

## *Habronattus carolinensis* (Peckham & Peckham 1901) (Araneae: Salticidae) from the Piedmont of South Carolina<sup>1</sup>

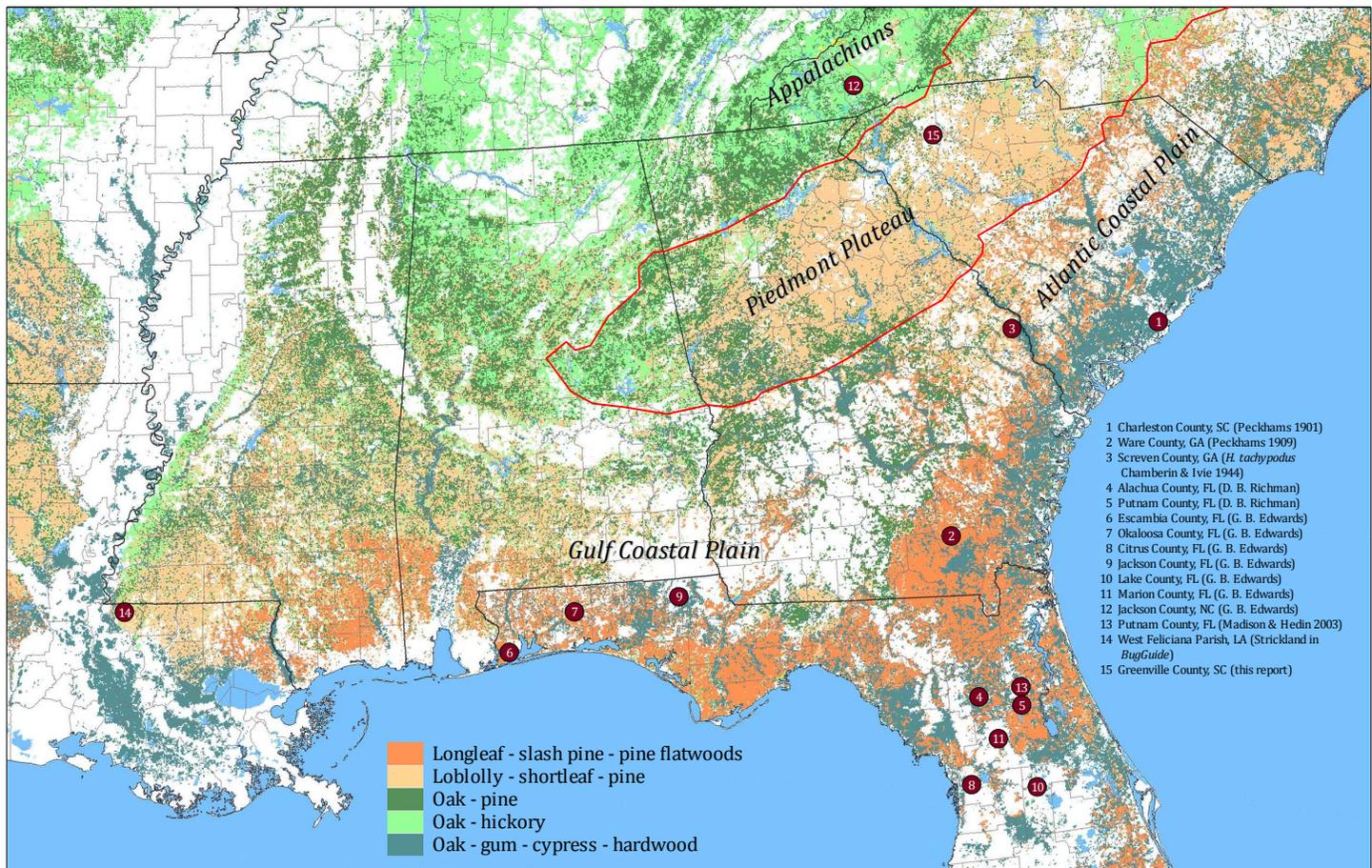
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Recently (1-2 MAY 2012) I found two adult female *H. carolinensis* (Peckham & Peckham 1901) near the ground, in the understory of the oak-hickory forest of Neely Farm in southern Greenville County, South Carolina (Figure 1, locality 15). Photographs of these spiders are shown in Figures 2 and 3.



**Figure 1.** Locality records for *Habronattus carolinensis* (Peckham & Peckham 1901). Localities 1 and 3-7 were listed in Griswold's 1987 revision of *Habronattus*. Locality 7 refers to Sikes Airport in Okaloosa, *not* Santa Rosa County as reported by Griswold. Locality 15 (elevation ~300 m), in the *Piedmont Plateau* (outlined in red) of southern Greenville County, South Carolina, is based on this report. Almost all earlier records were associated with either the Gulf or Atlantic Coastal Plains. Colors on this map correspond to classes of forest cover used by the USDA Forest Service in their *Forest Inventory and Analysis Program* based on Landsat data collected during the 1991 growing season (Zhu & Evans 1994). The longleaf-slash pine forests shown here are also known as pine flatwoods, and include small hardwood forests and prairies (Davis 1967). This map was generated with the *National Atlas Mapmaker* tool (<http://nationalatlas.gov/mapmaker>).



**Figure 2.** Adult female (#1) *Habronattus carolinensis* from southern Greenville County, South Carolina (1 MAY 2012). This spider was found making turns like those shown here on the leaf of a small (~ 2cm) seedling just above the ground. When placed on a larger plant, or on a dry fallen leaf, this spider moved continuously, but appeared to be much less concerned with detection or flight when directly on the ground. As shown here, she would climb to the top of a small pebble or clod of earth, and make a series of survey turns (sequence 1-9 above) from this *slightly* elevated position. The *salmon color* of this individual is close to the original description (Peckham & Peckham 1901, 1909), matching the red clay soil that is characteristic of this region. Bold markings also help to break up the outline of this spider, which cannot be detected at any appreciable distance by a human observer unless it moves. Much remains to be learned about this ground-dwelling life style. Each scale bar = 1.0 mm.



**Figure 3.** Adult female (#2) *Habronattus carolinensis* from southern Greenville County, South Carolina (2 MAY 2012). This spider was found on a vertical wooden wall near ground level. **1-3**, This sequence shows some of the positions assumed by this spider during a series of small turns in place. The *chestnut-colored* scales under the AME, and the dark spots under the ALE, may serve to conceal the eyes of this spider from another spider or insect, or they may reduce glare (generally light reflected from horizontal surfaces). Scales covering the ocular quadrangle are lighter and more uniform than those of #1. **4-9**, Other views of this spider. Patterns are similar to those of female #1, but scales are darker brown and tan instead of salmon-colored, making this spider easier for a human observer to see on a red clay soil surface. Each scale bar = 1.0 mm.

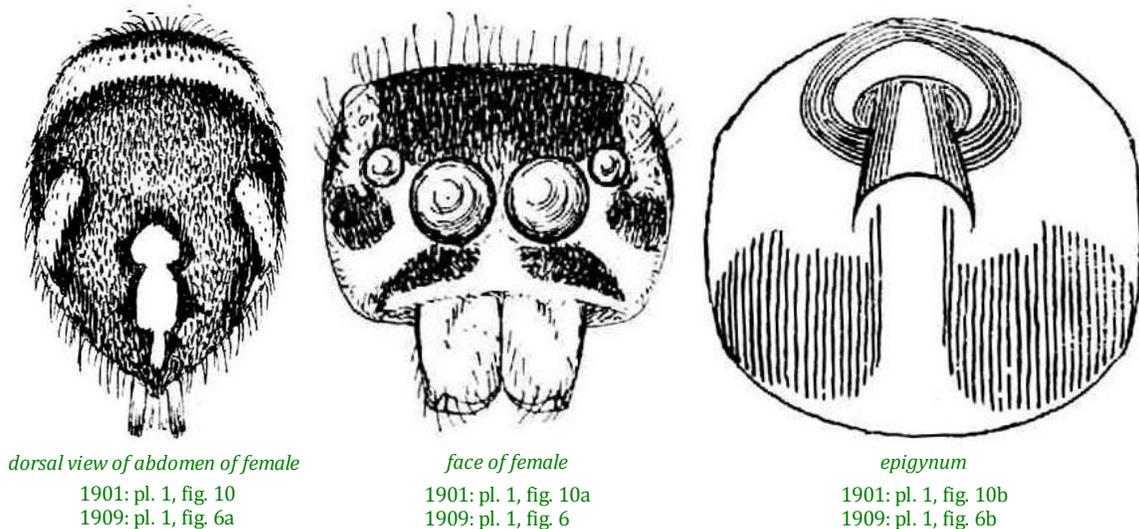
*H. carolinensis* has been found primarily in the understory or leaf litter of well-drained or xeric forests, including the pine flatwoods (*Sandhill-Turkey Oak-longleaf pine* association) of Northern Florida (G. B. Edwards, pers. comm.). The spiders shown here were found near ground level on a well-drained forest slope in association with White Oak (*Quercus alba*) Southern Red Oak (*Q. falcata*), Pignut Hickory (*Carya glabra*) and Virginia Pine (*Pinus virginiana*).

The Peckhams (1901) originally named and described *Pellenes carolinensis*, based on two females collected in Charleston, South Carolina:

(p. 206) The abdomen is velvety black, with markings of a bright pinkish and salmon-color. Clypeus white, with a chestnut-colored band running outward from each of the middle eyes, not reaching the margin. The third leg is longer than the fourth by little more than the tarsus. From South Carolina.

(p. 219) A distinctly marked, black and salmon-colored species. ♀. Length, 5.5-7 mm. Legs, 3412, first and second a little stouter than the others. The quadrangle of the eyes is equally wide in front and behind, and is one third wider than long. The front row is straight, with the middle eyes subtouching, and twice as large as the lateral, which are separated from them. The maxillae are rounded, and are more than twice as long as the labium. The clypeus is two-thirds as wide as the middle eyes. The hairs on the cephalic part are bright yellowish-red over the first row of eyes, and silvery further back. There is a scalloped, salmon-colored band behind the dorsal eyes. The lower margin has a black line between two white lines. In our specimens the other parts of the cephalothorax are rubbed bare, excepting the clypeus, which is white in a band along the margin, in a large spot under each lateral eye, and in a narrow band which begins just between the middle eyes, and widens as it passes downward to the margin, and which has an oblique chestnut-colored band running outward from below each of the middle eyes. The abdomen is velvety black, with markings of a bright pinkish and salmon-color, there being a wide transverse band near the front end, an oblique band on each side, further back, two oblique marks in the middle and two irregular, sometimes continuous spots on the posterior part of the dorsum, and two dots near the spinnerets. The pattern is complicated by a sprinkling of salmon-colored hairs, which surround the posterior part of the dorsum. The legs are yellowish, and are covered with white and salmon-colored scales. *Carolinensis* bears a general resemblance to *viridipes* but is distinguished by the chestnut-colored hairs on the clypeus. We have several females from Charleston, S. C.

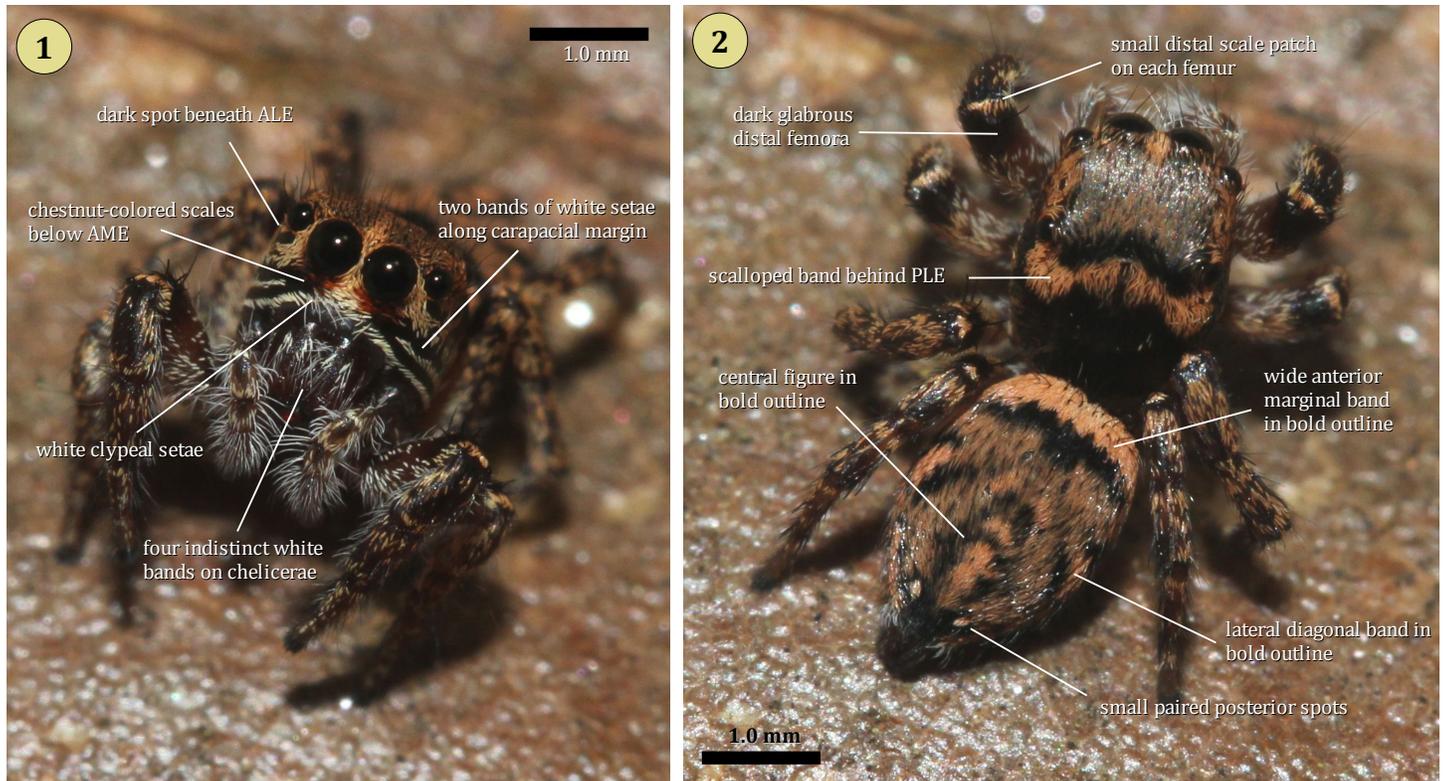
When the Peckhams republished this description in 1909 with the same figures (Figure 4), they listed a second locality of Waycross (Ware County), Georgia.



**Figure 4.** Drawings that accompanied the original description of the female *Pellenes carolinensis* by the Peckhams (1901, 1909). The scale pattern of the dorsal abdomen with its wide anterior marginal band, and the patches of *chestnut-colored* scales under the AME were depicted. The distinctive *scalloped, salmon-colored band behind the dorsal eyes* and the *black line between two white lines* of the lower margin of the carapace were only described in the text.

In 1944, Chamberlin & Ivie placed this spider in the genus *Habronattus*, and described the male of *Habronattus tachypodus* from nearby Screven County, Georgia. Griswold (1987) examined the Peckhams' two female syntypes from Charleston, South Carolina, and recognized *H. tachypodus* Chamberlin & Ivie 1944 as the "male holotype" (should be *allotype*) of *H. carolinensis*. Since its discovery, there have been few published records of this spider. Most have been found in association with the Atlantic and Gulf Coastal Plains of the southeastern United States (Figure 1). Edwards & Hill (1978, 2008) published photographs of both sexes of *H. carolinensis* from an open, xeric woodland habitat in northern Florida.

Most *Habronattus* species are known only from the males, and many of the features of the generally more cryptic females (*e. g.*, a pair of small posterior opisthosomal spots) are not particularly helpful when it comes to identification of a particular species within this large genus. *H. carolinensis* is unusual in that it was described from female specimens. As noted by the Peckhams (1901, 1909), their specimens were rubbed and not all of the scale patterns could be described. A guide to some of the more useful field marks of living and intact females is presented in Figure 5.



**Figure 5.** Field marks of female (#1) *Habronattus carolinensis*. Most of these were described if not figured by the Peckhams. **1**, Facial view. The lower white marginal band of the carapace is continuous with the white setae of the clypeus. Patches of chestnut (dark red-orange) colored scales below the AME are characteristic of this species. In the two females that I observed, *small* (not as large as those figured by the Peckhams) spots were present under the ALE. **2**, Dorsal view. Females of a number of different *Habronattus* species have the small pair of posterior opisthosomal spots (scale groups) shown here. The wide anterior marginal band of the opisthosoma, and the scalloped band behind the PLE, are both offset by dark areas. Only one of the lateral diagonal bands of the opisthosoma can be seen in the view. One or two smaller lateral bands may be present behind this one (see Figures 2 [4] and 3 [9]).

### Acknowledgments

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