7 species, because most of the specimens were juveniles.

The spiders of the Ogasawara Islands, on the other hand, have been investigated by Shinkai (1969, 1977) and Yaginuma (1970a, b), and Yaginuma (1979) published a species list of the Ogasawaras based on their studies and recorded 18 families, 33 genera and 41 species of spiders. He stated that only one species, *Cladothela boninensis*, was indigenous to the Ogasawara Islands and that most

of the other species are distributed widely in tropical areas. The seven identified species from the northern Marianas are distributed not only in Japan but also in tropical areas.

At the present time, only 3 species of spiders are common between the northern Marianas and Ogasawaras (Appendix Table 1). This may be partly due to insufficient surveys in the former areas. The members of the present expedition collected web spiders by looking-taking or spiders living in leaf litter by hand-sorting and by using a Tullgren funnel. However, some species of spiders, such as *Ummidia fragaria*, cannot be collected by these methods because they live in other habitats such as silken tubes made on the trunks of large trees. Thus, further investigation is needed in order to clarify the characteristics of the spider fauna of the northern Marianas.

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北マリアナ諸島（ミクロネシア）のクモ類

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千葉県立中央博物館が1992年におこなったミクロネシア北マリアナ諸島の学術調査で、13科27属32種のクモ類が採集された。これまで同地におけるクモ類の研究はまったくない。ただし幼体が多いこともあって、7種のみが同定できた。これらは日本から熱帯諸地域にまで広く分布している普通種である。これまでの研究によると、小笠原諸島からは18科33属41種が報告されており、このうち3種だけが北マリアナ諸島との共通種であった。

Appendix

Table 1. Comparison of spider fauna between Northern Mariana Islands and Ogasawara Islands.

Northern Mariana Islands (this study)	Ogasawara Islands (Yaginuma 1979)
Ctenidae —	<i>Ummidia fragaria</i> (Doenitz)
Amaurobiidae <i>Titanoeca laminata</i> (Thorell)	—
Uloboridae —	<i>Uloborus gericulatus</i> (Olivier)
Oecobiidae —	<i>Oecobius annulipes</i> Lucas
Filistatidae —	<i>Filistata</i> sp.
Segestriidae —	<i>Ariadna insulicola</i> Yaginuma
Oonopidae — <i>Gamasomorpha</i> sp. <i>Opepaea</i> sp.	<i>Ischnothyreus narutomii</i> (Nakatsudi) — —
Scytodidae — — <i>Scytodes</i> sp.	<i>Scytodes nigrolineata</i> Simon <i>S. thoracica</i> (Latreille) <i>Scytodes</i> sp.
Pholcidae — — Pholcidae gen. et sp.	<i>Physocyclus globosus</i> (Taczanowski) <i>Smeringopus pallidus</i> (Blackwell) —
Theridiidae — <i>Achaearanea</i> sp. <i>Argyroides bonadea</i> (Karsch) <i>Argyroides</i> sp. <i>Cleosoma floridanum</i> Banks <i>Chrysso pulcherrima</i> (Mello-Leitao) <i>Stemmops</i> sp. —	<i>Achaearanea tepidariorum</i> (C. Koch) — <i>Argyroides bonadea</i> (Karsch) — — — — <i>Steatoda</i> sp.
Nesticidae —	<i>Nesticus</i> sp.
Linyphiidae — Linyphiidae gen. et sp.	<i>Ummeliata feminea</i> (Boes. et Str.) —
Araneidae <i>Gasteracantha</i> sp. <i>Argiope appensa</i> (Walckenaer) <i>Argiope</i> sp. <i>Neoscona theisi</i> (Walckenaer) <i>Neoscona</i> sp. <i>Cyrtophora moluccensis</i> (Doleschall) <i>Cyrtophora</i> sp. — — —	— — — <i>Neoscona theisi</i> (Walckenaer) — <i>Cyrtophora moluccensis</i> (Doleschall) — <i>Cyclosa insulama</i> (Costa) <i>C. maritima</i> Tanikawa <i>C. argenteoalba</i> Boes. et Str.

Table 1. (Continued)

Northern Mariana Islands (this study)	Ogasawara Islands (Yaginuma 1979)
Tetragnathidae	
—	<i>Leucauge venusta</i> (Walckenaer)
<i>Leucauge</i> sp.	—
—	<i>Tetragnatha maxillosa</i>
—	<i>T. laqueata</i> L. Koch
<i>Tetragnatha</i> sp.	—
—	<i>Dyschriognatha quadrimaculata</i> Boes. et Str.
Lycosidae	<i>Tetragnatha</i> sp.
—	<i>Lycosa coelestis</i> L. Koch
—	<i>L. matsushitai</i> Nakatsudi
—	<i>L. takahashii</i> Saito
—	<i>Lycosa</i> sp.
—	<i>Prodosa astrigera</i> L. Koch
<i>Pardosa</i> sp.	—
Clubionidae	
<i>Clubiona</i> sp.	<i>Clubiona</i> sp.
Clubionidae gen. et sp.	—
Heteropodidae	
—	<i>Heteropoda forcipata</i> (Karsch)
—	<i>H. venatoria</i> (Linne)
Heteropodidae gen. et sp.	—
Gnaphosidae	
—	<i>Gladothera boninensis</i> Kishida
Thomisidae	
—	<i>Oxyptila</i> sp.
—	<i>Philodromus subaureolus</i> Boes. et Str.
Thomisidae gen. et sp.	—
Salticidae	
—	<i>Evarcha albaria</i> (L. Koch)
—	<i>Hasarius adansoni</i> (Audouin)
—	<i>H. doenitzi</i> Karsch
—	<i>Jotus difficilis</i> Boes. et. Str.
—	<i>Menemerus bivittatus</i> (Dufour)
—	<i>Myrmarachne</i> sp.
—	<i>Chrysilla versicolor</i> (C. Koch)
<i>Neon</i> sp.	—
—	<i>Plexippus paykulli</i> (Audouin)
<i>Plexippus</i> sp.	—
<i>Bavia</i> sp.	—
<i>Athamas</i> sp.	—