

Wolf Spider Research in the Field

Texas Lycosidae

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all images, drawings, and opinions are my own

What is a wolf spider (Lycosidae family)?

Wolf spiders are active hunters that pounce on their prey. They are often nocturnal, and their eyes reflect light in the dark. Their four posterior eyes are arranged in a rectangle or trapezoid and angled so they can see in all directions without having to move. Females carry their egg sacs and young spiderlings around with them.

Wolf spiders have spinnerets and make silk for various purposes including egg sacs, but 98% of Texas species don't make webs. Unlike some spider families, males are nearly as large as females.

Some have special skills

- some are adept at running and hopping on water
- some live in burrows which may be lined with silk
- at least one species lives up in trees
- at least some are capable of diapause, a long period of inactivity from which they can recover very quickly

adult size range of species to be shown



Texas wolf spider statistics

- 86 Lycosid species in Texas according to Dean's 2015 list of Texas spiders
- 61 Lycosid species observed and identified in Texas on iNaturalist
- over 30,300 Lycosid observations in Texas on iNaturalist representing 20% of United States and 10% of world observations
- over 10,300 Texans making observations
- over 1,700 Texans doing identifications

Texans obviously love their wolf spiders!

Traditional identification

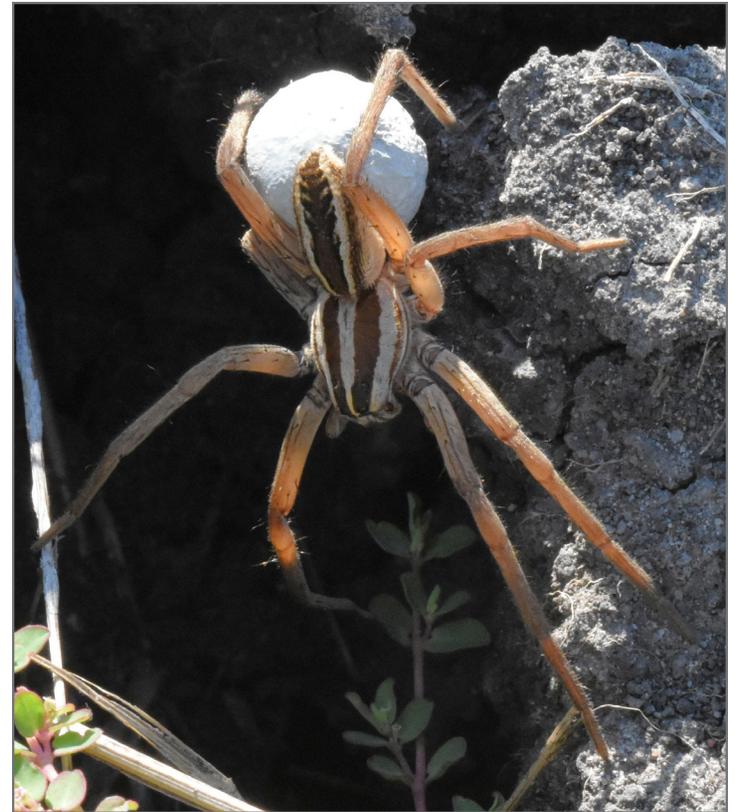
- specimens are collected, sometimes in lethal traps, preserved in alcohol, and shipped to a lab
- identification is done at the lab, primarily by microscopic examination of genitalia
- for new species, a description is eventually prepared and published
- often only adults of one sex are identifiable
- some papers do have drawings or photographs but descriptions are often inadequate to make field identifications
- some recent species were discovered due to differences in behavior rather than morphology

Field identification

- live specimens are photographed in the field
- temporary collection and handling is usually necessary to ensure a set of high quality images
- specimens can be released live, kept for observation or preserved for microscopic examination
- identification is made from photographs
- guidance for field identification is still in the early stages of development but ultimately will allow identification of any specimen regardless of age or sex
- use of multiple traits makes identification more reliable
- further development of field identification guidance increases the value of photo databases like iNaturalist

Rabidosa rabida (Rabid Wolf Spider)

best known wolf spider in Texas



Rabidosa range worksheet

<u>Piney Woods</u>	<u>rabida</u>	<u>punctulata</u>	<u>hentzi</u>
Angelina	60741677	-	-
Camp	-	-	-
Cass	39581929	-	-
Cherokee	11321964	-	-
Gregg	48172407	-	-
Hardin	4415648	-	-
Harrison	53702916	60250866	-
Jasper	83571844	8639925?	72580287
Liberty	54405900	-	-
Marion	6921136	-	141815659
Montgomery	89987091	110671030	5253373
Nacogdoches	79807164	-	13960232?
Newton	13902775	-	-

Arctosa littoralis (Shoreline Wolf Spider)



juvenile male



adult female



adult male

Pardosa mercurialis

most variable wolf spider?



Hogna antelucana (Predawn Hogna) identification is complicated but possible



juvenile male



adult female



adult male

Hogna carolinensis (Carolina Wolf Spider)



adult female
dorsal and ventral

Photo aids — spider handling



Photo aid — ventral view chamber

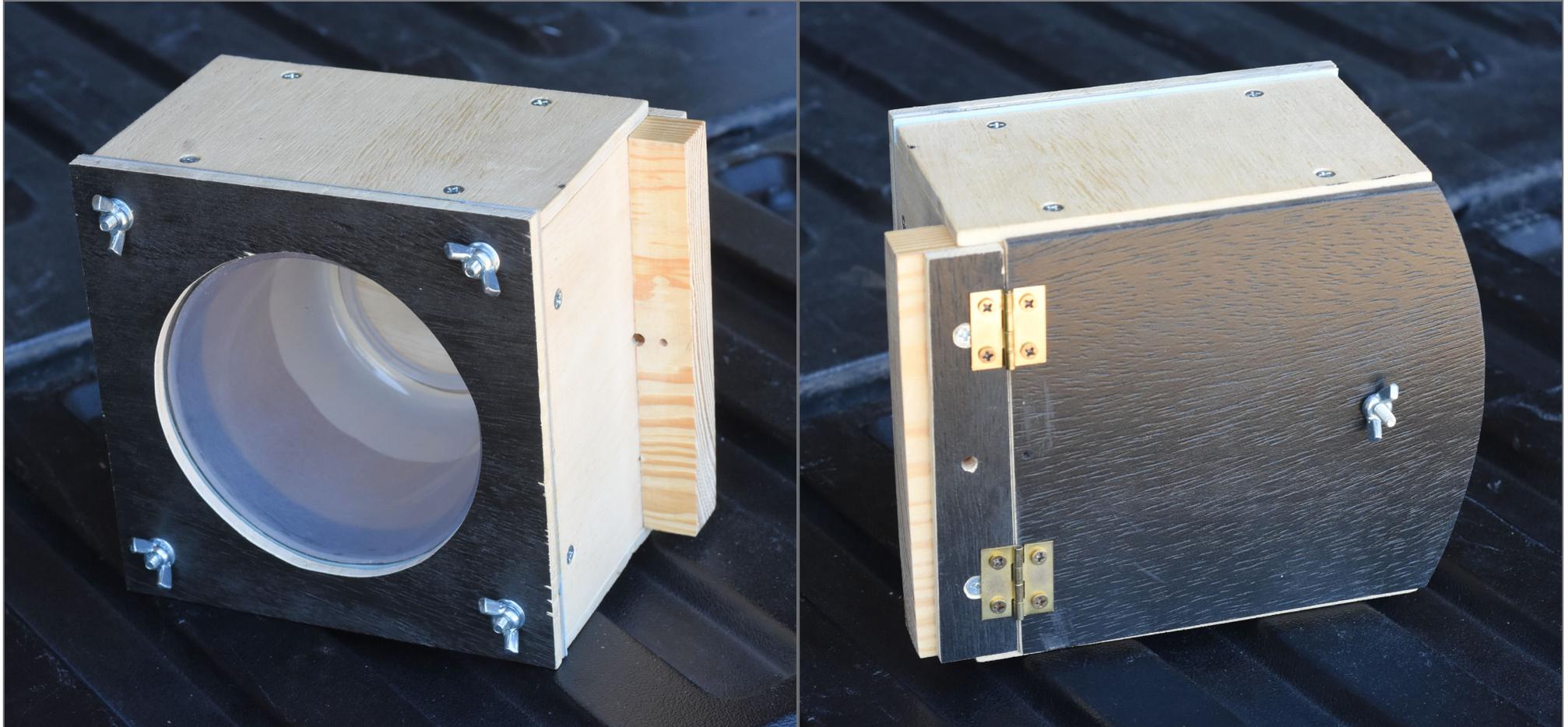
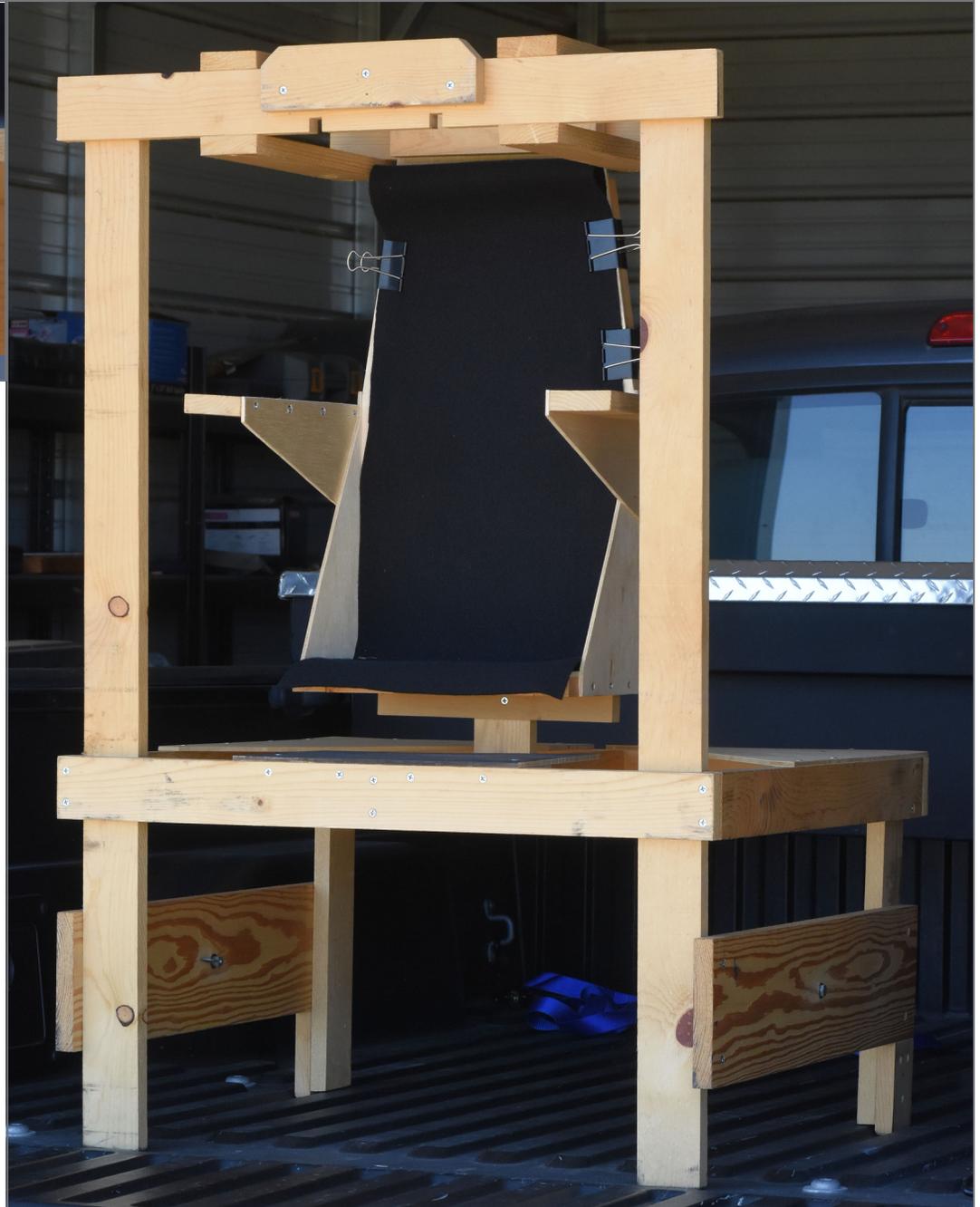


Photo aid — steady frame



Schizocosa rovneri (adult male)



S. rovnieri practice description

Male:

Specimen ID: 151317524 0.29"/7.3 mm (8351-8369), 151318127 0.29"/7.3 mm (8414-8428)

Body length: 0.29"/7.3 mm adult

Carapace: medial band bright, pale tan, brighter than female; as wide the posterior eyes in front; convexly tapering behind the head-thorax suture; ending in a short, narrow pedicel short of the end of the carapace. Sides of the band are relatively straight except for slight constrictions, the deepest being on the head-thorax suture including a slight but sharp decrease in width. Lateral dark band entirely black except for the dark brown cheeks. The lateral pale band has an even inner margin and is made up of pale tan hairs on a darker field and terminates in front with a short pale dash below the posterior lateral eyes. Edge of carapace brown bordered by forward pointing pale hairs above and below except that the top row doesn't extend beyond the thorax; dash of forward pointing pale hairs on lower cheek. Chelicerae dark brown; maxilla dark gray; labium black. See leg section for sternum

Abdomen: above: front with 3 small tufts hairs; the middle tuft is bright pale tan and the lateral tufts are black; the pale and dark bands of carapace continue on the abdomen, however the dark bands quickly taper to a point and are followed by some irregular dark blotches; the pale bands widen and gradually change to a medium brown; the cardiac and chevron areas are unmarked; a several pairs of small white marks may be present on the latter half of the abdomen, mostly in line with the dark bands. Underneath: area ahead of genital fold is dark with pale hairs in center; the trailing edge is pale except at center; the lateral areas over lungs range from gray on the outside to pale tan on the inside. The area beyond the fold is gray with a pair closely spaced dark bands converging toward the spinnerets; a pair wider pale bands are covered with sparse black hairs; the remainder of the lateral areas are medium gray with numerous small paler and darker spots; some larger dark spots trace a forward pointing ellipse just in front of the spinnerets. Alternately: the area ahead of the genital fold may be mostly covered with pale tan hairs; the central black bands may be bolder and consist of a dash and 5 spots; the ellipse alluded to above may form a bold, angular bell outline only broken between the central black bands; the black spinnerets surrounded by a tan area; the entire abdomen warmer in tone.

Legs: above: covered with short hair ranging from pale to medium brown; faint jagged banding on femora, mottling otherwise; legs below femur with fine dark hairs, more noticeable on metatarsi I and II where they form a sparse brush about twice the diameter of the metatarsus; tarsi orange-brown with black terminal spines; proximal end of femora yellow with black sides; spines black; general appearance of all legs similar in spite of small differences. Underneath: sternum black with narrow pale margin; covered with stiff, pale gray hairs; coxae (slightly reddish), trochanters, and femora medium warm gray; some darkening near joints; some pale hairs on femora; lower legs slightly darker gray with more pale hairs.

Pedipalps: Brown with paler tan hairs; cymbium gray covered with fine hair; tip slightly brownish. Alternately: the tip of the cymbium may be plain gray.

Exceptions: 149641126 (0.31"/8.0 mm) apparent juvenile since cymbium and leg segments show little darkening; carapace lateral dark band with radial pattern of pale tan hairs; cardiac mark with complete dark brown border, open only at front, with swellings behind eye spots and split tail; leg markings bold; chevrons faintly marked; 4-3-3-2 pattern of white, reflective hairs rather clear, first row not far behind eye spots, other rows terminate chevrons; venter pattern weak; chelicerae black with brown hair.

similar males: 105919808 (0.24"/6.1 mm), 149641131 (0.28"/7.9 mm), 150140725 (0.30/7.6 mm), 15140728 (0.31,7.8 mm), 149641126 (0.31"/8.0 mm); outline of cardiac mark often absent; appearance of reflective tufts varies; cymbium may be black-tipped; slight leg darkening on some

Hogna 'incognita'

benefits of collaboration



late juvenile male



adult male

Schizocosa perplexa

what could be in YOUR neighborhood?



adult male



underside female



adult female

P. mercurialis vs. A. littoralis



juvenile *P. mercurialis*



juvenile *A. littoralis*

Pardosa atlantica

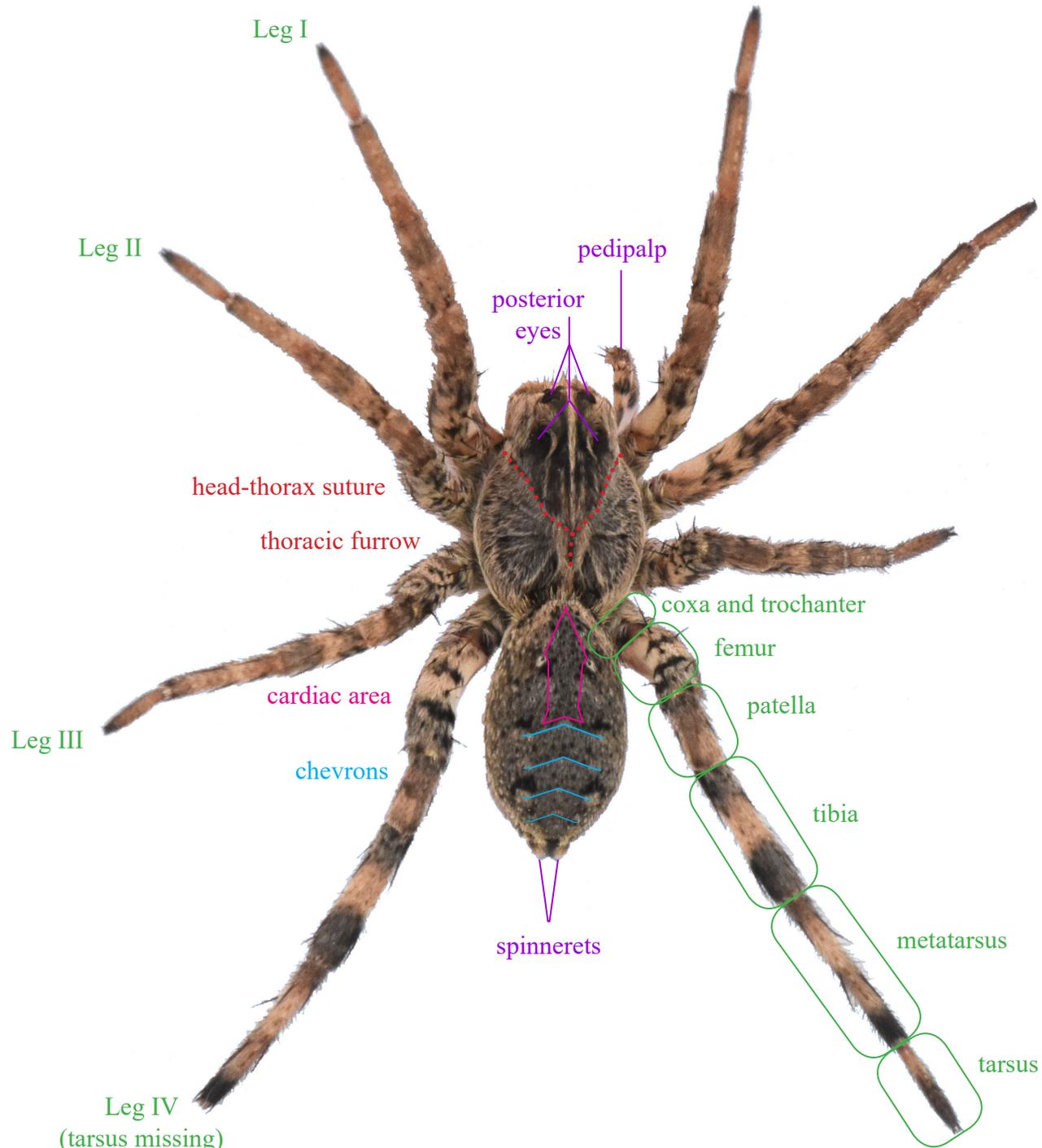


juvenile male/
adult female similar



adult male

Anatomy terms



Areas of visual interest

