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## NORTH AMERICAN AGELENIDAE OF THE GENUS *CORAS* SIMON

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This review of North American spiders of the genus *Coras* Simon is based principally on collections deposited in the American Museum of Natural History, Museum of Comparative Zoölogy, United States National Museum, as well as the private collections of Dr. B. J. Kaston and the author. Types and paratypes of the several described species are deposited in the American Museum of Natural History. Paratypes are in the collections of the Museum of Comparative Zoölogy, the United States National Museum, and in the collections of Dr. Kaston and the author.

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### HISTORY OF THE GENUS

The genus *Coras* was established by E. Simon in 1898 (Hist. Nat. Araign., 1898, vol. 2, p. 258) for the species *Tegenaria medicinalis* Hentz. Until 1925 when R. V. Chamberlin (1925, Proc. Biol. Soc. Washington, vol. 38, pp. 129-134) recognized the congeneric characters of *Caelotes juvenilis* Keyserling and *Coelotes montanus* Emerton and described a fourth species, *Coras taugynus* Chamberlin, only the genotype was referred to the genus. In 1940 W. M. Barrows (1940, Ohio Jour. Sci., vol. 40, no. 3, p. 130, fig. 1) described a fifth species, *Coras cavernorum* Barrows, and in 1944 the

author (1944, Amer. Mus. Novitates, no. 1257) described three others, *Coras angularis* Muma, *Coras crescentis* Muma, and *Coras parallelis* Muma. Six additional species are described in this paper.

Chamberlin, in his 1925 paper entitled "Notes on North American spiders heretofore referred to *Coelotes*" (1925, Proc. Biol. Soc. Washington, vol. 38, pp. 119-124), separated most of the species into the genera *Coras* Simon and *Wadotes* Chamberlin and placed one or two in synonymy in the genus *Cicurina* Menge. The species *Coelotes exaptus* Banks, described in 1898 (1898, Proc. California Acad. Sci., vol. 1, no. 7, p. 231, pl. 14, fig. 27) appears to have been overlooked by him. A study of the description of *exaptus* reveals several characters such as eye arrangement, leg spination, and lack of anterior lateral tubercles on the epigynum that would exclude it from the genus *Coras*. Another species, *Coelotes plumarius* Bishop and Crosby (1926, Elisha Mitchell Sci. Soc., vol. 41, nos. 3, 4, p. 200, fig. 50), described after Chamberlin's study, is a female of *Tegenaria derhami* Scopoli.

### NOTES ON SYNONYMY

Hentz's original indication of *Tegenaria medicinalis* (1821, Jour. Acad. Nat. Sci. Philadelphia, vol. 2, pt. 1, p. 53, pl. 5, fig. 1a, b) gives a fairly accurate general description and figure of the spider later placed by Simon in the genus *Coras*. Later (1847, Jour. Boston Soc. Nat. Hist., vol. 5, p. 463, pl. 24, fig. 21) Hentz further described and figured the species and, although the drawings of the eyes, male palpus, and endites and chelicerae represent *medicinalis*, the painting of the complete spider appears to be from a specimen of *Tegenaria derhami* Scopoli. In his sup-

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plement (1866, Proc. Boston Soc. Nat. Hist., vol. 11, p. 107, fig. 110), which was edited by S. H. Scudder, Hentz figured the details of the palpus of *medicinalis*. These figure and descriptions with the unfortunate exception of the 1847 painting definitely place the species *Coras medicinalis* Hentz.

Chamberlin in his 1925 paper recognized the validity of *medicinalis* and placed *Caelotes urbanus* Keyserling and *Caelotes lamellosus* Keyserling in synonymy with it. Keyserling's description and figures of *urbanus* (1887, Verhandl. Zool.-Bot. Gesellschaft. Wien, p. 467, pl. 6, fig. 31, 31a) clearly represent *medicinalis*. A careful study of material from Virginia, Pennsylvania, and Minnesota, the localities cited by Keyserling in his description of *lamellosus* (*ibid.*, p. 469, pl. 6, fig. 30, 30a, 30b), indicate, however, that this species is distinct and must be returned to its specific status.

The relegation to synonymy with *Coras juvenilis* (Keyserling) of *Coelotes fidelis* Banks proposed by Chamberlin in 1925 after his study of the immature female holotype is followed in this paper. A comparative study of Keyserling's epigynal figure of *juvenilis* (1881, Verhandl. Zool.-Bot. Gesellschaft. Wien, vol. 31, p. 288, pl. 11, fig. 13), of specimens of *Coras montanus* (Emerton), and of Barrows' figure of *Coras cavernorum* (1940, Ohio Jour. Sci., vol. 40, no. 3, p. 130, fig. 1) indicates a close relationship. However, until more material is available and more extensive study can be made, Chamberlin's placement of *juvenilis* must stand and *cavernorum* must be considered valid.

In 1944 (Amer. Mus. Novitates, no. 1257, pp. 3, 5) the author described *Coras angularis* Muma from a single male and *Coras crescentis* Muma from a female. A comparison of the types of these two species with males and females of *Coras alabama*, new species, and *Coras kisatchie*, new species, both described in this paper, shows that they represent a single species. As *angularis* has page priority over *crescentis*, it is proposed that the latter become the synonym.

#### GENERAL CHARACTERISTICS OF THE GENUS

The spiders of this genus, like those of other genera of Agelenidae, are quite similar in size and appearance. Coloration and general structure appear to be constant throughout the genus with specific separation depending almost entirely on the structure of the genitalia. For this reason a detailed description of the structure and coloration is given here, and only specific and minor differences are discussed under the several species.

**SIZE:** Spiders moderate to large with considerable variation in size among individuals of the same species. Females generally larger, more robust, and with heavier, proportionately shorter legs than males.

**STRUCTURE:** Carapace somewhat longer than wide, widest between the second and third pair of legs, highest and arched just behind eye area, rounded over eyes to anterior margin and sloping gradually to just behind thoracic groove from which it slopes sharply to posterior margin. Clypeus nearly perpendicular and as wide or wider than the diameter of the anterior median eyes. Carapace narrowed in front, with sides nearly parallel for about one-third the length. Cephalic part clearly defined by cervical grooves. Radial furrows distinct. Thoracic groove short, deep, and longitudinal. Carapace cordate behind. Hairs of carapace longest on clypeus and over eye area. Sternum cordate and longer than wide.

Eyes in two rows occupying slightly more than one-half the width of the carapace in the cephalic area. Both eye rows lightly procurved with the posterior row slightly longer. Anterior median eyes as large as, or larger than, anterior lateral eyes, lateral eyes subequal and posterior median eyes smallest. Anterior median eyes closer to anterior laterals than to each other. Eyes of posterior row nearly equidistant. Lateral eyes separated from each other by less than a diameter. Median ocular quadrangle slightly longer than wide and somewhat narrowed in front.

Chelicerae robust, with prominent lateral condyles. Fangs strong and moderately curved. Furrows of chelicerae

armed both above and below with three distinct teeth. Endites longer than wide and widest at distal ends. Labium longer than wide and widest at base. Upper margins of the furrows of the chelicerae and inner angles of the distal ends of the endites rather densely clothed with long hairs.

Legs robust and moderately long. First and second pairs of legs directed forward, third and fourth pairs directed backward. Leg formula 4123. Coxae of all legs with a longitudinal ridge on anterior face. All legs moderately clothed with hair. Spines strong and moderately long. Tibiae of all legs armed below with three pairs of spines. Metatarsi of all legs armed below with two pairs of spines and a group of three spines at the distal ends.

Abdomen longer than wide, subovate and widest behind the middle. Spinnerets prominent, with the anterior pair shortest and posterior pair longest. Posterior spinnerets two-jointed. Abdomen moderately well clothed with long hairs.

Epigynum variously developed but always with a pair of fleshy tubercles on the anterior margin or at the anterior lateral corners.

Patella of male palpus with one or two processes on the ectal face. Tibia with one or more lobes on the ectal face. Embolus long, tubular, and looped on the mesal side of the bulb. Embolic conductor variously developed but always supporting and enclosing the tip of the embolus. Median apophysis small, and shaped somewhat like one shell of a bivalve. Terminal apophysis large, accompanying the embolic conductor and apparently acting as a secondary embolic guide. Cymbium strongly cup-shaped with the tip tapering and moderately long.

**COLORATION:** The coloration of the spiders of this genus is somewhat variable, not only between the different species but between individuals of the same species. The basic color of the cephalothorax, abdomen, and legs varies from a light yellow to a reddish brown, while the markings vary from a light gray to a very dark, almost black, gray. Markings occur in a general pattern typical for the genus and are more distinct on newly moulted or fresh

specimens than on old or old preserved specimens.

Cephalothorax light, darker on cephalic part and over eye area than thoracic part. Markings on cephalic part consist of two parallel, reticulate, irregular, dusky stripes that arise between the posterior median and lateral eyes and unite just in front of the thoracic groove. Anterior lateral corners of cephalic area dusky. Thoracic part darker in the middle, marked with three pairs of triangular dusky spots that form two indefinite crescentic longitudinal bars midway between the thoracic groove and the lateral margins. Lateral margins of thoracic part seamed with a dusky line. All eyes bordered with black, and the anterior medians and both laterals occur in black spots. Sternum darker on the sides than in the middle, forming an indistinct interrupted median stripe that may or may not be accompanied with light areas.

Chelicerae brown or reddish brown with light lateral condyles. Endites and labium concolorous with margins of sternum.

Legs light to dark yellow, darkening on metatarsi and tarsi and marked as follows: coxae with proximal and distal dusky bars below; trochanters unmarked; femora with proximal, median, and distal dusky bands that are interrupted above; patellae dusky at distal ends below; tibiae and metatarsi with proximal and distal dusky bands that are interrupted above; tarsi unmarked. Palpi concolorous with legs darker on tibiae and tarsi of female and patellae and tibiae of male. Abdomen light with dusky markings. Dorsum heavily spotted, with coalescence forming a dark indistinct median lanceolate bar on the basal third of the abdomen and a series of dark chevrons down the middle of the distal two-thirds of the abdomen. Venter with two parallel dusky stripes that unite in front of the spinnerets. On some specimens the mesal edges of the stripes are indistinct, causing the venter to appear reticulate with dusky markings. Spinnerets light with dusky speckling.

#### GROUP A

Females of this group are characterized by epigyna with a single anterior septum

which may or may not be notched along the posterior margin. The anterior lateral tubercles are robust and abruptly pointed at the apex.

Distinguishing male palpal characteristics are: the presence of a concavity on the ectal laterodorsal surface of the tibiae, the tibiae are elongated basally into a tubercle, and the form of the embolic conductor which is spatulate or subspatulate at the tip.

TYPICAL SPECIES: *Coras medicinalis* (Hentz).

### *Coras medicinalis* (Hentz)

Figures 1-3, 21-24

*Tegenaria medicinalis* HENTZ, 1821, Jour. Acad. Nat. Sci. Philadelphia, vol. 2, pt. 1, p. 53, pl. 5, fig. 1a, 1b.

*Tegenaria nemorensis* WALCKENAER, 1841, Histoire naturelle des insectes, aptères, vol. 2, p. 10.

*Caelotes urbanus* KEYSERLING, 1887, Verhandl. Zool.-Bot. Gesellsch. Wien, vol. 37, p. 467, pl. 6, fig. 31.

MALES: Total length 9.00 to 12.68 mm. Carapace 3.13 to 3.80 mm. wide and 4.46 to 6.33 mm. long. Abdomen 3.82 to 4.33 mm. wide and 4.80 to 6.60 mm. long. Fourth leg 17.00 to 23.33 mm. long.

Spiders moderately large, among the largest of the genus. Structure and coloration typical. Markings are usually quite distinct.

Anterior median eyes larger than anterior lateral eyes by a ratio of 5 to 4. Clypeus somewhat wider than the diameter of the anterior median eyes.

Patella of palpus somewhat shorter than tibia. Ectal process of patella in lateral view, a short, stout, pointed spur rounded on the ventral margin, flattened on the dorsal margin and situated near the ventral margin of patella; in ventral view ectal process spatulate and projecting at an angle from patella. Tibia in ectal view strongly ridged with an acute distal lobe on the ventral margin and an acute basal lobe on the dorsal margin. Embolus long and tubular, looped across the distal end of tibia and along half of the length of the mesal edge of the cymbium. Embolic conductor subspatulate at tip with flattened portion one-third the length of the conduc-

tor. Terminal apophysis a strongly curved, flattened bar with a spatulate apex.

FEMALES: Total length 9.45 to 13.33 mm. Carapace 3.24 to 4.06 mm. wide and 4.62 to 6.71 mm. long. Abdomen 4.02 to 4.66 mm. wide and 5.03 to 6.82 mm. long. Fourth leg 14.33 to 19.68 mm. long.

Females usually somewhat more robust than males and markings are often darker and less distinct.

Anterior eye ratio and clypeal width same as in males.

Epigynum variable, somewhat wider than long. Septum with a median notch on the posterior margin that is variable in width and with sharply angled or nearly parallel sides. Extreme lateral ridges of epigynum parallel or nearly parallel with sides of median notch. Anterior lateral tubercles short, heavy, and arising in front of posterior margin of septum.

REMARKS: This species, the genotype and the type of this group, forms a distinct group with *C. parallelis* Muma and *C. furcatus*, new species. The extremely variable epigyna of the females indicate the possibility that the species is a heterogeneous mixture. However, no correlation of variable males and females could be made, even with the large series that was studied, so no separation was attempted.

TYPE LOCALITY: Hentz gave no specific type locality at the time he described the present species. Later he cited the "United States," "North Carolina in March," and "Massachusetts in May" as localities from which *medicinalis* came. Inasmuch as no types were designated and the material, with the possible exception of the palpi of one of the original specimens, has been lost, it is not possible to select a lectotype. Hentz's *medicinalis*, however, is so well known that a neotype is unnecessary.

RECORDS: *Alabama*: Auburn, one female, Nathan Banks. Sepulga River, Conecuh County, January 10, 1941, one female, A. F. Archer. *Colorado*: Denver, one male, Marx. West Cliff, one female, Marx. *Connecticut*: Hamden, June 10 and 24, 1935, two females, B. J. Kaston. Branford, April 4, 1935, one female, B. J. Kaston; September 3, 1937, two males, D. S. Riggs. Morris, July 15, 1938, three females, B. J. Kaston. Brookvale, May 8, 1935, one fe-

male, B. J. Kaston; April 20, 1938, one female, B. J. Kaston. Colchester, September 15, 1937, one female, B. J. Kaston. Norwalk, May 27, 1933, three females, W. J. Gertsch. South Meriden, June 30, 1935, one female, H. L. Johnson; March 24, 1935, one male, H. L. Johnson. New Milford, March 28, 1938, one female, A. De Caprio. East Haddam, April 21, 1935, one female, B. J. Kaston. Oxford, February 10, 1937, one male, P. H. Marvin. Avon, September 23, 1937, one male, B. J. Kaston. Macedonia, August 7, 1937, one male, B. J. Kaston. New Haven, 1932, one male, B. J. Kaston. Mt. Carmel, November 18, 1934, one female, B. J. Kaston; April 16, 1937, two females, B. J. Kaston. Cheshire, November 22, 1936, four females, one male, H. L. Johnson. *District of Columbia*: Washington, one male, Banks; two males, one female, Marx. *Florida*: Gainesville, Alachua County, October 20, 1938, one male, H. K. Wallace. *Georgia*: Gainesville, March 10, 1939, one female, B. J. Kaston. *Illinois*: Chicago, one male, Marx. *Maryland*: Parole, April 29, 1944, one female, M. H. Muma. College Park, March 12, 1945, one female, M. H. Muma; March 29, 1941, one female, M. H. Muma; September 25, 1941, one female, M. H. Muma; December 10, 1941, one female, Earl Beardsley; March 30, 1943, one male, M. H. Muma; April 27, 1941, one female, M. H. Muma; November 5, 1941, one female, E. Beardsley; March 26, 1944, one female, H. Howden; November 10, 1941, one female, M. H. Muma. Churchville, June 28, 1941, one female, M. H. Muma. Berwyn, November 11, 1942, one female, Earl Beardsley. Glen Arm, April 6, 1945, one male, M. H. Muma; September 22, 1944, two males, two females, M. H. Muma. Cranberry, September 1, 1944, one male, M. H. Muma. Bethesda, November 7, 1943, one male, J. M. Davis. Brown's Bridge, February 5, 1944, one male, one female, H. Howden. Silver Spring, April 4, 1941, one female, M. H. Muma. Cabin John, one female, J. G. Mutziger. *Michigan*: Eagle River, Lake Superior, one male, one female, Marx. *Minnesota*: Rochester, one female, Marx. *Mississippi*: Lake Horn, one female, Marx. *New Jersey*: Fort Lee, May 17, 1911, one female, G. von Krockow and Giles. Ramsey, November 19, 1934, one female, W. J. Gertsch; June 3, 1934, two females, W. J. Gertsch; September 3, 1934, one female, W. J. Gertsch; October 7, 1933, one male, W. J. Gertsch; May 6, 1934, one male, six females, W. J. Gertsch; September 9 and 18, 1933, three males, six females, W. J. Gertsch. *New York*: Forest Park, September 27, 1908, one male, one female; April 17, 1909, one male, Barnum and Giles. Sea Cliff, one male, five females, Nathan Banks. Ithaca, one female, Nathan Banks. Cold Spring Harbor, June 25, 1903, one female. Flushing, Long Island, October 7 and 12, 1934, four males, seven females, E. L. Bell. Hollis Woods, Long Island, June 22, 1943, one female, V. M. von Hagen. Tuckahoe, April 1, 1944, one female, B. Maguire, Jr., and V. M. von Hagen. Central Park West,

New York City, April 17, 1908, one female, von Krockow. Bronx Park, New York City, May 2, 1908, one female. *North Carolina*: Raleigh, October 1, 1944, one male, C. S. Brimley; October 30, 1911, one male, one female, C. S. Brimley. Chapel Hill, April 19, 1930, one male, J. C. Beakley; one female, no further data. *Oregon*: Lake Klamath, one female. *Tennessee*: Great Smoky Mountains, sides of Mt. LeConte, July 8, 1933, one female, Wilton Ivie. *Virginia*: Falls Church, two males, Nathan Banks.

### *Coras parallelis* Muma

Figures 4, 5

*Coras parallelis* MUMA, 1944, Amer. Mus. Novitates, no. 1257, p. 4, fig. 6.

**FEMALES:** Total length 9.67 to 11.13 mm. Carapace 2.87 to 3.60 mm. wide and 4.07 to 5.13 mm. long. Abdomen 3.73 to 4.13 mm. wide and 5.80 to 6.20 mm. long. Fourth leg 14.33 to 19.46 mm. long.

Moderately large spiders. Coloration and structure typical. Dusky spots on abdomen small but forming a distinct typical pattern.

Anterior median eyes larger than the anterior lateral eyes by a ratio of 4 to 3. Clypeus nearly one and one-half times the diameter of the anterior median eyes in width.

Epigynum wider than long by a ratio of 3 to 2. Septum with a parallel-sided notch on the posterior margin that occupies one-third of the width of the septum and is variable in length. Extreme lateral ridges nearly parallel with sides of septal notch. There are two parallel grooves near the posterior margin of the epigynum that are separated by the width of the septal notch. In the holotype the notch extends back to these grooves, but in no other specimen studied does the notch extend more than two-thirds of the distance. Anterior lateral tubercles short, heavy, and arising in front of posterior margin of septum.

**REMARKS:** This species is quite closely related to the genotype and *C. furcatus*, new species. The male is not known.

**TYPE LOCALITY:** Female holotype from Princess Anne, Maryland, October 24, 1941, W. Barb, in the collection of the American Museum of Natural History.

**RECORDS:** *Connecticut*: Mt. Carmel, May 12, 1937, one female, B. J. Kaston. *Delaware*: Westover Hills, Wilmington, April 24, 1941,

one female, A. Bacon. *New Jersey*: Alpine, April 25, 1909, one female.

***Coras furcatus*, new species**

Figures 6, 25, 26

**MALE HOLOTYPE:** Total length 7.97 mm. Carapace 2.80 mm. wide and 4.00 mm. long. Abdomen 2.33 mm. wide and 4.07 mm. long. Fourth leg 17.20 mm. long.

Comparatively small spider. Coloration and structure typical except for the following differences. Dark basal lanceolate mark and first dusky chevron interrupted with the light base color. Light median stripe on venter not interrupted by a dusky area and branched in three places along its length. Venter reticulate with dusky markings rather than with two stripes.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 2. Clypeus width about one and one-half times the diameter of the anterior median eyes.

Palpus similar to that of *medicinalis* except as follows: Ectal patellar process strongly furcate with the apices well separated from either a lateral or ventral view. The flattened tip of the embolic conductor is broader and the base of the conductor heavier than in *medicinalis*.

**FEMALE ALLOTYPE:** Total length 8.60 mm. Carapace 2.73 mm. wide and 4.20 mm. long. Abdomen 3.13 mm. wide and 4.60 mm. long. Fourth leg 14.73 mm. long.

Female somewhat more robust than male and with shorter legs. Coloration and structure same as in male except that the light, median, branched stripe is interrupted with a dusky area in the posterior third of its length.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 2. Width of clypeus about one and one-half times the diameter of the anterior median eyes.

Epigynum wider than long by a ratio of about 2 to 1.5. Posterior margin of septum crenate, forming a wide notch with evenly rounded sides. Extreme lateral ridges form an obtuse angle with the sides of the septal notch. Anterior lateral tubercles short, stout, and arising in front of posterior margin of septum.

**FEMALE PARATYPES:** Total length 9.80 to 10.52 mm. Carapace 3.00 to 3.33 mm. wide and 4.20 to 4.86 mm. long. Abdomen 3.80 to 4.46 mm. wide and 5.80 to 5.86 mm. long. Fourth leg 12.66 to 19.33 mm. long.

**REMARKS:** This species is closely related to *C. medicinalis* (Hentz) and *C. parallelis* Muma. From the material studied it appears to be confined to the Gulf coast states.

**TYPE LOCALITY:** Male holotype and female allotype from Pensacola, Florida, January 31, 1925, W. M. Barrows.

**RECORDS:** *Florida*: Alachua County, January 12, 1938, female paratype, B. J. Kaston. Dudley's Caves, Alachua County, March 18, 1938, female paratype, W. J. Gertsch. Pensacola, Ferry Pass, January 31, 1925, female paratype, W. M. Barrows.

***Coras lamellosus* (Keyserling)**

Figures 7, 27-30

*Caelotes lamellosus* KEYSERLING, 1887, Verhandl. Zool.-Bot. Gesellsch. Wien, p. 469, pl. 6, fig. 30, 30a, 30b.

**MALES:** Total length 8.49 to 12.33 mm. Carapace 2.86 to 3.53 mm. wide and 5.06 to 6.00 mm. long. Abdomen 2.46 to 4.60 mm. wide and 3.53 to 6.53 mm. long. Fourth leg 17.53 to 21.40 mm. long.

Spiders commonly moderate in size. Coloration and structure typical. Colors usually strikingly contrasted, making the markings distinct.

Anterior median eyes larger than anterior lateral eyes by the ratio of 3 to 2.5. Width of clypeus about one and one-half times the diameter of an anterior median eye.

Patella of palpus somewhat shorter than tibia. Ectal patellar process of palpus a stout, elongate, distal spur situated near the ventral margin of the segment. In lateral view the sides of the process are nearly parallel and the tip subcuneate with an acute apex over the dorsal margin. In ventral view the spur curves outward and is bilobed at the tip. The tibia of the palpus is strongly ridged in ectal view and is provided with an acute distal lobe on the ventral margin and a large, rounded, basal lobe on the dorsal margin. Embolus tubular, considerably shorter than in *C.*

*medicinalis* (Hentz) and looped across the face of the bulb. Embolic conductor with a bulb-like base and margins that taper gradually to the small subspatulate tip that is provided with a projecting distal spine. Terminal apophysis plate-like with a narrow twisted tip that accompanies the embolic conductor. Cymbium strongly cup-shaped and distinctly ridged on the ectal margin of the ventral face.

**FEMALES:** Total length 8.12 to 13.19 mm. Carapace 2.33 to 3.66 mm. wide and 3.66 to 5.66 mm. long. Abdomen 2.66 to 5.93 mm. wide and 4.66 to 7.73 mm. long. Fourth leg 11.60 to 19.26 mm. long.

Females generally slightly more robust than males. Coloration and structure similar to males.

Anterior eye ratio and clypeal width the same as in the males.

Epigynum wider than long by a ratio of 1.4 to 1. Posterior margins of septum nearly straight and angled sharply toward posterior end of epigynum, forming a notch about one-third the width of the septum with strongly sloping sides. Extreme lateral ridges of epigynum form an angle of less than  $90^\circ$  with the posterior margin of the septum. Anterior lateral tubercles stout and long, extending backward beyond the septum.

**REMARKS:** This species forms a closely related group with the two following species, *C. perplexus*, new species, and *C. aerialis*, new species. Although the species is widely distributed, it seems to be more common in the central part of the country.

**RECORDS:** *Arkansas:* Berryville, fall, 1938, two males and three females, C. Wilton. *California:* San Francisco, one female. *District of Columbia:* Washington, two females, Marx; one male, Nathan Banks. *Illinois:* Cook County, one male and one female, R. V. Chamberlin. Kickapoo State Park, October, 1942, two males. New Lenox, April 16, 1932, one male, D. C. Lowrie; October 26, 1936, one female, M. Sharp. Chicago, one female. Willow Springs, Cook County, August 27, 1942, one male and one female, Borys Malkin. *Indiana:* Three males and four females, no further data. *Kansas:* Manhattan, one male, Nathan Banks. *Louisiana:* Kisatchie National Forest, Grant Parish, June, 1941, one male and six females, Jones and Archer. *Minnesota:* Minneapolis, May 18 to June 4, 1931, two males and four females, W. J. Gertsch. Lake Pepin, Waconia

Beach, May 15, 1932, five females, W. J. Gertsch; April 25, 1931, one female, W. J. Gertsch. *Mississippi:* Lake Horn, one female. *Nebraska:* Seward, August 8 to October 19, 1945, eight males and seven females, M. H. Muma. Plattsmouth, March 26, 1923, one female, L. G. Worley. Gilead, October 30, 1945, two males and two females, M. H. Muma. Scotia, October 17, 1945, one female, M. H. Muma. *Oregon:* Lake Klamath, one male, Marx. *Pennsylvania:* York, one male, Marx. Altoona, one male. Washington, June 7, 1929, one male, W. W. Long.

### *Coras aerialis*, new species

Figures 8, 31, 32

*Coelotes medicinalis* EMERTON, 1889, Trans. Connecticut Acad. Sci., vol. 8, p. 191, fig. 1a, 1b, 1c.

*Coras lamellosus* MUMA, 1944, Amer. Mus. Novitates, no. 1257, p. 4, fig. 4.

**MALE HOLOTYPE:** Total length 11.69 mm. Carapace 4.20 mm. wide and 6.06 mm. long. Abdomen 3.53 mm. wide and 5.73 mm. long. Fourth leg 22.00 mm. long.

Comparatively large spider. Coloration and structure typical. Entire coloration somewhat darker than usual.

Anterior median eyes larger than anterior lateral eyes by the ratio of 3 to 2. Width of clypeus about one and one-half times the diameter of the anterior median eyes.

Structure of palpus similar to that of *C. lamellosus* (Keyserling). It may be distinguished from *lamellosus* by differences in the ectal patellar process and embolic conductor. The patellar process in lateral view is bent slightly near the tip, and the tip is irregularly blunt. In ventral view the tip of the process is undulate. The embolic conductor is stout with a broad flattened tip and a large distal spine.

**FEMALE ALLTYPE:** Total length 11.72 mm. Carapace 3.80 mm. wide and 5.46 mm. long. Abdomen 4.60 mm. wide and 6.46 mm. long. Fourth leg 19.53 mm. long.

Female nearly same size as male, legs slightly shorter and stouter. Coloration and structure same as male.

Anterior eye ratio and clypeal width same as for male.

Epigynum wider than long by a ratio of 1.6 to 1. Posterior margins of septum angled as in *C. lamellosus* (Keyserling) but evenly rounded rather than straight. Septal notch considerably wider than in

*lamellosus*. Extreme lateral ridges form a noticeably acute angle with the sides of the septal notch. Anterior lateral tubercles stout, short, and extending nearly parallel to the posterior margin of the septum.

**FEMALES:** Total length 9.49 to 13.39 mm. Carapace 2.80 to 4.33 mm. wide and 4.33 to 6.66 mm. long. Abdomen 3.60 to 5.40 mm. wide and 5.26 to 6.93 mm. long. Fourth leg 13.53 to 20.73 mm. long.

**REMARKS:** This species is closely related to *C. lamellosus* (Keyserling) and *C. perplexus*, new species. It appears to be confined to the northeastern part of the United States.

**TYPE LOCALITY:** Male holotype and female allotype from Deep Creek Lake, Maryland, May 30, 1941, M. H. Muma.

**RECORDS:** *Maryland:* Deep Creek Lake, September 13, 1943, two male and three female paratypes, M. H. Muma; May 30, 1941, two female paratypes, M. H. Muma; May 5, 1944, one female paratype, M. H. Muma; April 30, 1941, two females, M. H. Muma; August 23, 1942, one female, M. H. Muma. *Massachusetts:* Swampscott, May 8, 1873, one male and one female, paratypes, Emerton. Hammonds Pond Woods, November 8, 1904, one female, Miss E. B. Bryant. Franklin Park, March 2, 1901, one female, Miss E. B. Bryant. *New Hampshire:* Randolph, September 10-14, 1939, one female, E. L. Bell. *New York:* Valcour Island, September, 1938, one male and one female, paratypes, H. Seton. Poughkeepsie, one female Banks.

### ***Coras perplexus*, new species**

Figures 9, 33, 34

**MALE HOLOTYPE:** Total length 6.89 mm. Carapace 2.53 mm. wide and 3.46 mm. long. Abdomen 2.20 mm. wide and 3.53 mm. long. Fourth leg 15.46 mm. long.

Comparatively small spider. Coloration and structure typical. Markings on sternum quite distinct; two light areas accompany the median stripe on each side. Venter with large, dusky, reticulate markings.

Anterior median eyes larger than anterior lateral eyes by a ratio of 2.5 to 2. Clypeus somewhat wider than the diameter of the anterior median eyes.

Structure of palpus similar to that of *C. lamellosus* (Keyserling). It may be separated from that species by the ectal process

of the patella which is considerably shorter, stouter, and furcate at the tip in lateral view and spatulate in ventral view. The distal spine of the embolic conductor is well removed from the tip of the conductor.

**MALES:** Total length 6.82 to 8.69 mm. Carapace 2.53 to 3.06 mm. wide and 3.42 to 4.53 mm. long. Abdomen 2.20 to 2.66 mm. wide and 3.50 to 4.26 mm. long. Fourth leg 15.26 to 18.20 mm. long.

In some specimens the ventral apex of the patellar process is bent ectally so that the process appears to have only one apex in lateral view.

**FEMALE ALLOTYPE:** Total length 8.76 mm. Carapace 2.53 mm. wide and 3.66 mm. long. Abdomen 3.13 mm. wide and 5.20 mm. long. Fourth leg 13.60 mm.

Somewhat more robust than male. Coloration and structure similar to the male except as follows: markings lighter, only one pair of light areas on sternum, and venter with finer reticulate markings.

Anterior eye ratio and clypeal width same as in male.

Epigynum similar to *C. lamellosus* (Keyserling) and *C. aeralis*, new species. Epigynum wider than long by a ratio of 2 to 1. Posterior margins of septum curved, not sharply angled posteriorly, and forming a wide flat notch. Extreme lateral ridges form a right or obtuse angle with the posterior margins of the septum. Anterior lateral tubercles stout, short, and not extending to posterior margin of septum.

**FEMALES:** Total length 6.63 to 9.23 mm. Carapace 2.20 to 2.80 mm. wide and 3.33 to 4.00 mm. long. Abdomen 2.40 to 3.33 mm. wide and 3.40 to 5.33 mm. long. Fourth leg 11.13 to 14.86 mm. long.

**REMARKS:** This species is closely related to *C. lamellosus* (Keyserling). It seems to be confined to the Gulf coast states.

**TYPE LOCALITY:** Male holotype and female allotype from Hattiesburg, Mississippi, January 2 to 6, 1942, E. L. Bell.

**RECORDS:** *Alabama:* Mobile County, one male and three females, paratypes, H. P. Loding. Mobile, one male, and one females paratypes, R. V. Chamberlin. *Mississippi:* Centreville, Wilkinson County, January to July, 1944, one male, one female, A. F. Archer. Hattiesburg, January 2 to 23, 1942, eight male and 11 female paratypes, E. L. Bell.



**Coras angularis** Muma

Figures 10, 35-38

*Coras angularis* Muma, 1944, Amer. Mus. Novitates, no. 1257, p. 3, figs 2, 3.

*Coras crescentis* MUMA, 1944, Amer. Mus. Novitates, no 1257, p. 4, fig. 5.

**MALE HOLOTYPE:** Total length 8.55 mm. Carapace 2.73 mm. wide and 4.05 mm. long. Abdomen 2.42 mm. wide and 4.50 mm. long. Fourth leg 13.86 mm. long.

Moderate-sized spider. Coloration and structure typical. Sternal stripe narrow and not accompanied by distinct light areas.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 1.75. Clypeus somewhat wider than diameter of the anterior median eyes.

Patella of palpus shorter than tibia. Patella has two widely separated ectal processes. Both processes are short and stout, that nearest the ventral edge of the patella being acuminate while the other is unevenly rounded. Only the acuminate process is visible in ventral view. Basal and distal lobes of tibia small and acuminate in lateral view. Embolus long, tubular, and looped across the distal end of the tibia. Embolic conductor bulb-like at base and curving evenly to the spoon-shaped tip. There is no spine or spur at the tip of the conductor. Terminal apophysis with an elongate blade-like tip that is twisted and bent toward the cymbium near the tip.

**FEMALE ALLOTYPE:** Total length 9.75 mm. Carapace 3.00 mm. wide and 4.35 mm. long. Abdomen 3.62 mm. wide and 5.40 mm. long. Fourth leg 16.11 mm. long.

Somewhat more robust than male. Coloration and structure typical. Base color darker than usual, a yellowish brown.

Anterior eye ratio and clypeal width same as in male.

Epigynum wider than long by a ratio of 2 to 1.5. Median septum with no notch on posterior margin and with the margin undulate. Anterior lateral tubercles stout, elongate, and paralleling the posterior margin of the septum. The tubercles arise behind the septum.

**REMARKS:** This species forms a closely related group with *C. alabama*, new species,

and *C. kisatchie*, new species. It has been found only in Maryland.

**TYPE LOCALITY:** Male holotype, Swallow Falls State Park, Maryland, August 24, 1942, M. H. Muma, in the collection of the American Museum of Natural History.

**RECORD:** *Maryland:* Dans Rock, November 23, 1941, female allotype, M. H. Muma.

**Coras alabama**, new species

Figures 11, 39, 40

**MALE HOLOTYPE:** Total length, not measurable. Carapace 2.00 mm. wide and 3.20 mm. long. Abdomen crushed and not measurable. Fourth legs missing.

Specimen badly mangled but appears to be comparatively small. Coloration and structure typical of genus.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 2. Clypeus only a little wider than the diameter of the anterior median eyes.

Palpus similar to *C. angularis* Muma except as follows: Both ectal patellar processes acuminate, that nearest the ventral margin being considerably larger and bent at an angle for the distal half of its length. Processes widely separated. Embolic conductor sinuate rather than evenly curved from base to tip.

**FEMALE ALLOTYPE:** Total length 10.73 mm. Carapace 3.33 mm. wide and 5.00 mm. long. Abdomen 3.93 mm. wide and 5.93 mm. long. Fourth leg 16.73 mm. long.

Moderately large spider. Coloration and structure typical for genus.

Anterior eye ratio same as in male. Clypeus nearly twice diameter of anterior median eyes.

Epigynum wider than long by a ratio of 2 to 1.5. Posterior margin of septum curved and sharply angled posteriorly but not forming a notch. Anterior lateral tubercles robust, elongate, and gently tapered at tips; they arise behind and lie parallel to the posterior margin of the septum.

**FEMALE PARATYPES:** Total length 9.03 to 10.26 mm. Carapace 2.73 to 3.26 mm. wide and 4.80 to 4.86 mm. long. Abdomen 3.00 to 3.86 mm. wide and 4.53 to 5.60 mm. long. Fourth leg 15.00 to 16.53 mm. long.

REMARKS: This species is closely related to *C. angularis* Muma and *C. kisatchie*, new species. Material from two localities in Alabama and one in Louisiana exhibits characters that separate it from both of these species. However, when longer series are obtained they may show integration with *kisatchie*.

TYPE LOCALITY: Male holotype and female allotype, Monte Sano, Madison County, Alabama, 1939 and 1940, A. F. Archer.

RECORDS: *Alabama*: Saltpetre Cave, Jackson County, June, 1940, one female paratype, A. F. Archer. Monte Sano, Madison County, December, 1940, five female paratypes, A. F. Archer. *Louisiana*: DeRidder, 1944, two females, Mrs. E. L. Bell, Jr.

### *Coras kisatchie*, new species

Figures 12, 41, 42

MALE HOLOTYPE: Total length, 9.39 mm. Carapace 3.46 mm. wide and 4.66 mm. long. Abdomen 4.93 mm. wide and 3.20 mm. long. Fourth leg 16.60 mm. long.

Spider moderately large. Coloration and structure typical. Abdomen blistered but color pattern seems to be typical.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 2. Width of clypeus about one and one-half times the diameter of the anterior median eyes.

Palpus similar to that of *C. angularis* Muma and *C. alabama*, new species. Ectal processes of patella similar to those of *alabama* except that the one nearest the ventral margin of the segment is not bent, the dorsal one is comparatively large, and the two are not widely separated. Embolic conductor with a heavy bulb-like base and a sharp constriction just behind the spoon-like tip. Terminal apophysis considerably larger than in the related species and not twisted.

FEMALE ALLOTYPE: Total length 11.59 mm. Carapace 3.80 mm. wide and 5.66 mm. long. Abdomen 5.13 mm. wide and 8.13 mm. long. Fourth leg 18.13 mm. long.

Large spider. Coloration and structure typical. Abdomen blistered so that color pattern is obliterated.

Anterior eye ratio and clypeal width same as in male.

Epigynum wider than long by the ratio of 2 to 1.6. Posterior margin of septum scalloped and sharply angled posteriorly. Anterior lateral tubercles short, broad, and abruptly pointed at tips. Tubercles arise behind and lie parallel to the posterior margin of the septum.

FEMALE PARATYPE: Total length 8.59 mm. Carapace 2.40 mm. wide and 3.73 mm. long. Abdomen 3.13 mm. wide and 5.06 mm. long. Fourth leg 13.00 mm. long.

REMARKS: This species is held separate from *C. alabama*, new species, on the basis of the characters given. It has been collected from only one locality, however, and may prove to be synonymous with that species.

TYPE LOCALITY: Male holotype and female allotype, Kisatchie National Forest, Grant Parish, Louisiana, June, 1941, Jones and Archer.

RECORD: *Louisiana*: Kisatchie National Forest, Grant Parish, June, 1941, one female, paratype, Jones and Archer.

### GROUP B

Females of this group are characterized by epigyna with two median septa which may arise from either the anterior or posterior margin or lie between the margins. The anterior lateral tubercles are slender and taper gradually toward the apex.

Male palpal characteristics are: the presence of a tubercle near the distal end of the tibiae on the ectal laterodorsal surface and the form of the embolic conductor which is variously developed but never spatulate or subs spatulate.

TYPICAL SPECIES: *Coras montanus* (Emerton).

### *Coras montanus* (Emerton)

Figures 16, 17, 43-46

*Coelotes montanus* EMERTON, 1889, Trans. Connecticut Acad. Sci., vol. 8, p. 192, pl. 7, fig. 3, 3a.

MALES: Total length 8.23 to 9.73 mm. Carapace 2.86 to 3.40 mm. wide and 4.13 to 4.80 mm. long. Abdomen 2.60 to 3.13 mm. wide and 4.20 to 5.13 mm. long. Fourth leg 18.33 to 20.66 mm. long.

Moderate-sized spiders. Coloration and structure typical. Dusky markings usually quite dark with base color in sharp contrast.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 2. Width of clypeus about one and one-half times the diameter of the anterior median eyes.

Patella of palpus slightly smaller than tibia. Ectal patellar process in lateral view with two curved opposing apices, of which the dorsal is larger. In ventral view the patellar process appears as a single acute spur. Tibia, in ectal view, with a distal lobe on the ventral margin and a small truncate lobe on the lateral face. Embolus tubular and looped along the mesal edge of the cymbium to the base of the embolic conductor. Embolic conductor a tapering, abruptly pointed structure that is bent at a right angle near the middle of its length. Terminal apophysis with an elongate spiral process that accompanies the embolic conductor across the face of the palpus and curves dorsally toward the cymbium near the ectal edge.

**FEMALES:** Total length 9.70 to 13.13 mm. Carapace 3.33 to 4.26 mm. wide and 5.00 to 6.00 mm. long. Abdomen 3.60 to 3.86 mm. wide and 4.90 to 7.33 mm. long. Fourth leg 16.20 to 17.93 mm. long.

Moderate to large-sized spiders. Coloration and structure same as in male.

Anterior eye ratio and clypeal width same as in male.

Epigynum wider than long by a ratio of 2 to 1. Paired septa arise on posterior margin and extend angularly outward toward the anterior lateral corners for one-third to one-half the length of the epigynum. The septa are widely separated. Anterior lateral tubercles gradually tapered from base to tip and acutely pointed. Epigynum somewhat variable with septa being indistinct in many cases.

**REMARKS:** This species, which is typical of this group, appears to be quite variable, especially in the details of the epigynum. Variation in epigyna could not be correlated with differences in the palpi so no separation was attempted. *C. cavernorum* Barrows may, when the type is studied,

prove to be synonymous with this species. *C. montanus* (Emerton) is a northern species and has not been taken south of New York State.

**RECORDS:** *Connecticut:* Mohawk Mountain, Cornwall, May 12, 1935, one male, B. J. Kaston. South Hill, October 2, 1900, one male, Petrunkevitch. *Maine:* Mt. Desert Island, one male and one female, W. Procter. *Minnesota:* Minneapolis, May 17, 1932, one female, W. J. Gertsch. *New Hampshire:* Randolph, September 10-17, three males and six females, E. L. Bell. *New York:* Liberty, September 9, 1936, one female, M. Usdin. Adirondacks, one female, Marx. *Newfoundland:* Bay Island, August, 1912, one female, Leroy. Stephenville Crossing, Bay St. George, July, 1912, two females, Engelhart. St. John's, June 24, 1919, one male and one female, Arthur English. *Nova Scotia:* Cheticamp, Cape Breton Island, one male. *Ontario:* Haliburton, June 1, 1940, one female, N. P. Smith; August 9, 1941, one female, S. Harrod. Skeleton Lake, one female, S. Harrod. *Quebec:* North entrance to Gaspé National Park, August 8, 1940, one female, A. M. and L. I. Davis. Bonaventure Island, August 1, 1941, one female, V. Crich. Seven Islands, August 19, 1924, one female, Waugh.

### *Coras cavernorum* Barrows

*Coras cavernorum* BARROWS, 1940, Ohio Jour. Sci., vol. 40, no. 3, p. 130, fig. 1.

This species is known only from the holotype which was not available for this study. The original description is transcribed below:

"**FEMALE:** Total length 13 mm. Cephalothorax 6 mm. Abdomen 7 mm. Cephalothorax widest part between second and third leg, 4 mm. Cephalothorax at eye region, 2.6 mm. Width of posterior lateral eyes, 1.6 mm. Length of first leg, 20 mm.

"Cephalothorax with the usual markings. A dark line from posterior lateral eyes to an elongated hexagonal light area which has its posterior point on the outside of a dark hexagonal area which ends lateral to the dorsal groove. A faint line from posterior middle eyes to the elongated light hexagonal area. The anterior angle of this area bisected by a dark line which is an extension of the line from the posterior lateral eyes.

"Anterior part of head a rich yellowish brown. This color becomes lighter toward

the posterior edge of the cephalothorax where it is lemon color.

"The legs are the same color as the head except the distal end of femur and the patella which are lemon. Faint bars show on the upper side of femora and tibiae. The femora underneath show three well marked dark bars; the first or basal is narrow; the second or middle bar and the subapical are broad.

"Abdomen a dark greenish gray. The indefinite pattern is made up by the underlying white which shows through. A basal dark stripe extends half the length of the abdomen. It is broken in the middle by a white spot between two muscle impressions. On the posterior part are five chevrons. The two anterior are broad and irregular flocculent white spots. The three posterior are inverted V marks, each made up of a single row of small white dots. Just above each posterior spinneret a long white horizontal dash mark.

"Venter of abdomen with a long dark shield-shaped center broken by two small white spots just below the epigynum. The dark center is surrounded by large irregularly placed white spots. Sides of venter dark with small white dots.

"Epigynum wide, but narrow from front to back.

"Sternum dark with a central light line which nearly meets a posterior light diamond mark.

"One female from a small cave six miles west of Waynesville, N. C., at 3500 ft. September 30, 1936. A. Stupka Coll."

REMARKS: Barrows' figure of the epigynum closely agrees with that of *C. montanus* (Emerton). Until a study of the type can be made, however, the name *cavernorum* must be validated.

#### *Coras tennesseensis*, new species

Figures 20, 47, 48

MALE HOLOTYPE: Total length 9.13 mm. Carapace 3.20 mm. wide and 4.53 mm. long. Abdomen 3.13 mm. wide and 4.80 mm. long. Fourth leg 20.40 mm. long.

Moderate-sized spider. Coloration and structure typical for genus except as follows: markings unusually distinct for males, triangular spots on cephalothorax

blended to form distinct stripes, light median stripe on sternum continuous, leg bands dark.

Anterior median eyes larger than anterior lateral eyes by a ratio of 3 to 2. Width of clypeus nearly two times the diameter of the anterior median eyes.

Palpus similar to that of *C. montanus* (Emerton) except for the following: Ectal process of patella with a single ventrally hooked apex in lateral view; in ventral view the ectal process appears as a broad, gradually tapering spur with a blunt tip. Tibial lobes and embolus the same as in *montanus*. Embolic conductor a wide angular structure with a short, needle-like apex. Terminal apophysis plate-like with two short spatulate arms that are partially hidden by the embolic conductor in ventral view.

MALE PARATYPE: Total length 9.53 mm. Carapace 3.26 mm. wide and 4.73 mm. long. Abdomen 3.66 mm. wide and 5.00 mm. long. Fourth leg 21.13 mm. long.

FEMALE ALLOTYPE: Total length 9.72 mm. Carapace 3.60 mm. wide and 4.86 mm. long. Abdomen 3.40 mm. wide and 5.06 mm. long. Fourth leg 17.86 mm. long.

Spider slightly larger and more robust than male. Coloration and structure typical and similar to male.

Anterior eye ratio same as male. Clypeus width one and one-half times the diameter of the anterior median eyes.

Epigynum wider than long by a ratio of 2 to 1.2. The paired septa are widely separate and, although they lie in the middle of the epigynum, are slightly nearer the anterior margin. Each septum is bent on a right angle with the apex extending toward the lateral margin. Anterior lateral tubercles short with a bulb-like base and a short, needle-like tip. Posterior lateral corners of epigynum elevated and projected backward into angular lobes.

FEMALE PARATYPE: Total length 8.66 mm. Carapace 3.06 mm. wide and 4.06 mm. long. Abdomen 3.00 mm. wide and 4.86 mm. long. Fourth leg 16.20 mm. long.

REMARKS: This species, which is related to *C. taugynus* Chamberlin, has been found in only two southern states, North Carolina and Tennessee.

**TYPE LOCALITY:** Male holotype and female allotype from Gatlinburg, Tennessee, September 23, 1934, W. M. Barrows.

**RECORDS:** *North Carolina:* One male paratype, no further data. *Tennessee:* Montvale Spring, March, 1939, one female paratype, W. M. Barrows.

### ***Coras taugynus* Chamberlin**

Figures 18, 19, 49, 50

*Coras taugynus* CHAMBERLIN, 1925, Proc. Biol. Soc. Washington, vol. 38, p. 124.

**MALE ALLOTYPE:** Total length 11.46 mm. Carapace 3.80 mm. wide and 6.00 mm. long. Abdomen 3.33 mm. wide and 5.66 mm. long. Fourth leg 23.73 mm. long.

Large spider. Coloration and structure typical. Dusky markings distinct. Median sternal stripe continuous.

Anterior median eyes larger than anterior laterals by a ratio of 3 to 2. Clypeus width one and one-half times the diameter of the anterior median eyes.

Palpus quite similar to *C. tennesseensis*, new species. Ectal process of patella large, two-thirds as long as the patella. In lateral view, process is broad at base and abruptly narrowed near apex which is slightly hooked downward. In ventral view process tapers gradually to apex. Embolus tubular and looped along mesal edge of the cymbium to the base of the embolic conductor. Embolic conductor in ventral view broad at base, bent at right angles, acutely pointed at apex, and with a spur on the distal margin near the apex. Terminal apophysis plate-like with two short spatulate arms that are partially hidden by the embolic conductor in ventral view.

**FEMALE PARATYPE:** Total length 11.06 mm. Carapace 3.40 mm. wide and 5.06 mm. long. Abdomen 4.26 mm. wide and 6.20 mm. long. Fourth leg 19.00 mm. long.

Moderate-sized spider. Coloration and structure typical. Old alcoholic specimen with markings obscure.

Anterior eye ratio and clypeal width same as in male.

Epigynum wider than long by a ratio of 2 to 1.2. Septa U-shaped and situated close together in the middle of the epi-

gynum nearer the posterior margin. Each septum is partly or completely covered by a rounded fleshy flap or lobe which is provided at the anterior lateral corner with what seems to be a flexible hinge. Anterior lateral tubercles bulb-like at base with an elongate tip that extends over the septal lobe. Posterior lateral corners of epigynum elevated and projected posteriorly in rounded lobes. Measurements of several females: Total length 8.96 to 12.73 mm. Carapace 2.73 to 3.20 mm. wide and 4.40 to 4.93 mm. long. Abdomen 3.00 to 5.80 mm. wide and 4.46 to 8.00 mm. long. Fourth leg 17.00 to 19.73 mm. long.

**REMARKS:** This species and *C. tennesseensis* are closely related.

**RECORDS:** *Alabama:* Cave Spring Cave, Morgan County, August and December, 1939, two females, Jones and Archer. McFarlan Cave, near Garth, Jackson County, February 29, 1940, two females, Jones and Archer. Horseshoe Cave, near Algood, Blount County, March 8, 1940, one female, W. B. Jones. De Sota Park, De Kalk County, December, 1937, one male and two females, Jones. Monte Sano, Madison County, 1940, one male allotype and one female, A. F. Archer. *North Carolina:* Black Mountains, one female paratype, Banks. *Tennessee:* Montvale Springs, March 18, 1929, one female.

### ***Coras juvenilis* (Keyserling)**

Figures 13-15, 51, 52

*Coelotes juvenilis* KEYSERLING, 1881, Verhandl. Zool.-Bot. Gesellsch. Wien, vol. 31, p. 288, pl. 11, fig. 13.

*Coelotes longitarsus* EMERTON, 1889, Trans. Connecticut Acad. Sci., vol. 8, p. 192. (One female type, not illustrated.)

*Coelotes fidelis* BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 24, pl. 41, fig. 72, pl. 5, fig. 72.

*Coelotes lineatus* BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 25 (immature).

*Coelotes fidelis* BANKS, 1916, Proc. Acad. Nat. Sci. Philadelphia, p. 70, pl. 10, fig. 8.

**MALES:** Total length 6.09 to 9.23 mm. Carapace 2.20 to 3.13 mm. wide and 3.26 to 4.73 mm. long. Abdomen 1.86 to 2.80 mm. wide and 2.93 to 4.60 mm. long. Fourth leg 14.80 to 19.66 mm. long.

This species contains the smallest spiders of the genus. Coloration and structure typical. Markings usually are light though distinct. Dusky areas often small and well separated.

Anterior median eyes larger than anterior lateral eyes by a ratio of 2 to 1. Clypeus somewhat wider than the diameter of the anterior median eyes.

Ectal process of the patella of the palpus furcate in both lateral and ventral views. In lateral view the apexes are rounded, the dorsal larger than the ventral and notched on the dorsal margin, and are separated by a narrow slot. In ventral view both apexes are acuminate and are separated by a notch. Tibia typical for the group. Embolus tubular and looped along the mesal edge of the cymbium to the base of the embolic conductor. Embolic conductor short and stout, bulb-like at base and lobate at tip. Terminal apophysis, an elliptical plate-like structure.

**FEMALES:** Total length 6.66 to 10.13 mm. Carapace 2.33 to 2.93 mm. wide and 3.53 to 4.33 mm. long. Abdomen 2.13 to 4.26 mm. wide and 3.13 to 6.00 mm. long. Fourth leg 13.53 to 16.66 mm. long.

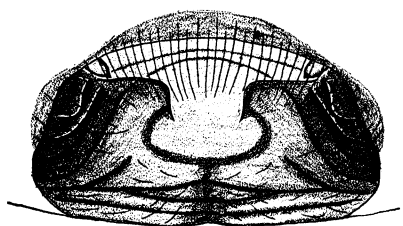
Slightly larger and more robust than males. Coloration and structure typical for genus. Colors usually darker than in male.

Anterior eye ratio and clypeal width the same as in the male.

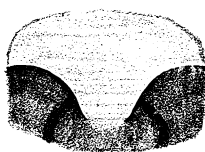
Epigynum wider than long by a ratio of 2 to 1.4. Septa adjacent, linear and elongate longitudinally extending from the posterior margin almost to the anterior margin. They are variable but usually slightly undulate and separated more widely at the anterior ends. Anterior lateral tubercles slender and tapered gradually from base to tip.

**REMARKS:** This species, although related to the other species of this group, does not have close affinities with any other species. The synonymy cited is that of Dr. R. V. Chamberlin, as the author has not studied the types of any of the synonymized species.

**RECORDS:** *Connecticut:* Barkhamstead, October 21, 1936, one female, B. J. Kaston. New Haven, 1932, one female, B. J. Kaston. Union, April 18, 1937, one female, B. J. Kaston. Bethany, September 5, 1936, one male, B. J. Kaston. Putnam, October 19, 1935, one female, B. J. Kaston. Roxbury, September 26, 1937, one female, B. J. Kaston. Griswold, April, 1936, two males and four females, A. De Caprio. Mt. Carmel, November 18, 1934, one female, B. J. Kaston. *Indiana:* Turkey Run, October 14, 1933, one male, C. F. Johnson. *Maryland:* Rocky Gap, November 21, 1941, three females, M. H. and K. E. Muma. Swallow Falls, May 31, 1941, two females, M. H. Muma. Salt Rock Creek, August 28, 1942, one male, M. H. Muma. Dans Rock, September 15, 1943, three males and two females, H. E. Muma. Deep Creek Lake, July 4, 1941, one female, M. H. and K. E. Muma. *Michigan:* Elk Lake, September, 1928, two females, S. Wright. *New York:* one female, Horace W. Britcher, no further data. September 5, 1900, one male, Horace W. Britcher, no further data. Glen House, one female, Horace W. Britcher. Sloatsburg, October 12, 1934, one male, W. J. Gertsch. Haverstraw, June 24, 1939, two females, W. J. Gertsch. Lake Sebago, October 8, 1933, one male and one female, W. J. Gertsch. Ithaca, April 26, 1937, one female, Gerberg, Greenspan. *Pennsylvania:* Johnstown, September 6, 1935, two females. *Vermont:* Passumpsic, one female, Granger. *Virginia:* Giles County, August 9, 1935, two females, H. H. Hobbs. *West Virginia:* Forks of the Cacapon near Ace Mountain, May 8, 1939, one female, E. L. Bell.



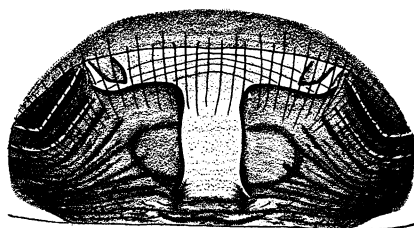
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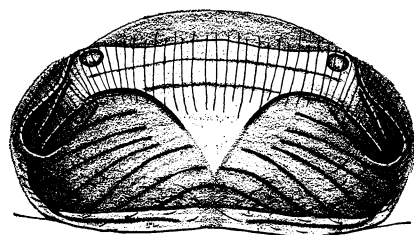
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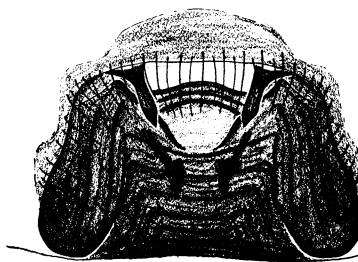
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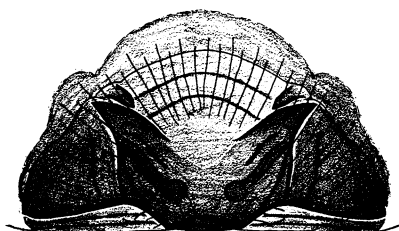
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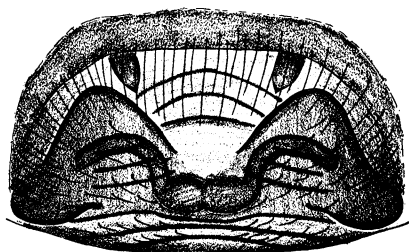
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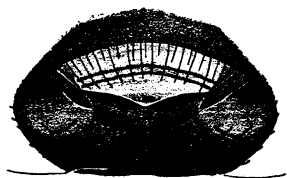


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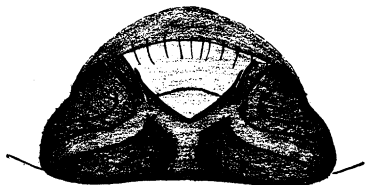


9

- Fig. 1. *Coras medicinalis* (Hentz), epigynum, ventral view.  
 Fig. 2. *Coras medicinalis* (Hentz), variation of septal notch.  
 Fig. 3. *Coras medicinalis* (Hentz), variation of septal notch.  
 Fig. 4. *Coras parallelis* Muma, epigynum, ventral view.  
 Fig. 5. *Coras parallelis* Muma, variation of septal notch.  
 Fig. 6. *Coras furcatus*, new species, epigynum, ventral view.  
 Fig. 7. *Coras lamellosus* (Keyserling), epigynum, ventral view.  
 Fig. 8. *Coras aeralis*, new species, epigynum, ventral view.  
 Fig. 9. *Coras perplexus*, new species, epigynum, ventral view.



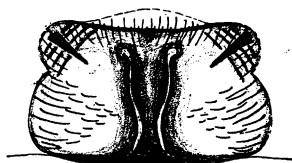
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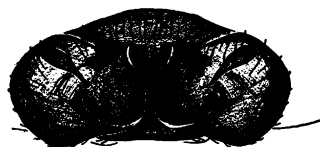
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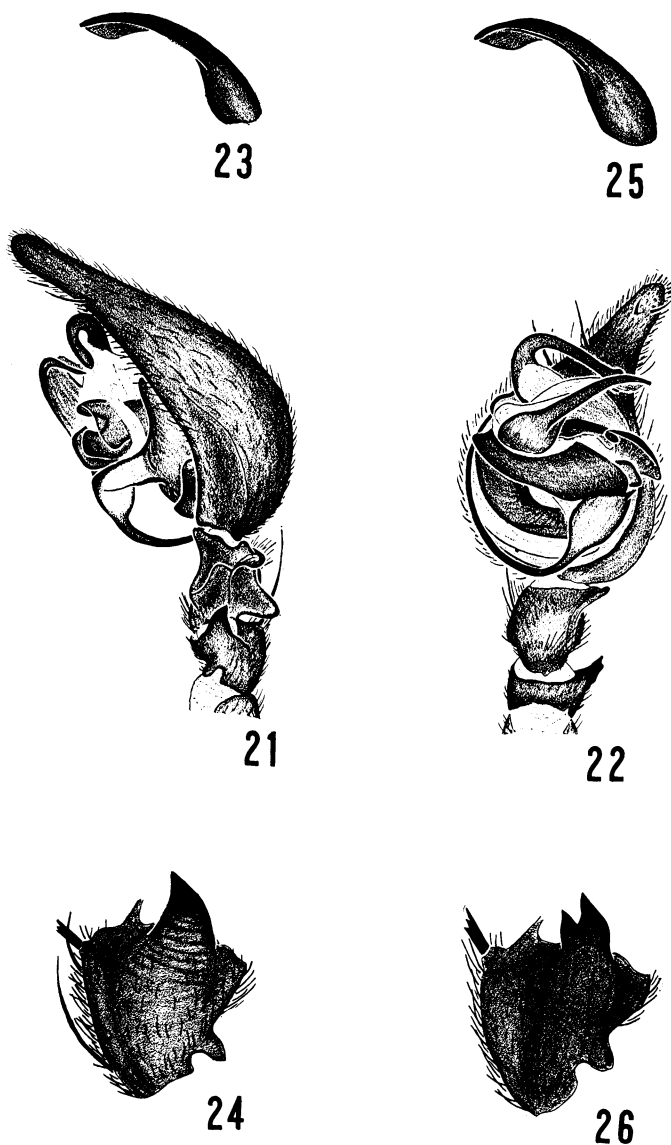
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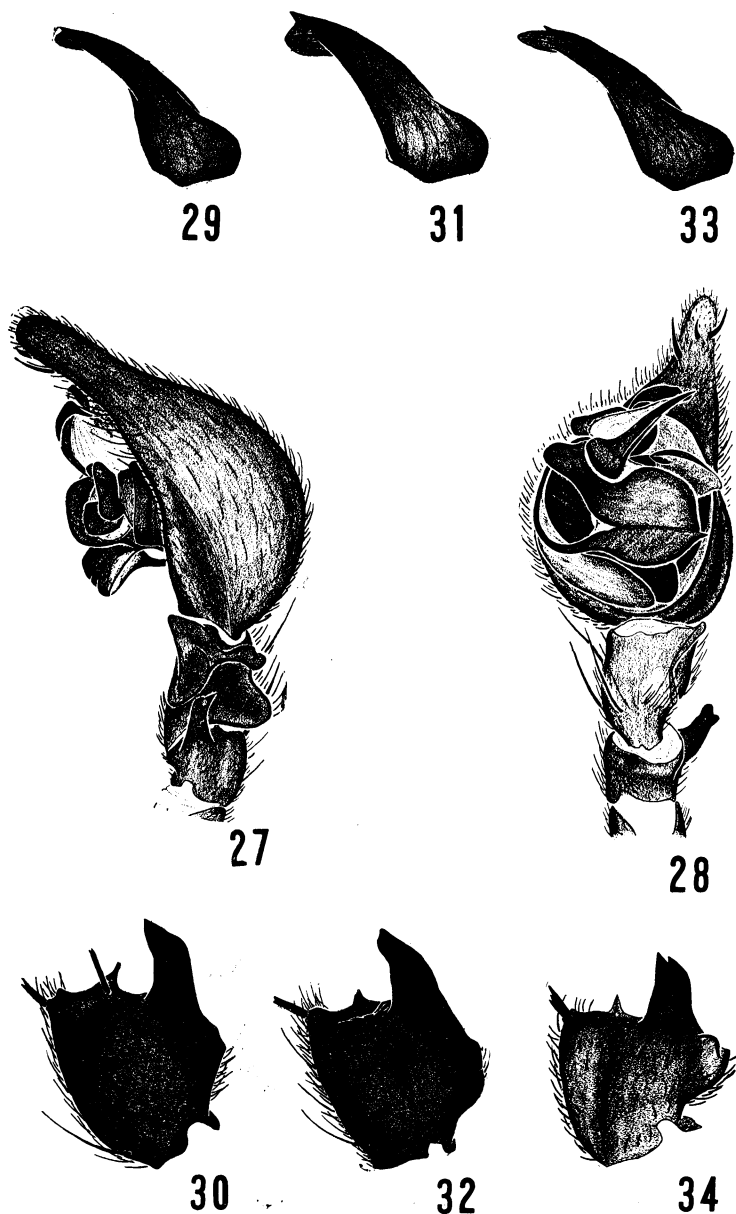
19

- Fig. 10. *Coras angularis* Muma, epigynum, ventral view.  
 Fig. 11. *Coras alabama*, new species, epigynum, ventral view.  
 Fig. 12. *Coras kisatchie*, new species, epigynum, ventral view.  
 Fig. 13. *Coras juvenilis* (Keyserling), epigynum, ventral view.  
 Fig. 14. *Coras juvenilis* (Keyserling), variation of septa.  
 Fig. 15. *Coras juvenilis* (Keyserling), variation of septa.  
 Fig. 16. *Coras montanus* (Emerton), epigynum, ventral view.  
 Fig. 17. *Coras montanus* (Emerton), variation of epigynum.  
 Fig. 18. *Coras taugynus* Chamberlin, epigynum ventral view.  
 Fig. 19. *Coras taugynus* Chamberlin, variation of epigynum.  
 Fig. 20. *Coras tennesseensis*, new species, epigynum, ventral view.

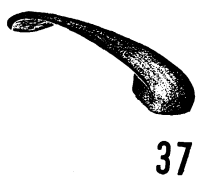




- Fig. 21. *Coras medicinalis* (Hentz), palpus, ectal view.  
 Fig. 22. *Coras medicinalis* (Hentz), palpus, ventral view.  
 Fig. 23. *Coras medicinalis* (Hentz), embolic conductor, sub-ventral view.  
 Fig. 24. *Coras medicinalis* (Hentz), patella of palpus, ectal view.  
 Fig. 25. *Coras furcatus*, new species, embolic conductor, sub-ventral view.  
 Fig. 26. *Coras furcatus*, new species, patella of palpus, ectal view.



- Fig. 27. *Coras lamellosus* (Keyserling), palpus, ectal view.  
 Fig. 28. *Coras lamellosus* (Keyserling), palpus, ventral view.  
 Fig. 29. *Coras lamellosus* (Keyserling), embolic conductor, sub-ventral view.  
 Fig. 30. *Coras lamellosus* (Keyserling), patella of palpus, ectal view.  
 Fig. 31. *Coras aerialis*, new species, embolic conductor, sub-ventral view.  
 Fig. 32. *Coras aerialis*, new species, patella of palpus, ectal view.  
 Fig. 33. *Coras perplexus*, new species, embolic conductor, sub-ventral view.  
 Fig. 34. *Coras perplexus*, new species, patella of palpus, ectal view.



37



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41



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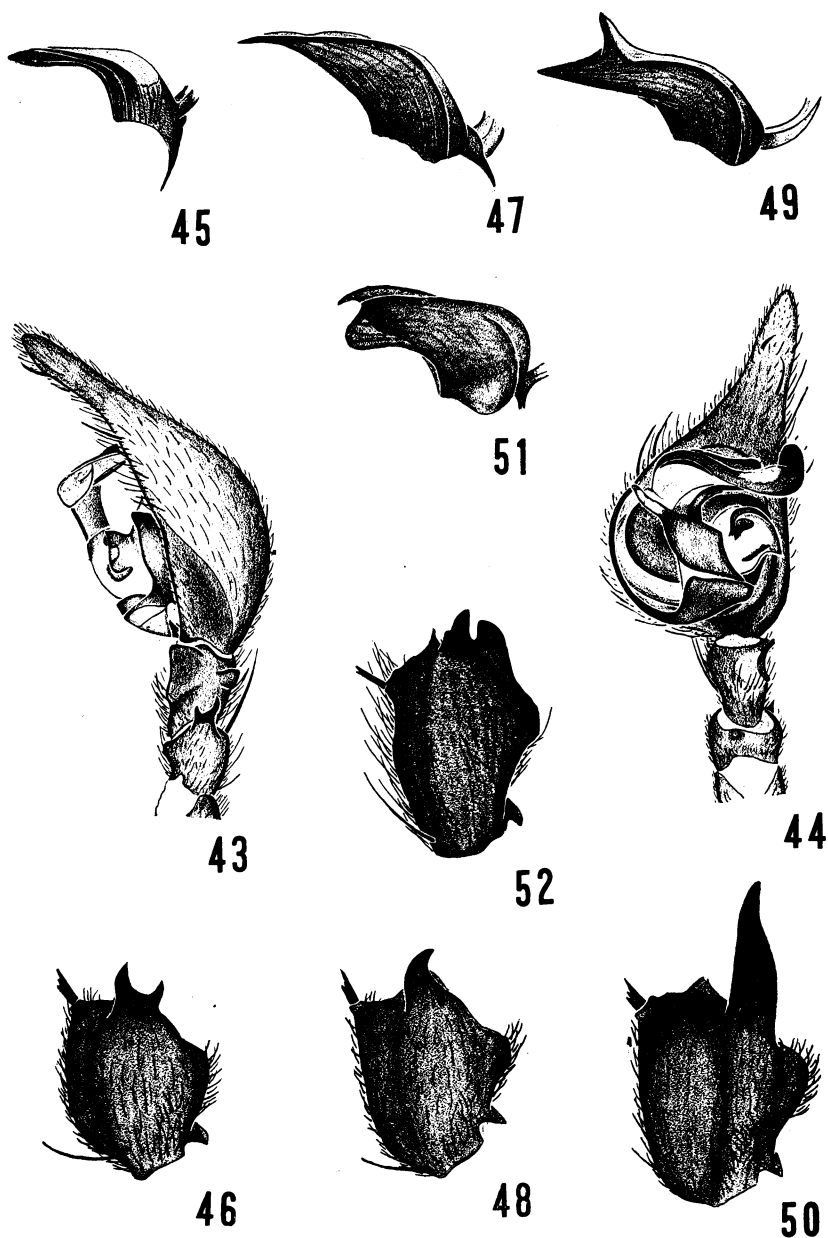


40



42

- Fig. 35. *Coras angularis* Muma, palpus, ectal view.  
 Fig. 36. *Coras angularis* Muma, palpus, ventral view.  
 Fig. 37. *Coras angularis* Muma, embolic conductor, sub-ventral view.  
 Fig. 38. *Coras angularis* Muma, patella of palpus, ectal view.  
 Fig. 39. *Coras alabama*, new species, embolic conductor, sub-ventral view.  
 Fig. 40. *Coras alabama*, new species, patella of palpus, ectal view.  
 Fig. 41. *Coras kisatchie*, new species, embolic conductor, sub-ventral view.  
 Fig. 42. *Coras kisatchie*, new species, patella of palpus, ectal view.



- Fig. 43. *Coras montanus* (Emerton), palpus, ectal view.  
 Fig. 44. *Coras montanus* (Emerton), palpus, ventral view.  
 Fig. 45. *Coras montanus* (Emerton), embolic conductor, sub-ventral view.  
 Fig. 46. *Coras montanus* (Emerton), patella of palpus, ectal view.  
 Fig. 47. *Coras tennesseensis*, new species, embolic conductor, sub-ventral view.  
 Fig. 48. *Coras tennesseensis*, new species, patella of palpus, ectal view.  
 Fig. 49. *Coras taugynus* Chamberlin, embolic conductor, sub-ventral view.  
 Fig. 50. *Coras taugynus* Chamberlin, patella of palpus, ectal view.  
 Fig. 51. *Coras juvenilis* (Keyserling), embolic conductor, sub-ventral view.  
 Fig. 52. *Coras juvenilis* (Keyserling) patella of palpus, ectal view.