

**A RANGE EXTENSION OF THE PURSEWEB SPIDER  
*SPHODROS RUFIPES* IN EASTERN KANSAS  
(ARANEAE, ATYPIDAE)**

Little is known about the behavior or ecology of atypid spiders, aside from descriptions of tube-web construction and prey capture (McCook 1888, Poteat 1890, Bristowe 1958) and partial descriptions of the natural history of a few species (Enock 1885, Muma and Muma 1945, Coyle and Shear 1981). Gertsch and Platnick's (1980) excellent paper provides a much needed taxonomic revision of the group as well as known distributions and notes on natural histories of the Nearctic species of atypids.

Atypids are patchily distributed, though locally abundant. The areas of abundance are often difficult to locate and associate with climatic and ecological variables, making their occurrence difficult to predict. They are more common in the southern U.S., where they are found in forested areas with sandy soil, or soil with a moderate to low clay content. In these areas, sites with southern exposures, often along a stream or in fairly mesic situations, seem to be the most prevalent purseweb habitats (Bristowe 1933, Muma and Muma 1945, pers. comm. Teeter).

This note extends the range of *Sphodros rufipes* (Latreille) to the northwest of previous records and is the first record of the species in Kansas. Previously published distribution is from eastern Texas to northern Florida and northward to southern Illinois and Rhode Island (Gertsch and Platnick 1980). *S. bicolor* and *S. milberti* have recently been synonymized with *S. rufipes* (Gertsch and Platnick 1980).

Wandering adult males of *S. rufipes* have been found in two separate areas in Douglas County in northeastern Kansas, syntopically with *S. niger* (Fitch 1963, Gertsch and Platnick 1980). Males of *S. niger* and *S. rufipes* were captured in a 2:1 ratio during the five week study period in May-July 1983 in baffle-type pitfall traps (in prep. Morrow). The traps were placed at approximately 20-30 m intervals in mixed hardwood forests at the University of Kansas Natural History Reservation (NHR) in Douglas County, near Lawrence, Kansas and the Breidenthal Tract, also in Douglas County, 3 km north of Baldwin, Kansas. Traps were checked every other day at each site during the study period.

*S. rufipes* is absent from the list of spider species found on the NHR (Fitch 1963), however, a preserved specimen from the NHR was recently uncovered from a private collection, an adult male *S. rufipes*, which had been misidentified as *S. fitchi*. Adult males of *S. rufipes* and *S. fitchi* are easily confused. Both have a black cephalothorax and abdomen and red legs. The two species can be discriminated by the extent of the red coloration present on the legs. In males of *S. rufipes* the femora and all distal leg segments are completely colored carmine red. In males of *S. fitchi* the red coloration is limited to the dorsal surface of the distal ends of the femora and all distal leg segments. Proximally, the femora of *S. fitchi* are a darkish brown to black, the same color as the cephalothorax. The shape of the sternum and the pattern of the sigilla on the sternum is also distinctive in the two species. For a more detailed description of characters, see Gertsch and Platnick (1980). Voucher specimens of male *S. rufipes*

were sent to the American Museum of Natural History, New York, and the Museum of Comparative Zoology, Cambridge.

Both the NHR site and the Breidenthal Tract have mixed populations of *S. niger* and *S. rufipes*. The possible occurrence of *S. fitchi* is currently being investigated. Both sites are mixed hardwood forest, predominantly oak-hickory, with moderate understory vegetation. In 1982 over 100 upright tube-webs located at the bases of trees and shrubs had been marked at NHR and over 150 at the Breidenthal Tract. Of these, approximately 20% contained spiders which had been tentatively identified as adult females of *S. niger* (c.f., Fitch 1963, Beatty 1983). A May 1984 census indicated only 20% of the originally marked population at both sites was still present. Only one individual believed to be an adult female of *S. rufipes* has been found. Unfortunately, this individual escaped before a positive identification could be made. One adult female, believed to be *S. fitchi*, has been found on a forested slope adjoining the Breidenthal site.

Adult females and immatures of both sexes are not known to leave their tube-webs, except under extreme conditions. Wandering adult males may be found seasonally. Over 40 males of *S. niger* and 20 of *S. rufipes* were captured during a five week emergence in May-July 1983 at both locations. During the following year, 35 males of *S. niger* and 4 of *S. rufipes* were captured. This seems to be a large percentage of the population, given the total number of tube-webs marked, probably contributing to the decline in population density over the past two years. If these samples represent a typical emergence size, perhaps the total population is larger than indicated, or males are capable of dispersing over large distances (200 m). A mark, release and recapture experiment using males of *S. niger* proved inconclusive. Alternatively, males may have a more rapid maturation rate than presently suspected. A large number of medium sized tube-webs were found empty or abandoned following the emergence. Current data suggest that the 1983 emergence represents a peak year, possibly a cyclic occurrence, in a population of fluctuating size. Demographic evidence indicates a high mortality rate during extremely cold winters and hot summer drought conditions. These temperature extremes may be the primary factors limiting the ranges of these spiders.

A third species, *S. fitchi*, which had previously, though rarely, been collected at the NHR in or near grasslands was not collected in pitfall traps at this site. Advanced succession at the NHR could be responsible for a decrease in abundance of this species. Large, uninhabited tube-webs have been found in prairie and grassland areas at the NHR (c.f., Muma and Muma 1945). *S. fitchi* and *S. rufipes* may prefer more open woodlands or ecotone situations to dense, forested areas where *S. niger* is more common. Males of both *S. fitchi* and *S. rufipes* share distinct carmine red legs, an unusual coloration among atypids. This coloration may be associated with some form of mimicry or aposematic display advantageous to wandering males (Coyle and Shear 1981).

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**Willard Morrow**, Department of Entomology, University of Kansas, Lawrence, Kansas 66045 (Present address: University of Pennsylvania School of Veterinary Medicine, 3800 Spruce Street, Philadelphia, Pennsylvania 19104).

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