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#### ARACHNIDS (EXCLUDING ACARINA AND PSEUDOSCORPIONIDA) OF THE WICHITA MOUNTAINS WILDLIFE REFUGE, OKLAHOMA

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The Wichita Mountains are located in eastern Greer, southern Kiowa, and northwestern Comanche counties in Oklahoma. Since their formation more than 300 million years ago, these rugged mountains have been fragmented and weathered, until today the highest peak (Mount Pinchot) stands only 756 meters above sea level (Tyler, 1977). The mountains are composed predominantly of granite and gabbro. Forests of oak, elm, and walnut border most waterways, while at elevations from 153 to 427 meters prairies are the predominant vegetation type. A more detailed summary of the climatic and biotic features of the Wichitas has been presented by Blair and Hubbell (1938).

A large tract of land in the eastern range of the Wichita Mountains (now northeastern Comanche County) was set aside as the Wichita National Forest by President McKinley during 1901. In 1905, President Theodore Roosevelt created a game preserve on those lands managed by the Forest Service. Since 1935, this preserve has been known as the Wichita Mountains Wildlife Refuge.

Numerous papers on Oklahoma spiders have been published (Bailey and Chada, 1968; Bailey *et al.*, 1968; Banks *et al.*, 1932; Branson, 1958, 1959, 1966, 1968; Branson and Drew, 1972; Grothaus, 1968; Harrel, 1962, 1965; Horner, 1975; Rogers and Horner, 1977), but only a single, comprehensive work (Banks *et al.*, 1932) exists covering all arachnid orders in the state. Further additions and annotations to the arachnid fauna of Oklahoma can be found

in recent revisionary studies. Compared to the state in general, however, the spiders of the Wichita Mountains Wildlife Refuge are poorly known. The one study conducted in this area was carried out during the summers of 1926 and 1928 as part of the University of Oklahoma Biological Survey (Banks *et al.*, 1932). A few specimens were collected later in the 1930s and intermittent samples were taken between 1965 and 1976, but it was not until 1977 and 1978 that a concentrated effort was made to document the arachnid fauna in the region. What follows is a summary of the arachnids (excluding Acarina and Pseudoscorpionida) of the Wichita Mountains Wildlife Refuge based on surviving specimens from the above collections. Specimens currently are housed in the Stoval Museum, University of Oklahoma, Norman; Biology Department, Midwestern State University, Wichita Falls, Texas; The American Museum of Natural History, New York; The Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts. This work also includes synonymies of names used by previous authors, in most cases due to misidentifications, and pertinent bibliographic references to descriptions, recent revisions, or taxonomic changes. Additionally, the order Uropygida and many species of spiders are recorded from Oklahoma for the first time.

#### ANNOTATED LIST OF SPECIES

##### Order ARANEAE

##### Family THERAPHOSIDAE Thorell, 1870

*Duguesiella hentzi* (Girard), 1853

*Bibliography*.—Girard (1853).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Eurypelma hentzi* Girard.

##### Family CTENIZIDAE Thorell, 1887

*Myrmekeiaphila comstocki* Bishop and Crosby, 1926

*Bibliography*.—Bishop and Crosby (1926).

*Comments*.—Many males taken in pitfall traps in late March and April are the first records of this species in Oklahoma.

*Ummidia audouini* (Lucas), 1836

*Bibliography*.—Kaston (1978).

*Comments*.—A male collected 22 June 1928 by N. M. Newport in the Wichita National Forest, identified as *Pachyomeres carobivorus* Atkinson, 1886, by Newport, was not listed in Banks *et al.* (1932).

## Family FILISTATIDAE Ausserer, 1867

*Filistata hibernalis* Hentz, 1842

*Bibliography*.—Kaston (1978).

## Family OECOBIIDAE Blackwall, 1862

*Oecobius cellariorum* (Dugès), 1836

*Bibliography*.—Shear (1970).

*Comments*.—Reported (Grothaus, 1968) elsewhere in Oklahoma as *Oecobius texanus* Bryant, 1936.

## Family ULOBORIDAE O. Pickard-Cambridge, 1871

*Uloborus glomosus* (Walckenaer), 1842

*Bibliography*.—Muma and Gertsch (1964).

*Comments*.—Reported (Banks *et al.*, 1932) in Oklahoma as *Uloborus plumipes* Lucas, 1846.

## Family DICTYNIDAE O. Pickard-Cambridge, 1871

*Dictyna consulta* Gertsch, 1936

*Bibliography*.—Chamberlin and Gertsch (1958).

*Dictyna bellans* Chamberlin, 1919

*Bibliography*.—Chamberlin and Gertsch (1958).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Dictyna longispina* Emerton, 1888.

*Dictyna volucris* Keyserling, 1882

*Bibliography*.—Chamberlin and Gertsch (1958).

*Lathys delicatula* Gertsch and Mulaik, 1936

*Bibliography*.—Chamberlin and Gertsch (1958).

*Lathys* sp.

*Comments*.—This species, apparently undescribed, was found only in oak litter and under rocks from late October to early December. Males have not been collected to date.

## Family AMAUROBIIDAE Thorell, 1870

*Titanoeca americana* Emerton, 1888

*Bibliography*.—Leech (1972).

## Family LOXOSCELIDAE Simon, 1893

*Loxosceles reclusa* Gertsch and Mulaik, 1940

*Bibliography*.—Gertsch (1958a).

*Comments*.—Reported (Banks *et al.*, 1932) as *Loxosceles rufescens* (Dufour), 1820.

## Family DIGUETIDAE Gertsch, 1949

*Diguettia canities* (McCook), 1890

*Bibliography*.—Gertsch (1958b).

## Family SEGESTRIIDAE Simon, 1893

*Ariadna bicolor* (Hentz), 1827

*Bibliography*.—Beatty (1970).

## Family PHOLCIDAE C. L. Koch, 1850

*Psilochorus enaulus* Crosby, 1926

*Bibliography*.—Gertsch and Mulaik (1940).

*Comments*.—Reported (Harrel, 1965) in the family Agelenidae.

*Psilochorus imitatus* Gertsch and Mulaik, 1940

*Bibliography*.—Gertsch and Mulaik (1940).

*Comments*.—Reported (Bailey *et al.*, 1968) in the family Clubionidae.

*Psilochorus pullulus* Hentz, 1850

*Bibliography*.—Kaston (1948).

*Spermophora meridionalis* Hentz, 1841

*Bibliography*.—Kaston (1948).

*Comments*.—An immature of this monotypic genus was collected on 12 November from under a rock and represents a new record for the state.

## Family THERIDIIDAE Sundevall, 1833

*Achaearanea tepidariorum* (C. L. Koch), 1841

*Bibliography*.—Levi (1967).

*Enoplognatha* cf. *marmorata* (Hentz), 1850

*Bibliography*.—Levi (1957a).

*Euryopsis* cf. *texana* Banks, 1908

*Bibliography*.—Levi (1954).

*Comments*.—A specimen was taken from under a rock on 29 October. As the palpi were absent, the sex and specific identity could not be determined for certain.

*Euryopsis weesei* Levi, 1963

*Bibliography*.—Levi (1963).

*Comments*.—The male reported (Banks *et al.*, 1932) as *Euryopsis emertoni* Bryant, 1933, was designated the holotype of *E. weesei* (Levi, 1963).

*Latrodectus mactans* (Fabricius), 1775

*Bibliography*.—Levi (1959).

*Latrodectus variolus* (Walckenaer), 1837

*Bibliography*.—McCrone and Levi (1964); Levi and Randolph (1975).

*Comments*.—Reported (Branson, 1966) elsewhere in Oklahoma as *Latrodectus curacaviensis* (Müller), 1776.



***Steatoda triangulosa*** (Walckenaer), 1892

*Bibliography*.—Levi (1957b).

*Comments*.—Reported (Banks *et al.*, 1932; Branson, 1966) elsewhere in Oklahoma as *Teutana triangulosa* (Walckenaer).

***Theridion murarium*** Emerton, 1882

*Bibliography*.—Levi (1957a).

## Family LINYPHIIDAE Blackwall, 1859

***Bathypantes*** sp.

*Bibliography*.—Ivie (1969).

*Comments*.—A male and female of this small species, apparently undescribed, were taken from under a rock during March. These specimens were in association with ants.

***Frontinella pyramitela*** (Walckenaer), 1837

*Bibliography*.—Kaston (1948).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Linyphia communis* Hentz, 1850; and elsewhere in Oklahoma as *Frontinella communis* (Hentz) by Bailey and Chada (1968) and Branson (1966, 1968).

***Prolinyphia marginata*** (C. L. Koch), 1834

*Bibliography*.—Kaston (1948, 1976).

*Comments*.—Reported (Banks *et al.*, 1932; Grothaus, 1968) as *Linyphia marginata* C. L. Koch.

## Family MICRYPHANTIDAE Bertkau, 1872

***Ceraticelus*** sp.

*Comments*.—Two males, taken during June, were swept from blooms of *Thelesperma* sp. (Compositae). As the genus is in need of revisionary studies, no specific name can be applied with certainty.

***Erigone autumnalis*** Emerton, 1882

*Bibliography*.—Crosby and Bishop (1928); Kaston (1948).

***Idionella*** cf. ***rugosus*** (Crosby), 1905

*Bibliography*.—Crosby (1905); Kaston (1948, 1976).

*Comments*.—A male taken in a pitfall trap during May is the first record of this genus in Oklahoma.

***Wubana drassoides*** (Emerton), 1882

*Bibliography*.—Kaston (1948).

*Comments*.—A male sifted from leaf (oak) litter during October is a new record for the state.

## Family ARANEIDAE Simon, 1895

***Acanthepeira stellata*** Walckenaer, 1805

*Bibliography*.—Levi (1976).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Plectana stellata* (Hentz), 1850. Branson and Drew (1972) give the author of this species as Marx.

*Araneus illaudatus* (Gertsch and Mulaik), 1936

*Bibliography*.—Levi (1971, 1975b).

*Comments*.—Three females taken on the outside of buildings in autumn are new records for Oklahoma.

*Argiope aurantia* Lucas, 1833

*Bibliography*.—Levi (1968).

*Argiope trifasciata* (Forsk.) 1775

*Bibliography*.—Levi (1968).

*Cyclosa turbinata* (Walckenaer), 1841

*Bibliography*.—Levi (1977a).

*Eustala anastera* (Walckenaer), 1841

*Bibliography*.—Levi (1977a).

*Comments*.—Reported (Branson, 1966, 1968) elsewhere in Oklahoma as *Eustala triflex* (Walckenaer), 1841, and in the Wichita National Forest as *Epeira prompta* Hentz, 1847, and *Epeira conchlea* McCook, 1888, by Banks *et al.* (1932).

*Eustala cepina* (Walckenaer), 1841

*Bibliography*.—Levi (1977a).

*Eustala emertoni* (Banks), 1904

*Bibliography*.—Levi (1977a).

*Gea heptagon* (Hentz), 1850

*Bibliography*.—Levi (1968).

*Comments*.—An immature of this monotypic genus, taken in autumn, is the first record in Oklahoma.

*Larinia directa* (Hentz), 1847

*Bibliography*.—Levi (1975a).

*Leucauge venusta* (Walckenaer), 1837

*Bibliography*.—Kaston (1948, 1976).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Leucauge hortorum* Hentz, 1847. Erroneously reported (Branson, 1966) in the family Tetragnathidae.

*Mangora gibberosa* (Hentz), 1847

*Bibliography*.—Levi (1975a).

*Mangora placida* (Hentz), 1847

*Bibliography*.—Levi (1975a).

*Mecynogea lemniscata* (Walckenaer), 1842

*Bibliography*.—Levi (1968); Kaston (1978).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Allepeira basilica* (McCook), 1878.

*Metepeira labyrinthea* (Hentz), 1847

*Bibliography*.—Levi (1977b).

*Micrathena gracilis* (Walckenaer), 1841

*Bibliography*.—Levi (1978).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Acrosoma gracilis* (Walckenaer).

*Nectenea cornuta* (Clerck), 1757

*Bibliography*.—Levi (1974).

*Comments*.—Reported (Banks *et al.*, 1932) elsewhere in Oklahoma as *Epeira strix* Hentz, 1857, and as *Araneus cornutus* (Clerck) by Branson (1966, 1968).

*Neoscona arabesca* (Walckenaer), 1841

*Bibliography*.—Berman and Levi (1971).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Epeira trivittata* Keyserling, 1863.

*Neoscona hentzii* (Keyserling), 1863

*Bibliography*.—Berman and Levi (1971).

*Neoscona oaxacensis* (Keyserling), 1863

*Bibliography*.—Berman and Levi (1971).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Epeira oaxacensis* Keyserling.

*Hypsosinga funebris* (Keyserling), 1893

*Bibliography*.—Levi (1972, 1975b).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Singa shefferi* Banks, 1910.

#### Family TETRAGNATHIDAE Menge, 1866

*Tetragnatha elongata* Walckenaer, 1837

*Bibliography*.—Seeley (1928).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Tetragnatha grallator* Hentz, 1875.

*Tetragnatha laboriosa* Hentz, 1850

*Bibliography*.—Seeley (1928).

*Tetragnatha pallescens* O. Pickard-Cambridge, 1905

*Bibliography*.—Seeley (1928).

*Comments*.—Reported (Banks *et al.*, 1932) as *Eugnatha pallescens* (Cambridge).

#### Family AGELENIDAE C. L. Koch, 1837

*Agelenopsis emertoni* Chamberlin and Ivie, 1935

*Bibliography*.—Chamberlin and Ivie (1941)

*Comments*.—Reported (Banks *et al.*, 1932) in part as *Agelena naevia* Hentz, 1847.

*Agelenopsis naevia* (Walckenaer), 1805

*Bibliography*.—Chamberlin and Ivie (1941).

*Comments*.—Reported (Banks *et al.*, 1932) in part as *Agelena naevia* Hentz, 1847.

*Cicurina arizona* Chamberlin and Ivie, 1940

*Bibliography*.—Chamberlin and Ivie (1940).

## Family MIMETIDAE Simon, 1890

*Mimetus hesperus* Chamberlin, 1923

*Bibliography*.—Chamberlin (1923).

## Family PISAURIDAE Simon, 1890

*Dolomedes scriptus* Hentz, 1845

*Bibliography*.—Carico (1973).

*Dolomedes triton* (Walckenaer), 1837

*Bibliography*.—Carico (1973).

*Comments*.—Reported (Branson, 1966; Grothaus, 1968) in Oklahoma as *Dolomedes triton sexpunctatus* Hentz, 1845, and as *Dolomedes sexpunctatus* Hentz, 1845, by Banks *et al.* (1932) and Branson (1968).

*Dolomedes vittatus* Walckenaer, 1837

*Bibliography*.—Carico (1973).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Dolomedes urinator* Hentz, 1845, and in part as *Dolomedes scriptus* Hentz, 1845.

*Pelopatis undulata* (Keyserling), 1887

*Bibliography*.—Kaston (1978).

*Pisaurina dubia* (Hentz), 1847

*Bibliography*.—Carico (1972).

*Comments*.—Reported (Banks *et al.*, 1932) elsewhere in Oklahoma as *Thanatidius dubius* Hentz.

*Pisaurina mira* (Walckenaer), 1837

*Bibliography*.—Carico (1972).

*Comments*.—Reported (Grothaus 1968; Harrel, 1965) elsewhere in Oklahoma as *Dapanus mirus* (Walckenaer).

## Family LYCOSIDAE, Sundevall, 1833

*Allocosa funerea* (Hentz), 1844

*Bibliography*.—Chamberlin (1908); Kaston (1948).

*Comments*.—Reported (Branson, 1968; Harrel, 1965) elsewhere in Oklahoma as *Arctosa funerea* (Hentz).

*Alopecosa kochi* (Keyserling), 1877

*Bibliography*.—Dondale and Redner (1979).

*Arctosa littoralis* (Hentz), 1844

*Bibliography*.—Kaston (1948, 1976).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Trocosa cinerea* (Fabricius), 1790.

*Arctosa noctuabunda* (Montgomery), 1904

*Bibliography*.—Chamberlin (1908).

*Comments*.—A male and female taken in pitfall traps during May are the first records for Oklahoma. The traps were in low lying pastures.

*Geolycosa missourensis* (Banks), 1894

*Bibliography*.—Wallace (1942).

*Lycosa avara* (Keyserling), 1876

*Bibliography*.—Chamberlin (1908); Kaston (1948).

*Comments*.—Reported (Grothaus, 1968; Harrel, 1965) in Oklahoma as *Trocosa avara* (Keyserling).

*Lycosa carolinensis* Walckenaer, 1837

*Bibliography*.—Kaston (1948).

*Lycosa pulchra* (Keyserling), 1877

*Bibliography*.—Chamberlin (1908); Gertsch (1935a); Dondale and Redner (1978).

*Comments*.—Probably same as *Lycosa gulosa* (Walckenaer), 1837, of Bailey and Chada (1968) and Harrel (1965).

*Lycosa punctulata* Hentz, 1844

*Bibliography*.—Kaston (1948).

*Lycosa rabida* Walckenaer, 1837

*Bibliography*.—Kaston (1948).

*Lycosa* sp.

*Comments*.—The genus *Lycosa* is in need of revision. We are unable to determine specific identifications on three forms (two known by males, the third by males and females) in the Refuge.

*Paradosa mercurialis* Montgomery, 1903

*Bibliography*.—Barnes (1959).

*Pardosa pauxilla* Montgomery, 1904

*Bibliography*.—Chamberlin (1908).

*Pirata insularis* Emerton, 1885

*Bibliography*.—Wallace and Exline (1977).

*Schizocosa avida* (Walckenaer), 1837

*Bibliography*.—Dondale and Redner (1978).

*Comments*.—Reported (Banks *et al.*, 1932) in Oklahoma as *Lycosa erratica* Hentz, 1844.

*Schizocosa bilineata* (Emerton), 1885

*Bibliography*.—Dondale and Redner (1978).

*Schizocosa mccooki* (Montgomery), 1904

*Bibliography*.—Dondale and Redner (1978).

*Schizocosa ocreata* (Hentz), 1844

*Bibliography*.—Dondale and Redner (1978).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Schizogyna ocreata* (Hentz).

*Schizocosa retrorosa* (Banks), 1911

*Bibliography*.—Dondale and Redner (1978).

*Schizocosa saltatrix* (Hentz), 1844

*Bibliography*.—Dondale and Redner (1978).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Schizogyna gracilis* (Banks), 1892.

*Schizocosa? perplexa* Bryant, 1936

*Bibliography*.—Dondale and Redner (1978).

*Comments*.—The male reported (Banks *et al.*, 1932) as *Schizogyna ocreata* Hentz is this species. The male was taken on 25 June 1928 in the Wichita National Forest. Dondale and Redner (1978) excluded this species from *Schizocosa*. This is the first record of this species in Oklahoma.

*Trocosa terricola* (Thorell), 1856

*Bibliography*.—Kaston (1948, 1976).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Lycosa pratensis* (Emerton), 1885.

Family OXYOPIDAE Thorell, 1870

*Oxyopes apollo* Brady, 1964

*Bibliography*.—Brady (1964).

*Oxyopes scalaris* Hentz, 1845

*Bibliography*.—Brady (1964).

*Oxyopes salticus* Hentz, 1845

*Bibliography*.—Brady (1964).

Family GNAPHOSIDAE Pocock, 1884

*Callilepis imbecilla* (Keyserling), 1887

*Bibliography*.—Platnick (1975).

*Comments*.—See *Drassyllus* cf. *aprilinus* below.

*Cesonia* cf. *bilineata* (Hentz), 1847

*Bibliography*.—Kaston (1948).

*Comments*.—Only immatures of this species are known from the Refuge.



*Drassodes auriculoides* Barrows, 1919

*Bibliography*.—Platnick and Shadab (1976a).

*Drassyllus* cf. *aprilinus* (Banks), 1904

*Bibliography*.—Kaston (1948).

*Comments*.—A female was reported (Banks *et al.*, 1932) from the Wichita National Forest as *Callilepis imbecilla*.

*Drassyllus* sp.

*Comments*.—The genus *Drassyllus* is in need of revision. We are unable to determine specific identifications on two forms from the Refuge.

*Gnaphosa frontinalis* Keyserling, 1887

*Bibliography*.—Platnick and Shadab (1975a).

*Gnaphosa sericata* (L. Koch), 1866

*Bibliography*.—Platnick and Shadab (1975a).

*Haplodrassus chamberlini* Platnick and Shadab, 1975

*Bibliography*.—Platnick and Shadab (1975b).

*Haplodrassus signifer* (C. L. Koch), 1839

*Bibliography*.—Platnick and Shadab (1975b).

*Herpyllus ecclesiasticus* Hentz, 1832

*Bibliography*.—Platnick and Shadab (1977).

*Comments*.—Reported (Branson, 1966; Grothaus, 1968) elsewhere in Oklahoma as *Herpyllus vasifer* (Walckenaer), 1837.

*Micaria* sp.

*Comments*.—The genus *Micaria* is in need of revision. We are unable to make specific identifications on two (?) forms (known from one immature and a male) from the Refuge.

*Poecilochroa* sp.

*Comments*.—The genus *Poecilochroa* is in need of revision. We are unable to make specific identification on two males taken during May in short grass pastures.

*Rachodrassus exlineae* Platnick and Shadab, 1976

*Bibliography*.—Platnick and Shadab (1976b).

*Zelotes hentzi* Barrows, 1945

*Bibliography*.—Kaston (1948).

*Zelotes* cf. *puritanus* Chamberlin, 1922

*Bibliography*.—Chamberlin (1922).

*Comments*.—A female was captured at Sulphur Flats in late November.

*Zelotes* sp.

*Comments.*—The genus *Zelotes* is in need of revision. We are unable to determine specific identifications on two males collected in oak litter during April and May.

## Family CLUBIONIDAE Wagner, 1888

*Agroeca* sp.

*Comments.*—A specimen, too immature for specific identification, was collected on 6 September at Sulphur Flats.

*Castianeira longipalpus* (Hentz), 1847

*Bibliography.*—Reiskind (1969).

*Castianeira crocata* (Hentz), 1847

*Bibliography.*—Reiskind (1969).

*Castianeira trilineata* (Hentz), 1847

*Bibliography.*—Reiskind (1969).

*Clubiona* sp.

*Bibliography.*—Edwards (1958).

*Comments.*—Three females were taken from oak litter, two on January 1, the other in late November. These forms apparently represent an as yet undescribed species but one that is probably closely related to *C. kiowa* Gertsch, 1941.

*Clubiona pygmaea* Banks, 1892

*Bibliography.*—Edwards (1958).

*Clubionoides excepta* (L. Koch), 1866

*Bibliography.*—Edwards (1958).

*Phrurotimpus alarius* (Hentz), 1847

*Bibliography.*—Kaston (1945, 1948).

*Phrurotimpus* sp.

*Bibliography.*—Kaston (1945, 1948).

*Comments.*—This species is probably the same as the *Phrurotimpus borealis* reported (Branson, 1966) elsewhere in Oklahoma. A female is known from the Refuge.

*Scotinella* sp.

*Bibliography.*—Kaston (1948, 1976).

*Comments.*—Two females of this small form have been collected, one from oak litter (early November) the other from under a rock (December). We think these specimens represent an undescribed species that is closely related to *S. similis* Banks, 1845. Another member of the genus has been reported (Banks *et al.*, 1932; Branson, 1966) in Oklahoma under the generic name *Phrurolithus*. The genus *Scotinella* was reported erroneously (Branson and Drew, 1972) in the family Salticidae.

*Syrisca* sp.

*Bibliography*.—Gertsch (1935b).

*Comments*.—The only specimen from the Refuge is too immature for specific identification but it might be *Syrisca affinis* (Banks), 1897, which is known from Texas.

## Family ANYPHAENIDAE Bertkau, 1878

*Anyphanea fraterna* (Banks), 1896

*Bibliography*.—Platnick (1974).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Gayenna celer* Hentz, 1847.

*Aysa gracilis* (Hentz), 1847

*Bibliography*.—Platnick (1974).

*Comments*.—Reported (Banks *et al.*, 1932) elsewhere in Oklahoma as *Anyphanea gracilis* (Hentz).

## Family THOMISIDAE Sundevall, 1833

*Coriarachne versicolor* Keyserling, 1880

*Bibliography*.—Bowling and Sauer (1975).

*Misumenoides formosipes* (Walckenaer), 1837

*Bibliography*.—Schick (1965).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Runcinia aleatoria* (Hentz), 1847, and elsewhere in Oklahoma as *Misumenoides aleatoria* (Hentz) by Branson (1966).

*Misumenops asperatus* (Hentz), 1847

*Bibliography*.—Gertsch (1939); Schick (1965).

*Comments*.—All specimens reported (Banks *et al.*, 1932) from the Wichita National Forest are *Misumenops celer* (Hentz) according to Cokendolpher *et al.* (1979). Recent collections have included specimens of the true *M. asperatus*.

*Misumenops celer* (Hentz), 1847

*Bibliography*.—Gertsch (1939); Schick (1965).

*Misumenops dubius* (Keyserling), 1880

*Bibliography*.—Gertsch (1939); Schick (1965).

*Misumenops oblongus* (Keyserling), 1880

*Bibliography*.—Gertsch (1939); Schick (1965).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Misumena americana* Keyserling, 1880.

*Tmarus angulatus* (Walckenaer), 1837

*Bibliography*.—Gertsch (1939).

*Comments*.—Although not known from the Refuge, a specimen was taken a few kilometers south of the Cache Gate (Eagle Park, City of Cache). The specimen was taken while sweeping grasses in mid October. Reported (Banks *et al.*, 1932) elsewhere in Oklahoma as *Tmarus caudatus* Hentz, 1847.

*Xysticus apacheus* Gertsch, 1933

*Bibliography*.—Gertsch (1953); Schick (1965).

*Xysticus auctificus* Keyserling, 1880

*Bibliography*.—Gertsch (1953).

*Xysticus ferox* (Hentz), 1847

*Bibliography*.—Gertsch (1939, 1953).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Xysticus cunctator* Thorell, 1877.

*Xysticus funestus* Keyserling, 1880

*Bibliography*.—Gertsch (1953).

*Comments*.—Reported (Banks *et al.*, 1932) elsewhere in Oklahoma as *Xysticus nervosus* Banks, 1892, and as *Xysticus tumefactus* (Walckenaer), 1837, by Branson (1966).

*Xysticus pallax* (O. Pickard-Cambridge), 1894

*Bibliography*.—Gertsch (1953); Schick (1965).

*Xysticus* cf. *pallax* (O. Pickard-Cambridge), 1894

*Comments*.—Two females of this species were taken in a prairie in mid October.

*Xysticus triguttatus* Keyserling, 1880

*Bibliography*.—Gertsch (1953).

Family PHILODROMIDAE Thorell, 1870

*Ebo punctatus* Sauer and Platnick, 1972

*Bibliography*.—Sauer and Platnick (1972).

*Philodromus keyserlingi* Marx, 1890

*Bibliography*.—Dondale (1961); Dondale and Redner (1976).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Philodromus pernix* Blackwall, 1846, and described as *Philodromus washita* Banks, 1932, elsewhere in Oklahoma.

*Philodromus pratariae* (Scheffer), 1904

*Bibliography*.—Dondale and Redner (1969).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Philodromoides pratariae* Scheffer.

*Thanatus altimontis* Gertsch, 1933

*Bibliography*.—Dondale *et al.* (1964).

*Thanatus formicinus* (Cleck), 1757

*Bibliography*.—Dondale *et al.* (1964).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Thanatus lycosoides* Emerton, 1892. The author of this species is not Oliver, 1789, as reported by Branson (1966) and Branson and Drew (1972).

*Tibellus duttoni* (Hentz), 1847

*Bibliography*.—Gertsch (1933).

Family SALTICIDAE Blackwall, 1841

*Eris marginata* (Walckenaer), 1837

*Bibliography*.—Kaston (1973).

*Comments*.—Reported (Branson, 1966) elsewhere in Oklahoma as *Paraphidippus marginatus* (Walckenaer).

*Habrocestum pulex* Hentz, 1846

*Bibliography*.—Peckham and Peckham (1909); Kaston (1948).

*Hentzia palmarum* (Hentz), 1832

*Bibliography*.—Peckham and Peckham (1909); Kaston (1948).

*Comments*.—Reported (Branson, 1966, 1968) elsewhere in Oklahoma as *Hentzia ambigua* (Walckenaer), 1837.

*Maevia inclemens* (Walckenaer), 1837

*Bibliography*.—Barnes (1955, 1958).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Maevia niger* Hentz, 1845.

*Marpissa lineata* (C. L. Koch), 1848

*Bibliography*.—Barnes (1958).

*Marpissa pikei* Peckham and Peckham, 1888

*Bibliography*.—Barnes (1958).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Hytia pikei* Peckham and Peckham.

*Metacryba taeniola* Hentz, 1845

*Bibliography*.—Barnes (1958).

*Metacryba undata* (DeGeer), 1778

*Bibliography*.—Reported (Banks *et al.*, 1932; Branson, 1966; Branson and Drew, 1972) in Oklahoma as *Marpissa undata* DeGeer.

*Metaphidippus galathea* (Walckenaer), 1837

*Bibliography*.—Kaston (1973).

*Comments*.—Reported (Banks *et al.*, 1932) in Oklahoma as *Dendryphantes nubulis* Hentz, 1846.

*Metaphidippus* cf. *pervagus* (Peckham and Peckham), 1909

*Bibliography*.—Peckham and Peckham (1909).

*Metaphidippus* cf. *unicus* (Chamberlin and Gertsch), 1930

*Bibliography*.—Gertsch and Riechert (1976).

***Pellenes coecatus* (Hentz), 1846**

*Bibliography*.—Kaston (1945); Richman and Cutler (1978).

*Comments*.—Reported (Branson, 1959, 1966, 1968) elsewhere in Oklahoma as *Pellenes cornatus* (Hentz), 1846, and as *Habronatus cornatus* (Hentz) by Bailey and Chada (1968) and Grothaus (1968).

***Pellenes limatus* Peckham and Peckham, 1900**

*Bibliography*.—Peckham and Peckham (1909).

***Pellenes philipi* Gertsch and Jellison, 1939**

*Bibliography*.—Gertsch and Jellison (1939).

*Comments*.—Three males taken in pitfall traps set in short grass prairies in April and May are the first records of this species in Oklahoma.

***Pellenes* sp.**

*Comments*.—A male and female of this genus, apparently representing an undescribed species, were taken in pitfall traps set in a bermuda grass pasture during March.

***Phidippus apacheanus* Chamberlin and Gertsch, 1929**

*Bibliography*.—Chamberlin and Gertsch (1929); Richman and Cutler (1978).

*Comments*.—Males reported as *Phidippus ardens* Peckham and Peckham, 1901, females as *Phidippus insolens* (Hentz), 1844, by Banks *et al.* (1932).

***Phidippus audax* Hentz, 1845**

*Bibliography*.—Peckham and Peckham (1909); Kaston (1948).

*Comments*.—Reported (Banks *et al.*, 1932; Branson, 1966, 1968; Branson and Drew, 1972) elsewhere in Oklahoma as *Phidippus variegatus* (Lucas), 1833.

***Phidippus clarus* Keyserling, 1884**

*Bibliography*.—Kaston (1948); Richman and Cutler (1978).

*Comments*.—Reported (Branson, 1966, 1968) elsewhere in Oklahoma as *Phidippus rimator* (Walckenaer), 1837. *Phidippus rimator* is considered a *nomen dubia* by Richman and Cutler (1978), and as such should be removed from the state list.

***Phidippus mystaceus* Hentz, 1846**

*Bibliography*.—Peckham and Peckham (1909); Richman and Cutler (1978).

***Phidippus pius* Scheffer, 1906**

*Bibliography*.—Peckham and Peckham (1909); Richman and Cutler (1978).

***Phidippus rauterbergii* Peckham and Peckham, 1888**

*Bibliography*.—Bryant (1942).

***Phidippus texanus* Banks, 1905**

*Bibliography*.—Bryant (1942).

*Comments*.—Males reported (Banks *et al.*, 1932) as *Phidippus insolens* (Hentz), 1844. See comments under *Phidippus apacheanus* above.



*Phlegra fasciata* (Hahn), 1896

*Bibliography*.—Peckham and Peckham (1909).

*Salticus austensis* Gertsch, 1936

*Bibliography*.—Peckham and Peckham (1909); Gertsch (1936).

*Comments*.—Reported (Branson, 1968) elsewhere in Oklahoma as

*Salticus albocinctus* Peckham and Peckham, 1896.

*Sassacus papenhoei* Peckham and Peckham, 1895

*Bibliography*.—Peckham and Peckham (1909).

*Comments*.—Reported (Horner, 1975) elsewhere in Oklahoma as

*Tutelina elegans* (Hentz), 1846.

*Sitticus* sp.

*Comments*.—Three specimens, too immature for specific identification, were taken from under rocks during November.

*Synageles noxiosa* (Hentz), 1850

*Bibliography*.—Kaston (1948, 1976).

*Thiodina puerpera* Hentz, 1846

*Bibliography*.—Peckham and Peckham (1909).

#### Order OPILIONES

##### Family COSMETIDAE Simon, 1879

*Vonones sayi* (Simon), 1879

*Bibliography*.—Simon (1879); Roewer (1923).

*Comments*.—Reported (Banks *et al.*, 1932) from the Wichita National Forest as *Cynorta sayii* Simon.

##### Family LEIOBUNIDAE Banks, 1893

*Eumesosoma roeweri* (Goodnight and Goodnight)

*Bibliography*.—Cokendolpher (1980).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Mesosoma niger* Say, 1821.

*Leiobunum crassipalpe* Banks, 1900

*Bibliography*.—Davis (1934).

*Comments*.—Clarence Goodnight has indicated (personal communication) this species may be a synonym of *Leiobunum vittatum* (Say), 1821.

*Leiobunum leiopenis* Davis, 1934

*Bibliography*.—Davis (1934).

*Leiobunum politum* Weed, 1889

*Bibliography*.—Davis (1934).

*Leiobunum relictum* Davis, 1934

*Bibliography*.—Davis (1934).

*Leiobunum townsendi* Weed, 1893

*Bibliography*.—Davis (1934).

*Leiobunum vittatum* (Say), 1821

*Bibliography*.—Davis (1934).

*Comments*.—Reported (Banks *et al.*, 1932) in the Wichita National Forest as *Liobunum dorsatum* Say, 1821.

*Trachyrhinus favosus* (Wood), 1871

*Bibliography*.—Cokendolpher (1981).

#### Order SCORPIONES

##### Family BUTHIDAE Simon, 1879

*Centruroides vittatus* (Say), 1821

*Bibliography*.—Ewing (1928); Stahnke (1956); Stahnke and Calos (1977).

*Comments*.—Reported (Banks *et al.*, 1932) elsewhere in Oklahoma as *Centrurus carolinianus* (Palisot de Beauvois), 1805.

#### Order SOLPUGIDA

##### Family EREMOBATIDAE Roewer, 1934

*Eremobates simoni* Muma, 1970

*Bibliography*.—Muma (1970).

*Comments*.—Reported (Banks *et al.*, 1932) in Oklahoma as *Eremobates pallipes* (Say), 1823.

#### Order UROPYGIDA

##### Family THELYPHONIDAE Lucas, 1835

*Mastigoproctus giganteus* (Lucas), 1835

*Bibliography*.—Rowland and Cooke (1973).

*Comments*.—Although not known from the Refuge, a specimen was taken a few kilometers south in the City of Cache (Eagle Park). The specimen was dug up while building the foundation of the Ven-Am Research Center in the spring of 1962. After examination by the junior author, the specimen was released in the Park. This is the first record of the order in Oklahoma.

#### PROBLEMATIC SPECIES

##### Order ARANEAE

##### Family MICRYPHANTIDAE Bertkau, 1872

*Comments*.—The family Micryphantidae (=Erigoniidae) is in need of revision. Among the specimens collected in the Refuge are adults (males and females) of at least three species we are unable to identify to the generic level.

##### Family ARANEIDAE Simon, 1895

*Epeira displicata* Hentz, 1847

*Comments*.—One immature reported (Banks *et al.*, 1932) from the Wichita National Forest is the only record for the region. Levi (1974) stated *Epeira displicata* is a synonym of *Araniella displicata* (Hentz), 1847, but recorded no

specimens from Oklahoma. Until adults can be found in the Refuge, this species should be removed from the list. However, *E. displicata* should remain on the state list because adults are known from Stillwater (Bailey and Chada, 1968).

Family GNAPHOSIDAE Pocock, 1884

*Zelotes ater* Hentz, 1832

*Comments.*—The specimen reported (Banks *et al.*, 1932) from the Wichita National Forest is very questionable due to its immature state. Branson (1966) stated *Z. ater* is a synonym of *Zelotes subterraneus* (C. L. Koch), 1839. Both records should be removed from the Refuge list until adults can be captured.

Family THOMISIDAE Sundevall, 1833

*Xysticus gulosus* Keyserling, 1880

*Comments.*—The specimen reported (Banks *et al.*, 1932) from the Wichita Forest is immature. It is not *X. gulosus*, but might be *Xysticus triguttatus* Keyserling, 1880. The specimen(s) reported (Banks *et al.*, 1932) from Cleveland County could not be located. Other Oklahoma records (Branson, 1966, 1968) of *X. gulosus* are based also on immatures. *Xysticus gulosus* should be removed from the Refuge list until adults can be captured.

Family SALTICIDAE Blackwall, 1841

*Pellenes peregrinus* Peckham and Peckham, 1883

*Comments.*—The specimens reported (Banks *et al.*, 1932) from the Wichita National Forest are too immature for specific identifications. Branson (1966) considered this material to represent *Habronattus viridipes* (Hentz), 1846. As Branson (1966) never examined the specimens, *P. peregrinus* should be removed from the state list until adults can be captured.

*Phidippus howardi* Peckham and Peckham, 1896

*Comments.*—All specimens reported (Banks *et al.*, 1932) are too immature for specific identification. Edwards (in Richman and Cutler, 1978) considered *P. howardi* a junior synonym of *Phidippus audax* Hentz, 1845. *Phidippus howardi* should be removed from the state list.

*Phidippus podagrosus* Hentz, 1844

*Comments.*—All specimens reported (Banks *et al.*, 1932) except a male from Sand Creek, Osage County, are too immature for specific identifications. The male is *Phidippus dorsalis* Bryant, 1942, a new record for the state. Peckham and Peckham (1888) considered *P. podagrosus* a junior synonym of *Phidippus insolens* (Hentz), 1844, which is a *nomen dubium* (see Richman and Cutler, 1978; and comments under *Phidippus apacheanus* Chamberlin and Gertsch and *Phidippus texanus* Banks in the present publication). *Phidippus insolens* and *P. podagrosus* should be removed from the state list, but *P. dorsalis* should be added.

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