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Fall 1992

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Recommended Citation

Blasczyk, M.J., J.P. Jass, and J.L. Kasper. 1992. Spiders of the UW-Milwaukee Field Station. Field Station Bulletin 25(2): 10-20.

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Spiders of the UW-Milwaukee Field Station

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Abstract. A checklist of 100 species from 16 familes is presented in this preliminary report of spiders at the UWM Field Station. Listed with the species are the months and habitats in which they were collected.

Introduction

There is unanimous consensus among taxonomic zoologists that insects are, in number of both species and individuals, the most abundant animals on earth. Spiders are major predators of insects and play a role in the regulation of insect populations. Unlike insects which include forms that obtain nourishment in a variety of ways--e.g. plant eaters, farmers (certain ants who cultivate fungal gardens, or herd aphids and consume aphid honey), ectoparasites, as well as many predatory forms, spiders are universally and solely predatory and live largely on insects. Given this critical role in trophic nutrient flow, it is surprising that relatively little is known about how spiders interact with each other and other invertebrates, or the spider species composition of a given habitat. There are two major related reasons for this paucity of information.

First, the spider order, the Araneae, is unevenly understood taxonomically. Some families, such as the traditional Orb Weavers, the Araneidae, are reasonably well known for North America. This is partly because they are associated with conspicuous webs and are relatively easily found as a result. Also, they are positioned in habitats where they are easily collected with sweep nets, which are the most efficient devices for obtaining a good-sized sample in a short period. Moreover, predatory wasps prey extensively on Orb Weavers and stock the compartments of their nests with paralyzed but living spiders, upon which the larval insects feed. Thus researchers studying wasp prey often collect unique data on some of the arboreal species of Orb Weavers that are particularly difficult to collect. At the other end of the spectrum, the so-called dwarf spiders, members of the Linyphiidae, occupy minute microhabitats, e.g. moss gametophytes, in all of the vegetation formations of the continent and are <u>very</u> poorly known. In fact there are no workable keys to the genera of the "subfamily" historically known as the Erigoninae, and this is a very large assemblage of spiders with many dozens of unnamed species in North America.

Second, underlying and responsible for this incomplete knowledge of the spider fauna, is the relatively small number of workers in the field. Except for interest in spider venoms and their effects on humans, and a recent upsurge in interest springing from possible specialized uses of spider silk, obtaining spider-related information has never had a high priority in any part of the world, with the usual exception of Great Britain, whose amateur tradition in natural history studies is legendary. Spider collecting has often been incidental to other activities and through the centuries has suffered from generally incomplete or even grossly inaccurate collection data. Often the only information available on a label is a date and a general locality (as vague as USA or Wisconsin on many old labels). Even when localities are well specified by latitude and longitude (or town, range, and section), microhabitat information is lacking much more often than not. The dynamics of collecting result normally in the capture of as many specimens as possible within a limited period, with all of the spiders from an area being put into a common receptacle. It is desirable, but time consuming, to separate specimens into discrete and accurately labeled containers reflecting specific habitats of origin, but this usually has not been done.

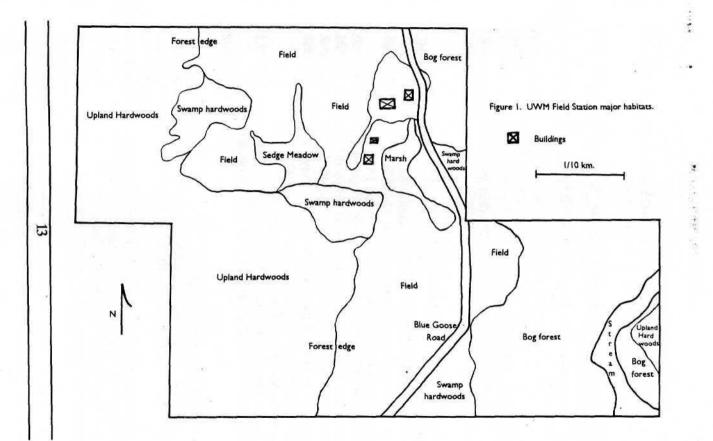
Given this background, the species list which follows is understandably incomplete. It is a reasonable guess that the 100 species recorded constitute no more than about 40% of the spider fauna of the Field Station, and future collecting can be expected to turn up four or five additional families. It is our hope that the information presented here will lead others to consider spider projects in discrete habitats and to deposit spiders incidentally collected with the Milwaukee Public Museum, Inc.

This checklist, annotated with brief natural history information, is based on specimens from three sources primarily: 1) a general survey of Field Station invertebrates conducted by Milwaukee Public Museum staff 1978-80, 2) Martin Blasczyk's Independent Study of the Salticidae (1988), 3) a workshop given by John Kaspar in July of 1990. With the exception of *Araneus trifolium*, all of these species are first records for Ozaukee County. For *Marpissa grata*, this is the first published record for the state.

Sixteen families are represented in the material, constituting just over half of the 27 or 28 families known for the state (Field 1938, Levi and Field 1954, Levi et al. 1958, various unpublished sources). Both families and species within families below are listed in alphabetical order to facilitate information access.

For each species, a common name is given (following Kaston 1978) where available, habitat in which found at the Station, and the months in which specimens (usually mature males and/or females) were taken. Habitat designations (Fig. 1) follow Schultz 1975.

For information on the identification of spiders, the best sources are Kaston (1948, 1981 and 1978), and Roth (1985, revision expected in 1993). Gertsch (1979) and Foelix (1982) are widely available and interesting works on the biology, behavior, ecology and systematics of spiders.



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Checklist (100)

AGELENIDAE--Funnel Weavers (2)

Agelenids are found in flat sheet webs with a funnel retreat in one corner, where the resident spider is usually seen.

Agelenopsis emertoni Chamberlin & Ivie Grass Spider [September/ Upland hardwoods]

Agelenopsis utahana (Chamberlin & Ivie) Grass Spider [July/Upland hardwoods]

ARANEIDAE--Orb Weavers (12)

Araneid species are often large-bodied and are found in orbshaped webs (see Borkin & Jass 1980).

Acanthepeira stellata (Walckenaer) Star-bellied Orb Weaver immature [July/Field]

Araneus gemmoides Chamberlin & Ivie [August/Buildings] Araneus trifolium (Hentz) Shamrock Spider [July/Field] Argiope aurantia Lucas Black & Yellow Argiope [August/Field] Argiope trifasciata (Forskal) Banded Argiope [September/Field] Cyclosa conica (Pallas) [July/Field, Upland hardwoods] Hypsosinga variabilis (Emerton) [June/Forest edge] Leucauge venusta (Walckenaer) Orchard Spider [July/Field] Mangora gibberosa (Hentz) [July/Field, Forest edge] Mangora placida (Hentz) [June, July/Forest edge] Neoscona arabesca (Walckenaer) [July/Field] Singa eugeni Levi [July, September/Field, Sedge meadow]

CLUBIONIDAE--Sack Spiders (8)

Clubionids are long-legged spiders that do not make webs but sometimes rest in silken tubes (see Reinartz 1985).

Castianeira trilineata (Hentz) penultimate female [July/Upland hardwoods] Clubiona abboti L. Koch [September/Field] Clubiona johnsoni Gertsch [June, July/Field] Clubiona kastoni Gertsch [June/Upland hardwoods]

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Clubiona maritima L. Koch [February/Marsh] Clubiona mixta Emerton [June/Field] Clubiona riparia L. Koch [July/Field] Phrurotimpus alarius (Hentz) [July/Field, Upland hardwoods]

DICTYNIDAE--Hackled Band Weavers(5)

Dictynids are small spiders that spin irregular webs at the tips of plants, under leaves or in crevices.

Dictyna coloradensis Chamberlin [June/Forest edge] Dictyna foliacea (Hentz) [June, July/Field, Forest edge] Dictyna sublata (Hentz) [June, July/Field, Upland hardwoods, Forest edge] Dictyna volucripes Keyserling [June, July/Field, Bog forest] Lathys foxi (Marx) [June/Upland hardwoods]

GNAPHOSIDAE--Running Spiders (4)

Gnaphosids are nocturnal hunters, usually dark-colored, with long, slightly flattened abdomens.

Herpyllus ecclesiasticus Hentz Parson Spider [October/Upland hardwoods] Micaria sp. penultimate female [July] Sergiolus capulatus (Walckenaer) [June/Upland hardwoods] Zelotes hentzi Barrows [July/Field]

LINYPHIIDAE--Sheet-web Weavers (11)

The typical linyphild is a small-bodied spider whose web is fairly complex in construction.

Centromerus persoluta (O.Pickard-Cambridge) [July] Centromerus sylvaticus (Blackwall) [October/Upland hardwoods] Ceraticelus fissiceps (O.P.-Cambridge) [June/Upland hardwoods, Bog forest]

Dismodicus decemoculatus (Emerton) [June/Bog forest] Frontinella pyramitela (Walckenaer) Bowl & Doily Spider [July/Field] Hypselistes florens (O.P.-Cambridge) [June, July/Field, Bog forest, Forest edge]

Kaestneria pullata (O.P.-Cambridge) [July/Bog forest]

Neriene clathrata (Sundevall) [June/Upland hardwoods] Pityohyphantes costatus (Hentz) [June/Upland hardwoods] Prolinyphia marginata (C.L. Koch) Filmy Dome Spider [June/Upland hardwoods]

Unknown erigonid possibly Souessa spinifera (O.P.-Cambridge) [June/ Forest edge]

LYCOSIDAE--Wolf Spiders (8)

Wolf Spiders are ground-dwelling hunters that do not make webs. They are usually strong-looking and swift-moving.

Hogna frondicola (Emerton) [July/Bog forest] Pardosa distincta (Blackwall) [July, August/Field] Pardosa moesta Banks [July/Field] Pirata insularis Emerton [July/Field] Pirata montanus Emerton Pirate Wolf Spider [June/Bog forest] Schizocosa crassipalpata Roewer [July/Field] Schizocosa ocreata (Hentz) [June, July/Upland hardwoods, Forest edge] Trochosa terricola Thorell [June/Upland hardwoods, Bog forest]

OXYOPIDAE--Lynx Spiders (1)

Lynx Spiders are diurnal hunters with good vision, lying in wait to pounce on their prey or chasing it over the vegetation.

Oxyopes salticus Hentz Lynx Spider [June, August/Field, Sedge meadow, Buildings]

PHILODROMIDAE (5)

Philodromids are hunters, not web builders, that have eight equalsized legs that are positioned crab-like, held out to the side.

Philodromus cespitum (Walckenaer) [July/Field]

Philodromus rufus vibrans Dondale [June, July/Field, Upland hardwoods] Thanatus sp. penultimate female [July/Field]

Tibellus maritimus (Menge) [June/Field]

Tibellus oblongus (Walckenaer) [June, July, October/Field, Marsh,

Forest edge]

PHOLCIDAE--Cellar Spiders (1)

Pholcids look somewhat like daddy-long-legs and are found hanging upside down in webs in dark, damp places.

Pholcus phalangioides (Fuesslin) Long-bodied Cellar Spider [March/ Buildings]

PISAURIDAE--Nursery Web Spiders (4)

Pisaurids are typically large-bodied hunters, often found living near water. The female makes a web for the newly-hatched young.

Dolomedes striatus Giebel Fishing Spider [February/Sedge meadow] Dolomedes tenebrosus Hentz immature [October/Upland hardwoods] Dolomedes triton (Walckenaer) Six-spotted Fishing Spider [July,

August/Forest edge, Stream]

Pisaurina mira (Walckenaer) immature [October/Upland hardwoods]

SALTICIDAE--Jumping Spiders (19)

Salticids are typically fuzzy-bodied active hunters with good vision.

Eris flava (G&E Peckham) [May/Field]

Eris militaris (Hentz) [June, July, August/Field, Bog forest, Forest edge] Evarcha hoyi (G&E Peckham) [June, August, October/Field, Marsh, Forest edge, Buildings]

Maevia inclemens (Walckenaer) [June, September/Upland hardwoods]
Marpissa formosa Banks penultimate female [July/Field]
Marpissa grata (Gertsch) [August/Field]
Metaphidippus galathea (Walckenaer) [June/Forest edge]
Metaphidippus protervus (Walckenaer) [June, July/Field, Upland hardwoods, Bog forest, Forest edge]
Phidippus audax (Hentz) [May, August/Buildings]
Phidippus clarus Keyserling [June, July/Field, Forest edge]
Phidippus whitmani G&E Peckham [August/Field]
Salticus scenicus (Clerck) Zebra Spider [June, July/Buildings]
Sitticus fasciger (Simon) [July/Buildings]

Sitticus palustris (G&E Peckham) [May/Field]

Synageles noxiosus Hentz [March/Field, Buildings]

Synageles occidentalis Cutler [May, June/Field] Synemosyna formica Hentz [July/Forest edge] Tutelina similis (Banks) [June/Field, Forest edge] Zygoballus rufipes G&E Peckham [June, July/Upland hardwoods, Bog forest, Forest edge]

TETRAGNATHIDAE (3)

The typical tetragnathid has a long thin body with long legs and lives in an orb-shaped web that is found at an angle between horizontal and vertical.

Pachygnatha dorothea McCook Thick-jawed Spider [February/Sedge meadow]

Tetragnatha caudata Emerton [June/Bog forest] Tetragnatha laboriosa Hentz [July/Field]

THERIDIIDAE--Cobweb Weavers (7)

The typical theridiid has a quite large abdomen relative to its cephalothorax and hangs upside down in a web of tangled threads.

Enoplognatha ovata (Clerck) [June, July/Field, Bog forest]

Enoplognatha tecta (Keyserling) [June/Upland hardwoods]

Robertus riparius (Keyserling) [July/Upland hardwoods]

Theridion albidum Banks [July/Field]

Theridion differens Emerton [June, July/Field, Upland hardwoods, Forest edge]

Theridion frondeum Hentz [July/Field]

Thymoites unimaculatum (Emerton) [June/Forest edge]

THERIDIOSOMATIDAE--Ray Spiders (1)

The Ray Spider constructs an orb-shaped web which is drawn into the shape of a cone and held in readiness by the small-bodied occupant.

Theridiosoma gemmosum (L. Koch) [July/Bog forest]

THOMISIDAE--Crab Spiders (9)

A Crab Spider has a stocky body and holds its legs out to the side like a crab, with the first two pairs quite a bit longer than the second.

Misumena vatia (Clerck) Flower Spider [June, July/Field, Forest edge] Misumenops asperatus (Hentz) Flower Spider [July/Field] Ozyptila americana Banks [July/Bog forest] Xysticus ampullatus Turnbull et al. [July/Field] Xysticus elegans Keyserling [June/Field] Xysticus ferox (Hentz) [June/Field] Xysticus ferox (Hentz) [June/Field] Xysticus fraternus Banks [June/Field, Upland hardwoods] Xysticus triguttatus Keyserling [June, July/Field]

Acknowledgments

Species were determined by: Martin Blasczyk, G.B. Edwards, John Kaspar, Herbert Levi, James Redner, Robert Wolff. Specimens were collected by: Martin Blasczyk, Susan Borkin, Gary Casper, Ellen Censky, Drew Hildebrandt, Joan Jass, Guy Johnson, John Kaspar, Meredith Platt, Maria Plonczynski, Lynn Remkus, Robert Wolff, Craig Yanek. We are grateful to all of the above.

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