

NOTES ON *EPEIRA PENTAGONA* HENTZ.

BY ELIZABETH B. BRYANT AND ALLAN F. ARCHER.

Among the spiders described by Hentz from 1842 to 1850 are several that have never been recognized by later collectors. One of these is *Epeira* ? *pentagona*. This species, which the junior author has found rather common in the last summer in Alabama, proves to be identical with *Cyrtophora tuberculata* Keyserling¹ (1893) from Florida. The latter was wrongly placed generically and now becomes a synonym of *pentagona*. Related species recorded from the West Indies, Venezuela and Central America by Simon and O. P. Cambridge have been referred with *tuberculata* to the genus *Dolichognatha* Cambridge, the genotype of which is from Ceylon. According to Simon², this latter species spins a web in the form of a horizontal sheet, under which the spider stands in a manner similar to that of *Linyphia*. Since *pentagona* differs from the Ceylonese genotype in the form of web, as well as in several important structural characters, the following genus is erected for it here.

Nicholasia Gen. nov.

Cephalothorax short, cephalic portion very high; eyes, anterior row weakly recurved, eyes equidistant, a.m.e. largest of the eight, posterior row straight, p.m.e. smallest of the eight, touching and widely separated from p.l.e., lateral eyes on separate tubercles separated by a diameter of p.l.e.; mandibles two-thirds as long as cephalothorax in both sexes, no boss, narrow, slightly excavate on inner margin and the tips slightly widened, inferior margin of the fang groove with two teeth; labium much wider than long with tip truncate; abdomen short, very high at base,

¹ Die Spinnen Amerikas, 4, Epeiridae, p. 265, pl. 14, fig. 197.

² Histoire Naturelle des Araignées, 1894, 1, p. 743.

globose with two pairs of widely separated tubercles; in male on anterior femora a ventral basal median row of short spines.

Genotype: *Epeira* ? *pentagona* Hentz.

The genus is named in honor of Nicholas Marcellus Hentz, the founder of American araneology. *Nicholasia* is separated from *Dolichognatha* O. P. Cambridge by the very broad truncate tip of the labium, fewer teeth on the inferior margin of the mandibles and by the male palpus which has a dorsal apophysis on the basal third of the cymbium and a much simpler palpus. *Dolichognatha tigrina* Simon from Venezuela and St. Vincent probably belongs to this genus since it has a dorsal apophysis on the cymbium and a very similar palpus.

***Nicholasia pentagona* (Hentz)**

Figure 1

Epeira ? *pentagona* Hentz, Journ. Boston Soc. Nat. Hist., 1850, 6, p. 18, pl. 3, fig. 1; reprint, p. 120, pl. 14, fig. 1. ♀

Cyrtophora tuberculata Keyserling, Die Spinnen Amerikas, 1893, 4, Epeiridæ, p. 265, pl. 14, fig. 197. ♀.

Female. Length, 3.0 mm., ceph. 1.5 mm., abd. 2.0 mm. long, 2.1 mm. high.

Cephalothorax pale yellow, cephalic portion dark, posterior lateral margins with a narrow dark line, cephalic portion very high, strongly arched, narrow, lateral margins parallel, no thoracic groove; eyes, anterior row weakly recurved, eyes equidistant, separated by more than a radius of a.m.e., a.m.e. largest of the eight, posterior row slightly shorter than anterior, straight, p.m.e. smallest of the eight, touching, p.l.e. slightly smaller than a.l.e., lateral eyes on separate tubercles, not connected and eyes separated by a diameter of p.l.e.; clypeus less than a diameter of a.m.e.; quadrangle of median eyes wider in front and higher than wide; mandibles brown, vertical, very long and narrow, two-thirds as long as cephalothorax, no boss, tips slightly divergent, inner margin near tip excavate, with a few hairs on front surface, fang groove slightly oblique, inferior margin with two teeth; labium much wider than

long, tip truncate, rebordered; maxillæ more than twice as long as labium, slightly divergent, tips widened; sternum triangular, pale, mottled with dark gray; abdomen dark, very high at base, short and blobose with two pairs of widely separated conical angles, slightly chitinized, first pair fully two-thirds from base, venter dark with a few pale spots; legs, 1-2-4-3, anterior pairs longest, dark with pale rings at base and middle of tibiæ, posterior pairs with femora pale except for a dark ring at tip, spines slender and inconspicuous, I pair, femur, dorsal, 1 median, 3 prolateral, ventral, 0, patella, 1 at tip, tibia, dorsal, 2, basal and median, prolateral, 2, retrolateral, 2, ventral, 0, metatarsus, ventral, 1 prolateral at base, II pair, femur, 0, patella, 0, tibia, dorsal, 1 median, retrolateral, 2, ventral, 0; epigynum a transverse elongate oval, fully three times as

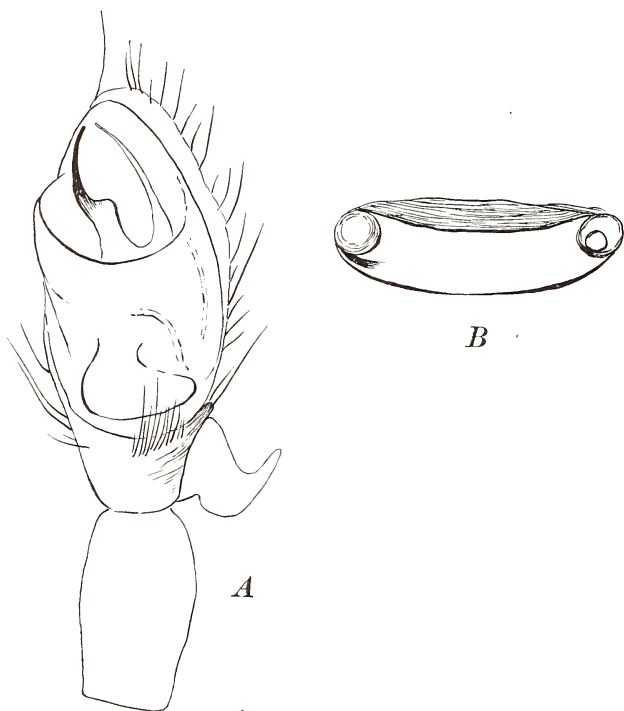


Fig. 1. *Nicholasia pentagona* (Hentz). A. Ventral view of left palpus (♂). B. Ventral view of epigynum (♀).

long as wide, margins heavily chitinized, with small dark dots in outer corners, area between convex and white.

Male. Length, 2.4 mm., ceph. 1.5 mm., abd., 1.2 mm.

Coloring same as in female, cephalic portion higher; eyes same as in female; mandibles longer and narrower, slightly excavate on inner margin and tips more divergent, front surface granular, no boss, fang groove oblique, one large blunt tooth probably on inner margin near median edge; labium, maxillæ and sternum same as in female; abdomen pale with dark gray blotches, short, globose with two pairs of widely separated conical angles more pronounced than in female and the tips plainly corneous; legs paler than in female and the pale rings wider, spines longer and more conspicuous, I coxa not modified, anterior femora with a ventral median row at base of 4 or 5 small, short, stout spines, each from a raised base; palpus pale, short and rather small, little longer than mandibles, a large dorsal lobe, semi-transparent, protruding from base of cymbium with prolateral margin rolled and ending in a hook, tibia longer than patella, cymbium dark, three times as long as wide, embolus and conductor confined to distal third, conductor black, curved and enlarged near origin, embolus colorless, straight and slender, placed between conductor and cymbium, basal third of bulb constricted.

The Hentz collection of spiders has disappeared and nothing remains but a few pins and labels.

Neoholotype ♀ Alabama; Tuscaloosa, 5 August 1939, (Archer).

Allotype ♂ Alabama; Tuscaloosa, 5 August 1939, (Archer).

The web of *Nicholasia pentagona* is difficult to observe in minute detail because of the poorly lighted locations in which it is found. It is a small web, barely $1\frac{1}{2}$ inches in greatest diameter, and it is rather delicate. It is a horizontal orb-web, usually having four foundation lines and four radiating lines extending from a weakly defined hub. There are a varying number of spirals, usually less than a dozen. One foundation line connects terminally or centrally with a horizontal line outside of the web. The horizontal line extends between two walls of the shelter. From it hang two threads which become fused into a single thread,

and from the thread hangs a silk-covered cord into which is incorporated the egg sacs. The cord is covered with debris consisting of fragments of bark, stems and leaves, as well as sand, humus, and small faeces. Occasionally the corpse of a victim is included in the mass. The male makes a cord that is an amorphous mass of debris. Its web is similar to that of the female, and is often located near that of the latter.

The spider ordinarily takes its station at the lower end of the cord, and is almost completely invisible against its background. When disturbed it draws the loose end of the cord together in a U-shaped loop, but seldom abandons it unless the cord is removed from place. Only once was the spider seen under the hub of the web, probably attracted there by its prey. Its food evidently consists of small Hemiptera and Diptera.

Seasonal records show that the females are adult from June to November. The males have been found only during the period extending from late July to early October. Spiderlings seem to appear in October.

Habitats: This spider is apparently confined to forest cover. Its habitats are largely limited areas within the vicinity of streams, both permanent and intermittent, near bodies of water, and in some cases in swamps that are not subject to high water. Its ecological situations are as follows: Steep slopes of narrow valleys and ravines; very shallow ravines having a negligible slope; bluffs of large creeks; generally distributed in woods having gradual or gentle slopes. It does not prosper in areas frequently burned over. It occurs in the following types of timber cover: Mixed mesophytic hardwoods; evergreen-deciduous hardwoods; oak-hickory; oak-pine on slopes; gum swamps; hammock woods, especially the type located on the summits of low bluffs above the Mobile Delta.

Nicholasia pentagona prefers no special species of tree, providing adequate shelter is present. Its habitat stations are as follows: webs located in scars at bases of trees (gums, magnolias, at least nine species of oaks, tulip poplar, sweetgum, pines); between the roots of beech trees; in hollows along the sides and at the ends of all sorts of rotting

logs (*Passalus cornutus* stage) ; in undercuts of sandstone and conglomerate ledges ; in undercuts of eroding stream banks. In one instance it was found on a low bank formed by transported silt collected at the base of an old wire fence in second-growth woods on a gradual slope (Andalusia, Ala.). Often associated with this spider are species of *Theridion* and sometimes *Theridiosoma radiosa* McCook.

DISTRIBUTION

This spider occurs widely in Alabama having been taken near the four corner of the state. It seems to be confined to no special climatic complex or physiographic province, for it has been found in the Coastal Plain, Piedmont, and Appalachian Plateaus.

In the following records of distribution, unless otherwise indicated, specimens are females except where noted. All dates are recorded for 1939.

Baldwin Co.; Jackson Oak, Aug. 31; Bay Minette, Aug. 28. Butler Co.; Searcy, Sept. 1. Chilton Co.; Verbena, Oct. Covington Co.; Andalusia; Red Level, Aug. 27. Dallas Co.; Valley Creek State Park. Escambia Co.; Brewton, Aug. 29. Hale Co.; Moundsville. Houston Co.; Chattahoochee State Park, Oct. 15. Jefferson Co.; Morris, ♂, Sept. 7; Cooley Creek, ♂, Oct. 2. Lawrence Co.; Black Warrior National Forest, June 11-15. Lee Co.; Chewacla State Park; Opelika. Madison Co.; Monte Sano, ♂, Sept. 29. Morgan Co.; Trinity Mountain. Shelby Co.; Calera. Tuscaloosa Co.; Tuscaloosa, ♂, Aug. 5; Yellow Creek. Winston Co.; Black Warrior National Forest.

