

AERONAUTIC SPIDERS WITH A DESCRIPTION OF A NEW SPECIES

BY C. R. CROSBY AND S. C. BISHOP

The earliest account of aeronautic spiders I have been able to find was published by Martin Lister in 1678 in his *Historie animalium Angliæ*, page 8. He writes:

“Sed quod omnem fidem superat; & de quo omnino nulla mentio apud antiquos aut recentiores est, Araneolos, aut mediæ certè ætatis & magnitudinis, nam adultos in aëre me nunquam observasse memini, fili auxilio se committere leni auræ, ascensúmque; in aërem pérque; summas nubes moliri: Illud certè verissimum est, eas longè extra conspectum meum evectos fuisse, etiamsi supra celsissimam Turrem aliquoties de industria contemplerer.

“Ad Octobrem verò mensem hanc exercitationem maximè frequentant; quamvis per totum annum, etiam mediâ brumâ, si quando per id tempus sol clarè splendescat, & tranquillus aër sit, hujus quidem ejaculationis non paucos effectus per agros pérque; sepes non rarè animadverti.”

In America the earliest recorded observations seem to have been made about 1715 by Jonathan Edwards, then of Windsor, Connecticut, but not published till 1829 in his collected works.* Edwards was then not over 12 or 13 years of age. He relates seeing small spiders sailing through the air attached to fine strands of gossamer. He also induced small spiders to take off from a stick held in the hand. He states that spiders fly only on fine days from the middle of August to the end of October. His account is illustrated by three small sketches showing how a spider may take to the air. As one reads this juvenile composition recording the lad's first-hand observations of nature made amid the glories of Indian Summer afternoons in old New England one cannot escape a pang of regret that instead of being America's first arachnologist he was destined to become the most

* This article was again published by E. C. Smyth in the *Andover Review* 13: 1-19, 1890, under the title, “The flying spider—observations by Jonathan Edwards when a boy.”

influential and powerful exponent in his generation of that pagan-Christian doctrine of the vileness and depravity of the human soul and a fervent believer in the wisdom and justice of eternal punishment and of the damnation of unbaptized infants. It was a loss to science and a doubtful gain for religion.

Observations by Darwin and others on spiders alighting on ships at sea indicate that they may be transported long distances through the air. There has been, however, very little information available as to the height to which they ascend. I was, therefore, very grateful for the opportunity to examine a collection of over nine hundred vials of spiders collected by airplane by Mr. P. A. Glick, of the U. S. Bureau of Entomology at Tallulah, Louisiana. The great majority of the specimens were young or so mutilated that specific determination was impossible. The following list includes only those specimens that could be determined to species.

Spiders collected by airplane at Tallulah, Louisiana, by P. A. Glick.

Family DICTYNIDÆ

Dictyna bellans Chamberlin

♂ 6:08 P. M. Oct. 3, 1930, 1000 ft.

Dictyna cruciata Emerton

♂ 2:08 P. M. May 26, 1930, 2000 ft.

♂ 2:26 P. M. June 25, 1930, 200 ft.

Family OECOBIIDÆ

Oecobius parietalis Hentz

♀ 2:32 P. M. Nov. 4, 1930, 1000 ft.

Family THERIDIIDÆ

Crustulina guttata Wider

♀ 2:03 P. M. Mar. 19, 1931, 200 ft.

Theridion globosum Hentz

♂ 11:09 A. M. Apr. 12, 1930, 1000 ft.

Family ARGIOPIDÆ

Subfamily Linyphiinæ

Group Erigoneæ

Ceraticelus creolus Chamberlin

♂ 8:32 A. M. July 19, 1929, 200 ft.

Ceraticelus limnologicus Crosby & Bishop

♂ 1:51 P. M. Mar. 12, 1930, 5000 ft.

Ceratinopsis atolma Chamberlin

♂ 2:43 P. M. Apr. 5, 1930, 3000 ft.

Erigone tridentata Emerton

♂ 3:01 P. M. Apr. 5, 1929, 1000 ft.

♀ 1:52 P. M. June 29, 1929, 2000 ft.

♂ 4:19 P. M. Dec. 10, 1929, 200 ft.

♂ 11:35 A. M. Jan. 4, 1930, 200 ft.

♂ 2:30 P. M. Feb. 28, 1930, 200 ft.

♂ 10:09 A. M. Apr. 5, 1930, 200 ft.

♂ 9:31 A. M. Apr. 12, 1930, 200 ft.

♂ 11:20 A. M. Apr. 12, 1930, 200 ft.

♂ 2:07 P. M. Apr. 14, 1930, 5000 ft.

♂ 11:18 A. M. Apr. 21, 1930, 200 ft.

♀ 2:56 P. M. Apr. 22, 1930, 1000 ft.

♂ 8:52 A. M. May 26, 1930, 200 ft.

♂ 1:07 P. M. May 27, 1930, 2000 ft.

♂♀ 2:16 P. M. Dec. 1, 1930, 2000 ft.

♂ 2:25 P. M. Apr. 6, 1931, 5000 ft.

Erigone autumnalis Emerton

♂ 3:48 P. M. Apr. 17, 1929, 1000 ft.

♂ 2:47 P. M. May 3, 1929, 2000 ft.

♂ 3:43 P. M. Jan. 24, 1930, 200 ft.

♂ 11:28 A. M. Mar. 26, 1930, 200 ft.

♂ 9:20 A. M. Apr. 12, 1930, 200 ft.

♂ 1:46 P. M. Apr. 12, 1930, 2000 ft.

♂ 3:48 P. M. May 7, 1930, 2000 ft.

♂ 3:13 P. M. Nov. 18, 1930, 1000 ft.

♂ 1:52 P. M. Nov. 28, 1930, 2000 ft.

♂ 1:30 P. M. Nov. 28, 1930, 200 ft.

♂ 1:54 P. M. Dec. 1, 1930, 200 ft.

♂ 9:38 A. M. Dec. 2, 1930, 1000 ft.

♂ 3:09 P. M. Dec. 2, 1930, 2000 ft.

♂ 11:18 A. M. Mar. 18, 1931, 200 ft.

♂ 2:14 P. M. Mar. 19, 1931, 1000 ft.

♂ 2:14 P. M. May 13, 1931, 1000 ft.

♂ 2:03 P. M. May 13, 1931, 2000 ft.

♂ 8:42 A. M. July 13, 1931, 1000 ft.

Erigone barrowsi Crosby & Bishop

♂	8:35 P. M.	Aug. 5, 1929,	3000 ft.
♂	11:33 A. M.	Aug. 7, 1929,	2000 ft.

Pelecopsis moestus Banks

♀	10:02 A. M.	Apr. 8, 1930,	1000 ft.
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"Tmeticus" parvus Banks

♂	2:51 P. M.	Jan. 4, 1930,	200 ft.
♂	3:10 P. M.	Jan. 4, 1930,	1000 ft.
♂	10:18 A. M.	Mar. 11, 1930,	200 ft.
♂	10:15 A. M.	May 28, 1930,	1000 ft.
♂	9:01 A. M.	June 2, 1930,	2000 ft.
♂	11:18 A. M.	June 9, 1930,	200 ft.
♂	2:25 P. M.	Dec. 17, 1930,	1000 ft.
♂	3:00 P. M.	Jan. 29, 1931,	200 ft.
♂	9:20 A. M.	June 3, 1931,	5000 ft.
♂	9:39 A. M.	July 10, 1931,	1000 ft.

Walckenaera vigilax Blackwall

♂	1:58 P. M.	Feb. 26, 1930,	2000 ft.
♂	2:16 P. M.	Mar. 12, 1930,	1000 ft.

Group Linyphiæ

Linyphia coccinea Hentz

♀	2:06 P. M.	Feb. 7, 1930,	200 ft.
♀	11:27 A. M.	Mar. 12, 1930,	200 ft.
♂	11:20 A. M.	Apr. 12, 1930,	200 ft.

Linyphia communis Hentz

Young	10:39 A. M.	Feb. 1, 1930,	1000 ft.
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Microneta meridionalis new species (Description appended)

♂	1:32 P. M.	Oct. 7, 1929,	3000 ft.
♂	11:07 A. M.	Jan. 31, 1930,	20 ft.
♂	10:29 A. M.	Apr. 25, 1930,	1000 ft.
♂	2:04 P. M.	June 17, 1930,	3000 ft.
♂	1:41 P. M.	Nov. 28, 1930,	1000 ft.
♂	2:09 P. M.	Dec. 19, 1930,	2000 ft.
♂	1:52 P. M.	Jan. 2, 1931,	2000 ft.
♂	3:22 P. M.	Jan. 2, 1931,	1000 ft.
♂	3:00 P. M.	Jan. 29, 1931,	200 ft.
♂	2:40 P. M.	June 4, 1931,	2000 ft.

Microneta micaria Emerton

♀	3:04 P. M.	Apr. 5, 1930,	1000 ft.
♂	3:27 P. M.	May 26, 1930,	1000 ft.

Subfamily Tetragnathinæ

Mimognatha foxi McCook

♂	2:18 P. M.	Apr. 21, 1930,	3000 ft.
♂	10:53 A. M.	Mar. 19, 1931,	200 ft.

Subfamily Argiopinae

Araneus stellatus Walckenaer

Young	11:14 A. M.	Dec. 13, 1930,	1000 ft.
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Mangora placida Hentz

♀	2:51 P. M.	Jan. 4, 1930,	200 ft.
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Family SALTICIDÆ

Dendryphantes capitatus Hentz

♂	8:22 A. M.	Sept. 11, 1929,	20 ft.
♂	8:26 A. M.	Oct. 14, 1929,	2000 ft.
♂	10:31 A. M.	Mar. 24, 1931,	1000 ft.

Synemosyna formica Hentz

♂	3:21 P. M.	Sept. 18, 1929,	3000 ft.
♂	10:41 A. M.	Oct. 13, 1930,	20 ft.

Wala palmarum Hentz

♂	2:30 P. M.	July 20, 1931,	1000 ft.
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Microneta meridionalis new species Crosby & Bishop

MALE. Length, 1.5 mm. Described from a fairly light specimen. Cephalothorax dusky over light orange yellow, viewed from above broadly oval, rounded across the front with the anterior eyes in profile; viewed from the side, moderately ascending behind, then gently arched to the eyes. Clypeus gently concave, slanting forward. Sternum dark gray over pale yellow. Endites and labium pale yellow strongly suffused with gray. Chelicerae pale orange yellow lightly suffused with gray. Legs yellowish. Abdomen light gray crossed by four or five light broad chevrons.

Posterior eyes in a straight line, equal, the median separated by the radius and a little nearer the lateral. Anterior eyes surrounded by black in a straight line, the median smaller than the lateral, separated by the radius and a little nearer the lateral.

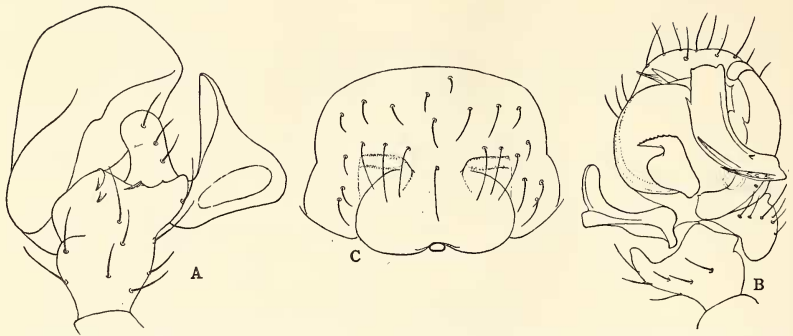


FIGURE 1. *Microneta meridionalis*. A, ♂, right palpus, dorsal view; B, same, ventral view; C, ♀, epigynum.

The palpus is of the same type as in *unimaculata*. The femur and patella are much the same as in that species. The tibia is depressed before the tip and widened on the lateral angle, dorsally there is a short ridge ending in a black tooth directed backward and followed behind by a more slender tooth; laterally from this ridge the margin is broadly concave, armed with a small triangular tooth a little back of the margin in the middle and a much smaller one nearer the lateral angle. Basally the cymbium is slightly produced into two rounded lobes, the lateral one distinctly granulate. The paracymbium is of the same type as in *unimaculata* but it is wider at the bend and the end is shorter and wider. The embolus is curved and lies across the bulb; it is grooved in the basal half; the lower flange is serrate, the last two teeth being long and spine-like, the upper flange has one small tooth; the duct opens on a minute tubercle on the inner face of the embolus on the lateral bend; beyond it the embolus is continued into a rounded point. The radix is crescent-shaped, relatively longer than in *unimaculata* and the rounded projections on its inner face more slender. The median apophysis has the black tooth a little stouter and the margin of the thin part is smooth, not frayed. The terminal apophysis is shorter and broader with the lateral side broadly rounded, the thinner tip is obliquely triangular with the edge minutely serrate.

FEMALE. Length, 1.7 mm. Similar to the male in coloration, a distinct white spot just above the spinnerets. Femora of legs black at base. Last two segments of palpus somewhat enlarged and nearly black. The epigynum is of the same type as in *unimaculata* but somewhat more protuberant. The basal part of the scape before the enlargement is narrower and the lateral cavities turn strongly inward at this point.

Holotype, male; allotype, female, Lucedale, Mississippi. Oct. 16, 1930 (Henry Dietrich).

Louisiana: Tallulah, May 25, 1934, 1 ♂ (Folsom); June 19,

1934, 3 ♂, 1 ♀ (Folsom). For the other Tallulah records see the preceding list.

Mississippi: Lucedale, Jan., 1931, 1 ♂; Dec. 4, 1930, 1 ♂ (Dietrich); State Line, Mar. 19, 1931, 1 ♂, 5 ♀ (Dietrich).

Florida: Rock Bluff, April 4, 1927, 1 ♂ (Hubbell); Bunnell, Feb. 21, 1927, 2 ♂ (Leonard); Micanopy, Mar. 6, 1927, 1 ♂ (Barrows).

Virginia: Franklin, Notaway River bottom, Oct. 28, 1926, 1 ♂.

