

DISPERSAL AGGREGATION OF *SPHODROS FITCHI* (ARANEAE, ATYPIDAE)

Observations of dispersal aggregations of mygalomorph spiderlings have been rarely reported in the literature. Spiderlings of the European purseweb, *Atypus affinis* Eichwald 1830 (Atypidae), were discovered climbing up vegetation on warm, spring days (Bristowe 1939). As several reached the top of a garden stake, the wind dislodged them and their draglines, which became attached to other objects. The young of another species of purseweb spider, *Sphodros rufipes* (Latreille 1829), performed similar preballooning behavior in the laboratory (Muma & Muma 1945). Coyle (1983) was fortunate in observing the dispersal of purseweb spiderlings in North Carolina. *Sphodros fitchi* Gertsch & Platnick 1980 is a purseweb spider found in the central plains states from Nebraska to Oklahoma and Arkansas (Gertsch & Platnick 1980). It appears to be the rarest of three species of *Sphodros* which occur in northeastern Kansas. Therefore, the natural history information of *S. fitchi* is limited to a few anecdotal observations (Fitch 1963; Guarisco 1988; Morrow 1985; Teeter 1984). This is the first report of a dispersal aggregation of spiderlings of this species.

At noon on 2 April 1995, a dispersal aggregation of immature *Sphodros fitchi* was discovered by the first author in the highest branches of a 1 m tall eastern red cedar (*Juniperus virginiana* L.) on the west campus of the University of Kansas in Douglas County, Kansas. The small tree was located at the edge of a lawn and second growth woods composed predominantly of osage orange trees (*Maclura pomifera* (Raf.) Schneid.) 3-5 m in height. A group of 14 immatures and two dense, silk mats, each 1 cm² in area, were seen on the tips of two branches. During 30 minutes of observation, the spiders slowly walked on the silk mats and the silk strands between the branches and the adjacent branch tips. Four appeared to let go, fell a few centimeters on draglines to lower branches, then slowly climbed back to the top. Ballooning behavior in *Sphodros* and other mygalomorphs consists of descending on a dragline until the force of the wind breaks it near its attachment point. Then the spider and

dragline are carried by the breeze (Coyle 1983). Therefore, the four observations may represent unsuccessful ballooning attempts. The sky was partly cloudy, the temperature was about 23 °C, and there were westerly gusty winds.

Later that day, we returned to the site, and the second author discovered a large, white silk tube attached to the base of the red cedar tree. No spiderlings were observed. The tube and the cedar trunk were each approximately 2.5 cm in diameter. The tube extended 17 cm up the side of the tree. The next day, the silk tube was excavated and it contained an adult *S. fitchi* female. No egg-sac or egg remains were found inside the tube, which was 33.5 cm in total length. The length of the female, including chelicerae, was 2.7 cm. The lengths of five spiderlings from the dispersal aggregation, including chelicerae and spinnerets, ranged from 2.25-2.50 mm. The average width of the prosoma at the anterior edge was 0.68 mm ($n = 5$, range 0.60-0.76). Two of the immatures were placed in vials containing moist soil and vertical twigs. Small silk tubes covered with soil particles were discovered the next day. One was located on the side of the vial and the second was located along a twig. The aerial portion of each tube was about 1 cm in length. The following day, the web along the twig was 2 cm in length.

The dispersal aggregation described here resembles those described by other authors. Although no actual ballooning was witnessed, the behavior of four spiderlings was consistent with that described by Coyle (1983). The immatures were capable of independent living, based on the construction of their own webs in captivity.

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