THE DIAGNOSTICIANS’ CORNER

HOBO OR NOT A HOBO--THAT IS THE QUESTION...
A Photographic Key to Discerning Hobo From Non-Hobo Spiders

ABOUT THE KEY

This key is intended for use with, at a minimum, a microscope with 8-35x zoom capability. In addition to couplet choices based on anatomy, this key is accompanied by pictures taken with a Leica EZ4D stereoscope (the same scopes given to selected Utah Extension offices) to aid in identification.

The main purpose of the key is to identify the hobo spider (Agelenidae:Tegenaria agrestis) as compared to other Tegenaria species and members of the wolf spider family (Lycosidae). It does not include common Utah spiders such as the yellow sac spider (Cheiracanthium inclusum), members of the widow genus (Latrodectus), recluse spiders (Loxosceles), jumping spiders (Family Salticidae), ground spiders (Family Gnaphosidae), wood-louse spiders (Family Dysderidae), cellar spiders (Family Pholcidae), crab spiders (Family Thomisidae), running crab spiders (Family Pelodromidae), etc. For an excellent key to these other families, please see Alan Roe's photographic key to the common spiders of Utah, which will be available in the fact sheets section of the Utah Pests Web site.

For those not familiar with dichotomous keys, below is a brief example of how to use them. Also provided are commonly encountered terms associated with spider taxonomy, and a detailed list of characters that will help you work through the key.

USING DICHOTOMOUS KEYS

Dichotomous literally means “divided into two sharply distinguished classifications.” When using a dichotomous key the user chooses between two identifying characters (e.g., 2 legs or 4 legs) and then is directed to another couplet containing two more identifying characters (e.g., hooves or no hooves), etc., until the correct taxon (group) is determined. Please see the brief example below:

Example: Key out a dog.

1. Organism with 2 legs ......................... 2
   Organism with 4 legs ......................... 3

2. Organism with feathers .................... Bird
   Organism with hair .......................... 4

3. Organism with hooves ..................... Ungulate
   Organism without hooves .................. 5

4. Organism walks upright and with well-developed speech
   ................................................... Human
   Organism with long arms and swings from trees
   ................................................... Monkey

   5. Furry, barks, and demands walks twice a day
      ................................................................................. Dog
   Furry, howls, and would like to eat you
   ................................................................................. Wolf

While this example is not the most scientific, it does illustrate moving between couplets, and ending at the correct group. The hobo screening key that follows is short—only four couplets—but requires some knowledge of hobo spider taxonomy. Following is an overview of critical characters and terminology used in the key.

SPIDER TERMINOLOGY AND TAXONOMY

Unlike the key above, dichotomous keys are usually very technical, but with an explanation of the terms and labeled photographs anyone can be an expert. Please read all of the information that follows before attempting to identify a spider. For this key, understanding what plumose setae look like at 35x is paramount, so try to understand that concept before continuing.

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**GLOSSARY FOR TERMS RELEVANT TO THIS KEY:**

Anterior Eye Row (AER) - the bottom row of eyes.
Chelicera - the anterior appendages of a spider consisting of a large basal segment and an apical fang.
Cheliceral Furrow - the area between the cheliceral promargin and retromargin where the fang is positioned at rest.
Cheliceral Promargin - the margin of the cheliceral furrow that is in front (anterior) of the fang.
Cheliceral Retromargin - the margin of the cheliceral furrow that is behind (posterior) the fang.
Macrosetae or Spines - pointed rigid structures situated in a socket and capable of articulating; large thick hairs compared to standard setae.
Plumose Setae - feather- or fern-like setae that lay flat (recumbent) against the body.
Posterior Eye Row (PER) - top row of eyes.
Setae - erect or recumbent, simple, serrate, feathery, plumose, or clavate to broad scales (hairs).

All other words relating to spider body parts are illustrated below in the pictures.

**SPIDER TAXONOMY**

Figure 1. Front of head.

Figure 2. Spider eye patterns relevant to this key.

Figure 3. Spider leg.
Figure 4. View of chelicera and fangs from behind (relative to Figure 1).

Figure 5. View of chelicera and fangs from the side. Match the mouthparts with those in Figure 4 to understand the angle of the photograph.
PLUMOSE SETAE: A FAMILY-LEVEL CHARACTER FOR THE FUNNEL WEB SPIDERS (AGELENIDAE)

The key presented below is short and simplistic; however, for the key to work the user must be able to recognize plumose setae. The section below is designed to help the user understand what plumose setae look like at 35x, and compare them to macrosetae, with which they may be easily confused.

![Picture 1. Plumose setae on grass spider (Agenelopsis sp.) leg (35x: Leica EZ4D).]

![Picture 2. Plumose setae on grass spider (Agenelopsis sp.) leg (35x: Leica EZ4D).]

![Picture 3. Plumose setae on grass spider (Agenelopsis sp.) leg (35x: Leica EZ4D).]

![Picture 4. Plumose setae (translucent hairs) and macrosetae (dark hairs) on grass spider (Agenelopsis sp.) leg (23x: Leica EZ4D).]

![Picture 5. Plumose setae on hobo spider (Tegenaria agrestis) leg (65x: Zeiss Stemi 2000-C).]
Hobo Spider Screening Key
(Agelenidae: Tegenaria agrestis)

1. Spider with plumose setae (picture 6). ................................................................. 3
   Spider without plumose setae (picture 7). .......................................................... 2

2. Eye pattern as in pictures 8 and 9 .......................................................... Lycosidae: Wolf Spiders
   Eye pattern not as in pictures 10 and 11 .......................................................... See Roe key online

3. Eye pattern as in picture 12 .......................................................... Agenelopsis sp.(Agelenidae): Grass Spider

   Picture 6. Plumose setae on grass spider (35x: Leica EZ4D).
   Picture 7. Straight hairs (without plumose branching) on a wolf spider leg (35x: Leica EZ4D).

   Pictures 10 and 11. Anterior view of grass spider, and hobo/domestic spider, eye patterns (35x: Leica EZ4D).

   Eye pattern as in pictures 13 and 14 .......................................................... 4


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4. Cheliceral retromargin with 6 to 8 teeth with medial 2 teeth usually smaller (picture 15); legs without black bands (picture 17-B)  
  
  6-8 teeth on retromargin

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<th>6-8 Teeth on retromargin</th>
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- Tegenaria agrestis (Agelenidae): Hobo Spider

Cheliceral retromargin with 3 to 5 teeth (picture 16); legs with black banding (picture 17-A)

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<tr>
<th>3-5 Teeth on retromargin</th>
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- Tegenaria domestica (Agelenidae): Domestic House Spider

-ryan Davis, Arthropod Diagnostician

Author’s note: This article, as well as the “Key to Common Utah Spiders” by Alan Roe, will be available as fact sheets on the Utah Pests web site in the near future.