

# Texas Pest Ant Identification: An Illustrated Key to Common Pest Ants and Fire Ant Species

**Jerry L. Cook**

Sam Houston State University

**Sean T. O’Keefe, S. Bradleigh Vinson**

Department of Entomology, Texas A&M University

**Bastiaan M. Drees**

Extension Entomologist Emeritus

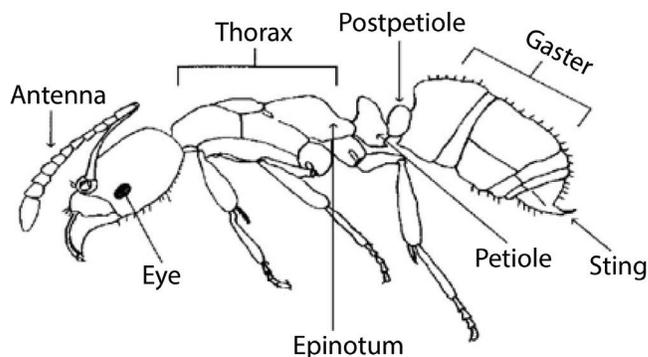
Texas A&M AgriLife Extension Service

Ants belong to the family of insects called Formicidae and are in the order Hymenoptera, which also includes bees, sawflies, and wasps. There are over 291 species of ants (Hymenoptera: Formicidae) in Texas (see [The Common Ant Genera of Texas](#), a full-color identification key to the common ant genera of Texas).

Most ant species are not considered to be pests. They are, in fact, beneficial insects that prey upon other insects, collectively till more soil when making their nests than do earthworms, and are important parts of our ecosystem. We now recognize that the preservation of certain native ant species is our best defense against abnormally high populations of the red imported fire ant, *Solenopsis invicta* Buren (see [Natural Enemies of Fire Ants](#)).

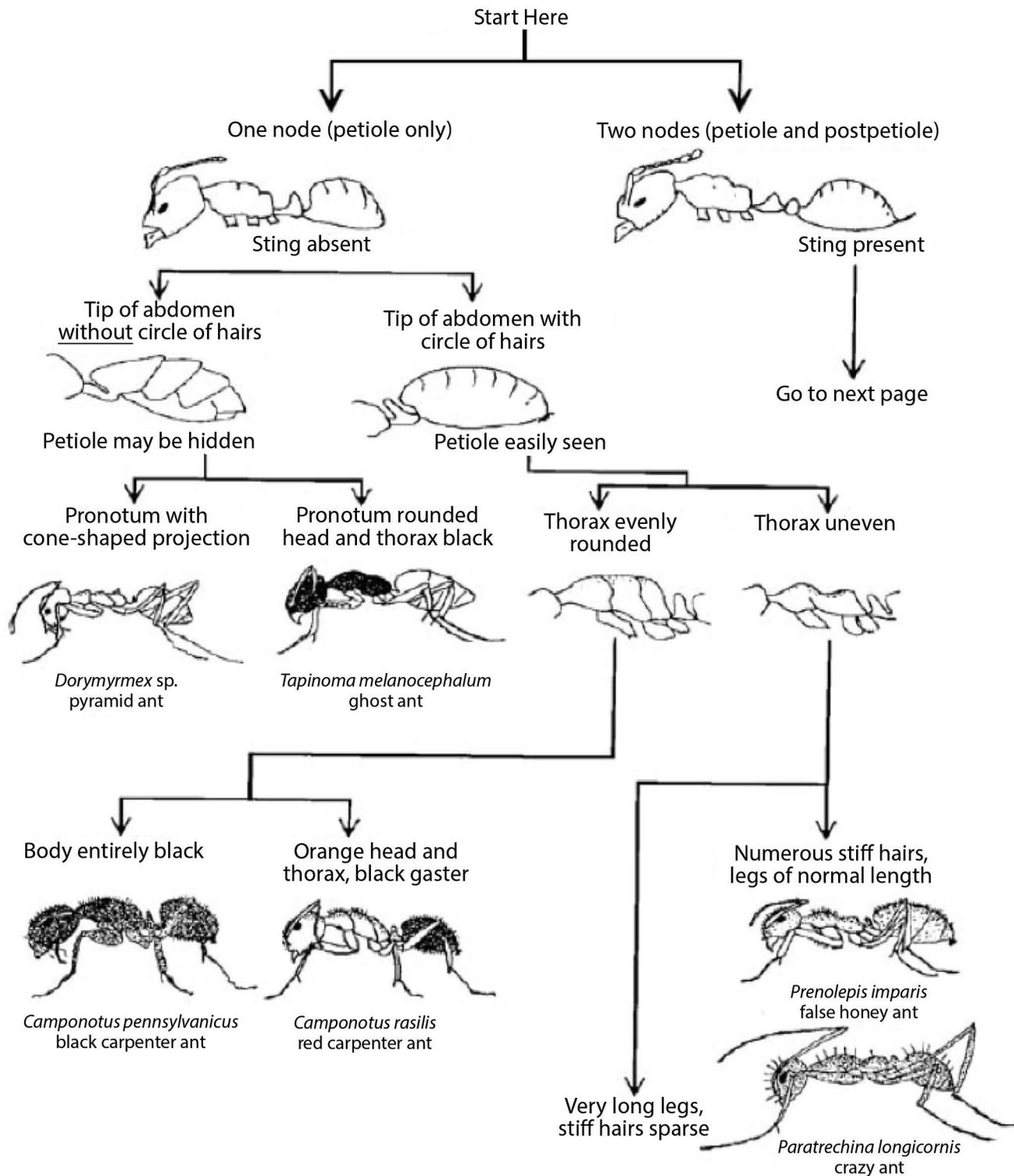
Identification of properly preserved ant specimens is not difficult with a good magnifying lens or dissecting microscope and light source. The ant identification keys presented below are in both written and illustrated forms. In either case, begin at the top of the key and compare the options presented in the first couplet (a pair of statements or illustrations) to the specimen’s characteristics. Choose the one that matches the specimen and proceed down the key until you find the proper identification.

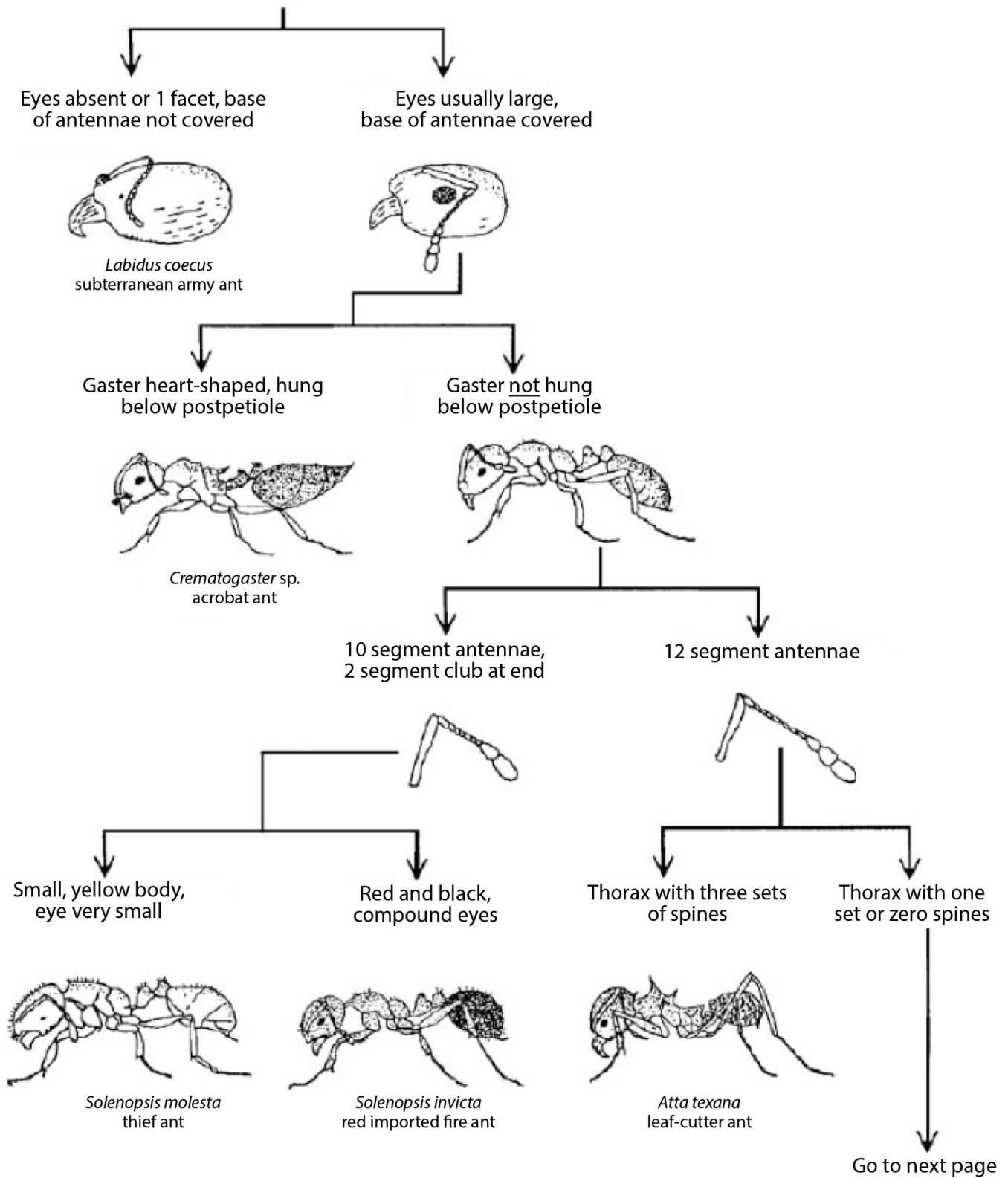
These keys were prepared for common ant species found in and around the home and considered to be pests. You may not be able to identify some specimens or rare species using this set of keys, although they may be identified as belonging to a particular group of species. The illustration below provides the identification terms used in this key.

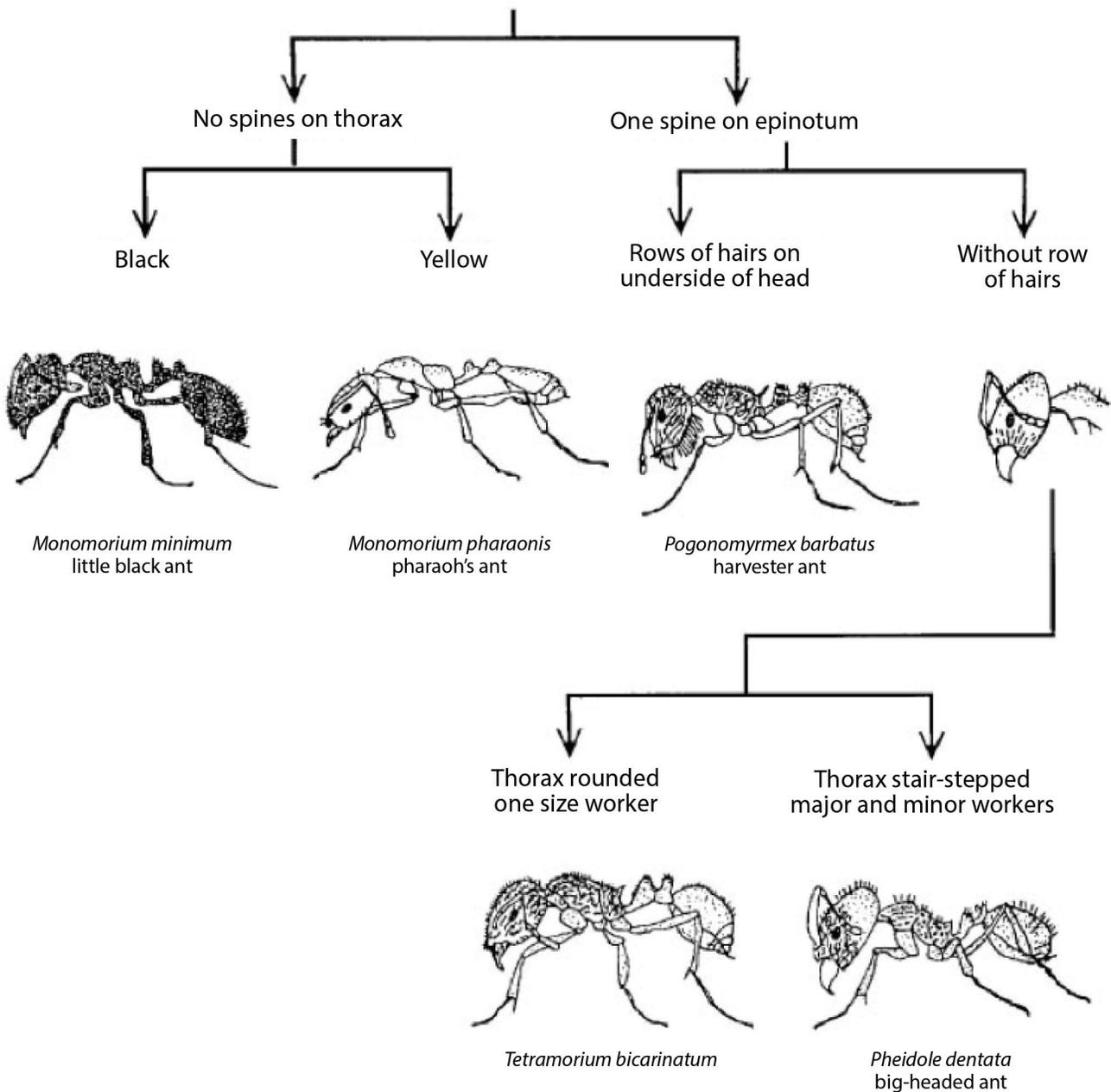


# Texas Pest Ant Identification: An Illustrated Key

Start at the top and decide on the character (key feature) described, then proceed to the next question or couplet.







**NOTE:** The genus, *Paratrechina*, has been revised and although the black crazy ant, *P. longicornis*, remains in this genus, this couplet may also key out *Nylanderis* species, such as the Tawny (Raspberry) or tawny crazy ant, (*N. fulira fulva*), found in localized infestations

of over 20 Texas counties from 2000 to 2012. See [Urban Entomology](#) to download an [Ant Sample Submission Form](#) to submit ant samples for identification to the [Texas A&M University Center for Structural and Urban Entomology](#).

# Identification of Common Pest Ant Species in Texas: A Written “Key”

1	Petiole present (one node); sting absent . . . . .	2
	Petiole and postpetiole present (two nodes); sting present . . . . .	8
2(1)	Tip of abdomen without a circle of hairs (subfamily Dolichoderinae) . . . . .	3
	Tip of abdomen with a circle of hairs (subfamily Formicinae) . . . . .	6
3(2)	Petiole (node) hidden by gaster; rotten odor when crushed . . . . .	4
	Petiole (node) not hidden by abdomen . . . . .	5
4(3)	Body entirely brown . . . . . <i>Tapinoma sessile</i> , odorous house ant	
	Head and thorax black, gaster yellow . . . . . <i>Tapinoma melanocephalum</i> , ghost ant	
5(3)	Epinotum with a cone-shaped projection. . . . . <i>Dorymyrmex pyramicus</i> , pyramid ant	
	Epinotum rounded, without a cone-shaped projection . . . . . . . . . . <i>Linepithema humile</i> , Argentine ant	
6(2)	Thorax evenly rounded when viewed from side . . . . . <i>Camponotus</i> spp., carpenter ants	
	Thorax uneven along top surface when viewed from side. . . . .	7
7(6)	Legs and antennae very long in proportion to body; stiff hairs sparse . . . . . . . . . . <i>Paratrechina longicornis</i> , crazy ant	
	Legs and antennae in proportion to body; stiff hairs abundant . . . . . . . . . . <i>Prenolepis imparis</i> , false honey ant	
8(1)	Gaster hung below petiole and postpetiole, which is attached to the dorsal surface of the gaster; gaster heart-shaped. . . . . <i>Cremagaster</i> spp., acrobat ants	
	Postpetiole connected to base or middle of abdomen . . . . .	9
9(8)	Antennae with 10 segments, the last 2 enlarged to form a club . . . . .	10
	Antennae with 12 segments, the last 3 sometimes forming a club . . . . .	11

10(9)	Very small, yellow ants. ....	<i>Solenopsis molesta</i> , thief ant	
	Medium-sized, red and brown ants, at least two sizes of workers .....	<i>Solenopsis invicta</i> , red imported fire ant	
11(9)	Epinotum rounded, without spines .....		12
	Epinotum with one pair of spines .....		13
12(11)	Yellow brown ants. ....	<i>Monomorium pharaonis</i> , pharaoh's ant	
	Black ants .....	<i>Monomorium minimum</i> , little black ant	
13(11)	Ventral head with long hairs, resembling a beard. ....	<i>Pogonomyrmex barbatus</i> , red harvester ant	
	Ventral head with or without hairs, but never with a row of long hairs .....		14
14(13)	Head and thorax with distinct grooves throughout .....	<i>Tetramorium caespitum</i> , pavement ant	
	Head and thorax smooth or head and thorax sculptured, but not with distinct grooves throughout .....		15
15(14)	Two sizes of workers, larger workers with enlarged heads. ....	<i>Pheidole</i> spp., big-headed ants	
	One size of workers, last segment of antennae is elongated .....	<i>Wassmannia auropunctata</i> , little fire ant	

# Texas Fire Ant Identification: An Illustrated Key

There are six known species of fire ants (*Solenopsis* species of the *geminata* group) in the United States, five of which are found in Texas. Of these, four are native species and the fifth is the accidentally introduced red imported fire ant. Another imported species, the black imported fire ant (*Solenopsis richteri*) does not live in Texas (see [Geographic Distribution of Fire Ants](#)). Although the four native species are called fire ants, they are much less aggressive and numerous than the imported species.

The first question is whether or not you have fire ants. If the ants are aggressive, at least 3 millimeters long, and rapidly run up any object placed into their nest, they are probably fire ants. If they try to bite and sting the object, then it is a good bet they are fire ants. To confirm, look at the region between the epinotum and gaster (Fig. 1), and if two nodes (petiole and postpetiole) are present and the antennal club is two-segmented, then they are fire ants.

Identifying the specific species of fire ant is easier if you have access to a microscope and a good light source. Many of the features used to identify fire ants to species are small and hard to see. To use this identification key, examine

at least six to 10 major workers (the larger, wingless worker ants in a colony) because the character (key features) used for identification might not be fully developed in all individuals of the colony; they are easiest to see on the major workers.

Examining only one worker may lead to an incorrect identification. To use the identification key, begin at the top and compare the options in the first pair of statements and illustrations to the specimen(s) you have. Choose the figure and statement that matches the specimen(s) you have and then proceed down the key until the ant is properly identified.

**Red imported fire ant** (*Solenopsis invicta* Buren). Only the red imported fire ant has a median clypeal tooth and a striated mesepimeron (see figures), although these may be difficult to see at first. Other characters that might help in the identification include: 1) the antennal scape nearly reaches the vertex, 2) the postpetiole is constricted at the back half, and 3) the petiolar process is small or absent. The red imported fire ant is widespread in the eastern two-thirds of the state and has also been found around El Paso.

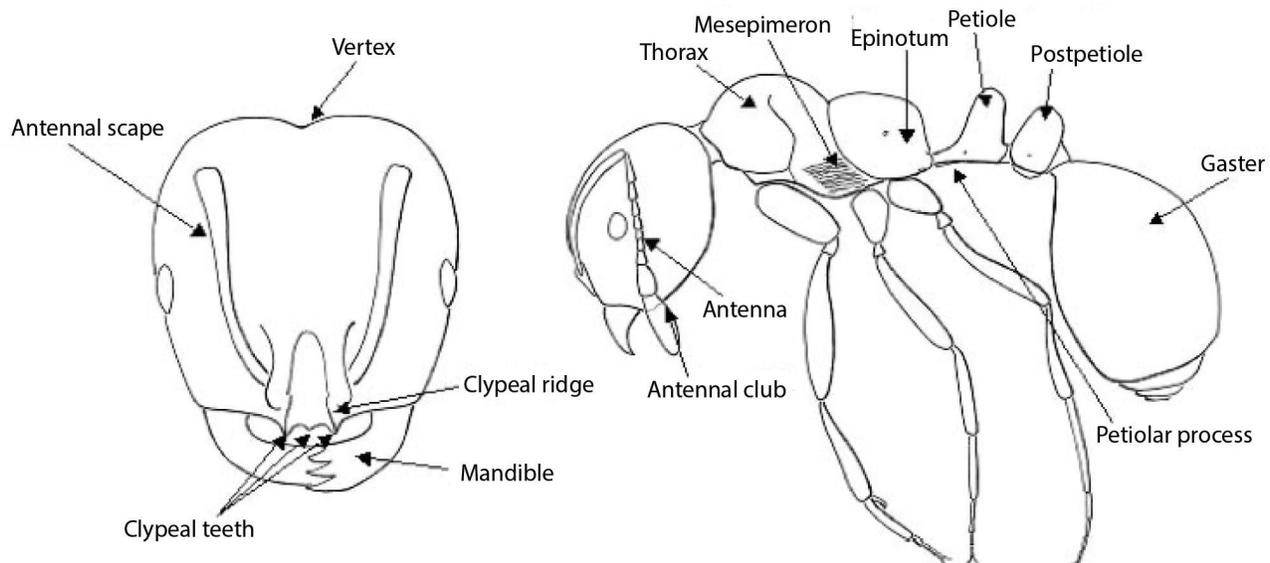


Figure 1. Anatomical features of *Solenopsis* fire ants.

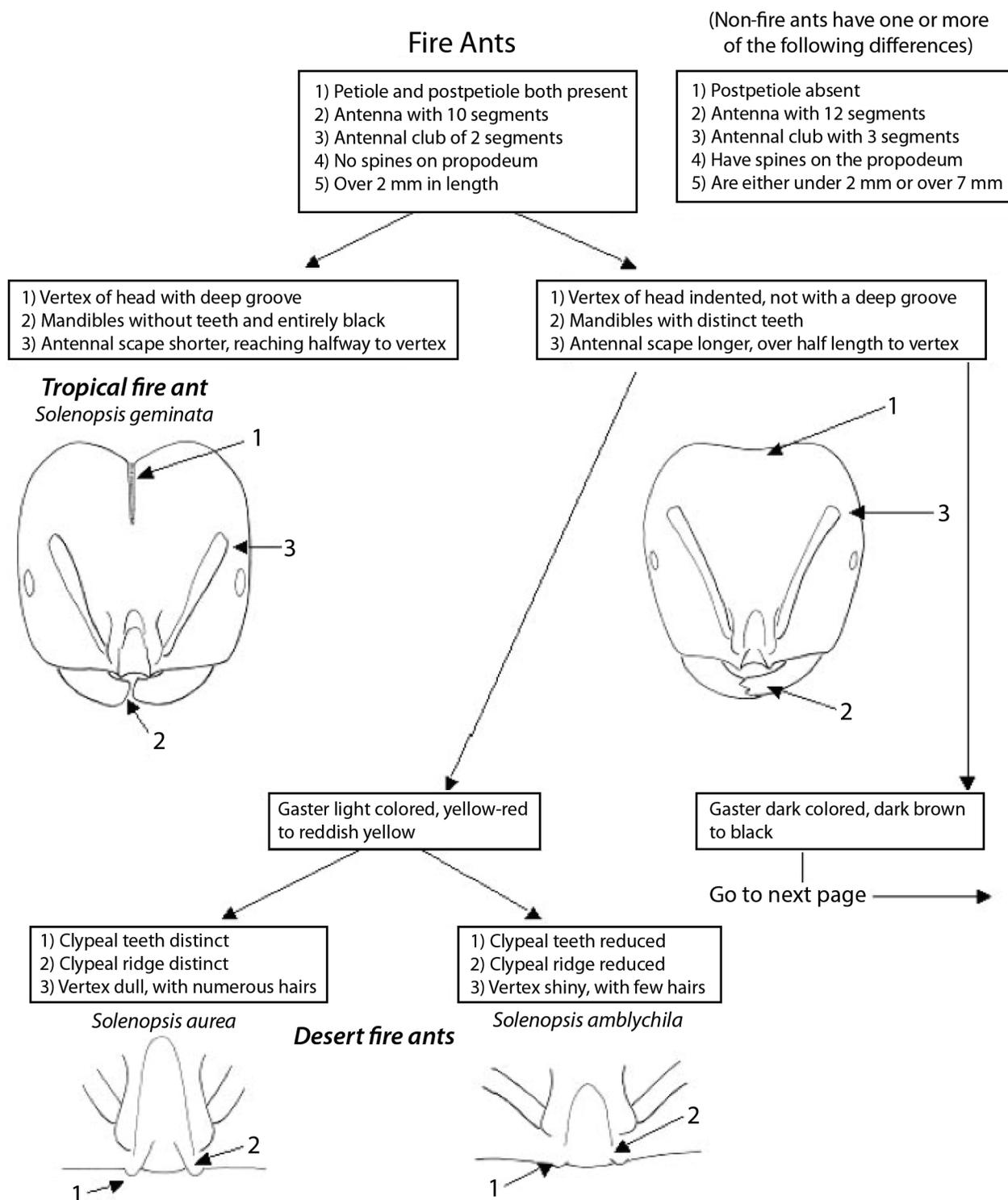
**Tropical fire ant** (*Solenopsis geminata* [Fabricius]). The most distinguishing characteristic of this species is the relatively larger, parallel-sided head with a deep, median, lengthwise groove down the middle of the vertex. Other features that might help in the identification include: 1) smaller or absent petiolar process (also not found in the red imported fire ant) and 2) the antennal scape goes only about halfway to the vertex. Tropical fire ants were once widespread in the eastern half of the state and central Hill Country, but are quickly being replaced by red imported fire ants.

**Southern fire ant** (*Solenopsis xyloni* McCook). Of all the native fire ants, the southern fire ant

looks the most like the red imported fire ant. The southern fire ant can be identified by its brown to black color, well-developed petiolar process, and no median clypeal tooth. The southern fire ant is widespread throughout the eastern, southern, and southwestern parts of Texas. Genetic methods are now available for more accurate identification if only minor workers are available.

**Desert fire ants** (*Solenopsis aurea* Wheeler and *Solenopsis amblychila* Wheeler). Both of these species are yellowish-red to reddish-yellow (whereas all other fire ants are light to dark brown) and have a well-developed petiolar process. Both species are found in desert areas in western Texas.

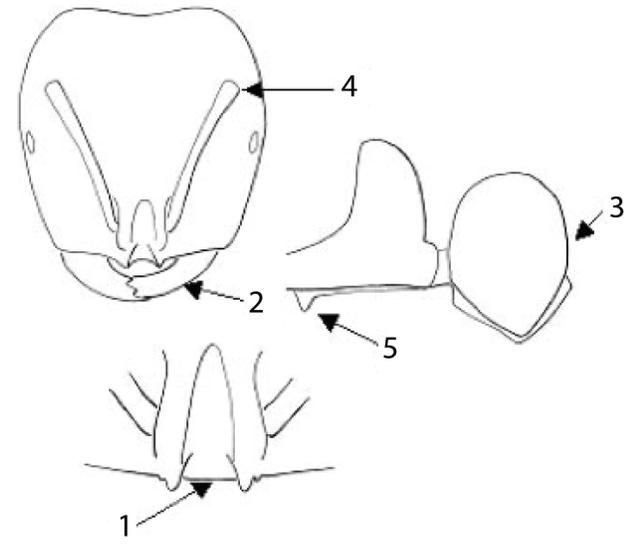
# Identification Guide to the Major Workers of the Fire Ants of Texas



Gaster dark colored, dark brown to black

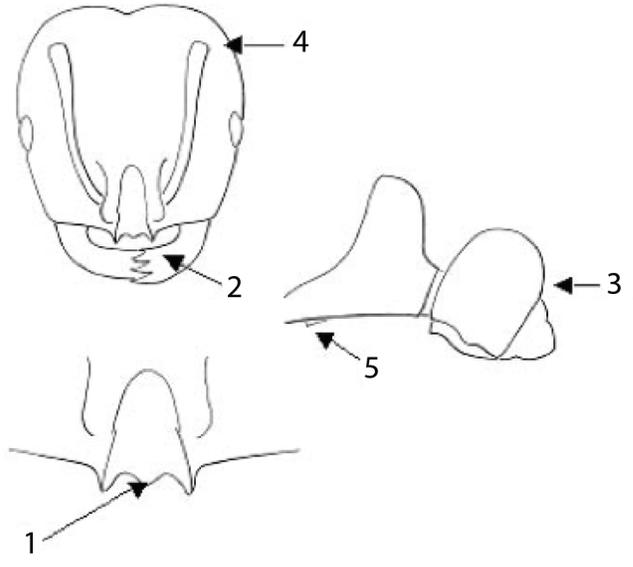
- 1) Clypeus without median tooth
- 2) Mandible with 3 teeth
- 3) Postpetiole rounded
- 4) Antennal scape reaches halfway between eye and vertex
- 5) Petiole with distinct petiolar process

**Southern fire ant**  
*Solenopsis xyloni*



- 1) Clypeus with median tooth
- 2) Mandible with 4 teeth
- 3) Postpetiole indented
- 4) Antennal scape reaches three-fourths or more between eye and vertex
- 5) Petiolar process either reduced or absent

**Red imported fire ant**  
*Solenopsis invicta*



## CITATIONS

Hung, A., Barlin, M. R., and Vinson, S. B. 1977. Texas Agricultural Experiment Station No. 1185.

O'Keefe, S. T., J. L. Cook, T. Dudek, D. F. Wunneburger, M. D. Guzman, R. N. Coulson, and S. B. Vinson. 2000. "The Distribution of Ants in Texas." *Southwestern Entomologist*, Supplemental Issue No. 22. 92 pages. Posted at <http://sswe.tamu.edu>.

Trager, J. C. 1991. "A Revision of the Fire Ants *Solenopsis geminator* Group (Hymenoptera: Formicidae: Myrmicinae)." *Journal of the New York Entomological Society*, 99(2): 141–198.

Vinson, S. B., S. O'Keefe and J. Cook. 2003. *The Common Ant Genera of Texas*. B-6138. Texas A&M AgriLife Extension Service and Texas A&M AgriLife Research, The Texas A&M University System. 44 pages. Posted at <http://agrilifebookstore.org/product-p/b-6138.htm>

## REFERENCES

*The Common Ant Genera of Texas*  
[www.agrilifebookstore.org/product-p/b-6138.htm](http://www.agrilifebookstore.org/product-p/b-6138.htm)

*Natural Enemies of Fire Ants*  
[www.extension.org/pages/30546/natural-enemies-of-fire-ants](http://www.extension.org/pages/30546/natural-enemies-of-fire-ants)

*Urban Entomology*  
[urbanentomology.tamu.edu](http://urbanentomology.tamu.edu)

*Ant Sample Submission Form*  
[urbanentomology.tamu.edu/pdf/forms/AntIDform.pdf](http://urbanentomology.tamu.edu/pdf/forms/AntIDform.pdf)

*Texas A&M University Center for Structural and Urban Entomology*  
[urbanentomology.tamu.edu](http://urbanentomology.tamu.edu)

*Geographic Distribution of Fire Ants*  
[www.extension.org/pages/9725/geographic-distribution-of-fire-ants](http://www.extension.org/pages/9725/geographic-distribution-of-fire-ants)

*Managing Red Imported Fire Ants in Urban Areas*  
[www.extension.org/pages/11004/managing-imported-fire-ants-in-urban-areas-printable-version](http://www.extension.org/pages/11004/managing-imported-fire-ants-in-urban-areas-printable-version)

*Broadcast Baits for Fire Ant Control*  
[www.agrilifebookstore.org/product-p/e-628.htm](http://www.agrilifebookstore.org/product-p/e-628.htm)

*Fire Ant Control: The Two-Step Method and Other Approaches*  
[www.agrilifebookstore.org/product-p/ento-034.htm](http://www.agrilifebookstore.org/product-p/ento-034.htm)

For more information regarding fire ant management, see Extension publications *Managing Red Imported Fire Ants in Urban Areas*, *Broadcast Baits for Fire Ant Control*, or *Fire Ant Control: The Two-Step Method and Other Approaches* posted on <http://AgriLifeBookstore.org>.

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M AgriLife Extension Service is implied.

Texas A&M AgriLife Extension Service

[AgriLifeExtension.tamu.edu](http://AgriLifeExtension.tamu.edu)

More Extension publications can be found at [AgriLifeBookstore.org](http://AgriLifeBookstore.org)

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, religion, national origin, age, disability, genetic information, or veteran status.

The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.