



Texas Fire Ant Identification: An Illustrated Key

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Texas has more than 260 species of ants, only a few of which are household or garden pests (see [FAPFS010](#) for identification of non-fire ant pest ants). Many native ants, including native fire ant species and some harmless introduced ant species, are potential or known competitors of the red imported fire ant, *Solenopsis invicta* Buren (Hymenoptera: Formicidae). Fire ant mounds or nests differ from many native/competitor ant species because they have no central openings. Worker fire ants leave the colony using underground tunnels that open to the surface away from the mound.

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. 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 you have fire ants. If the ants are aggressive, at least 3 mm 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 (see figure below), 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 because 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 ten major workers (the larger, wingless worker ants in a colony) because the characters 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.

A technical identification key to all species of fire ants in North and South America was published by J.C. Trager in 1991 (*Journal of the New York Entomological Society* 99 (2): 141-198). A very useful older work that includes numerous scanning electron pictures was published by A. Hung, M.R. Barlin, and S.B. Vinson in 1977 (*Texas Agricultural Experiment Station Bulletin* No. 1185). An updated, more detailed identification guide is being prepared by Jerry Cook, who is also studying specimens possibly representing a new species of native fire ant found around Corpus Christi, Texas. This potential new species would be identified as a tropical fire ant (*Solenopsis geminata*) in the key below.

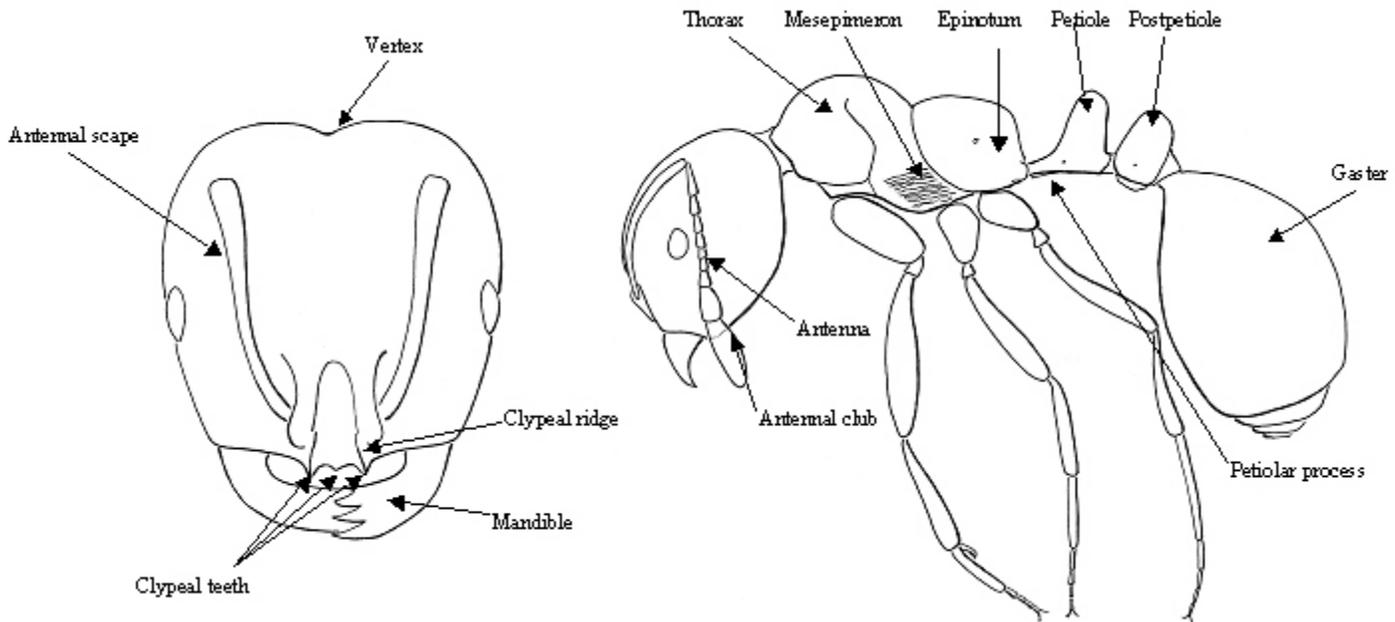
Red imported fire ant (*Solenopsis invicta* Buren): Only the red imported fire ant has a median clypeal tooth and a striated mesepimeron (see figures); although these may be difficult to see at first. Other characters that might help in the identification include: 1) the antennal scape nearly reaches the vertex, 2) the post-petiole is constricted at 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.

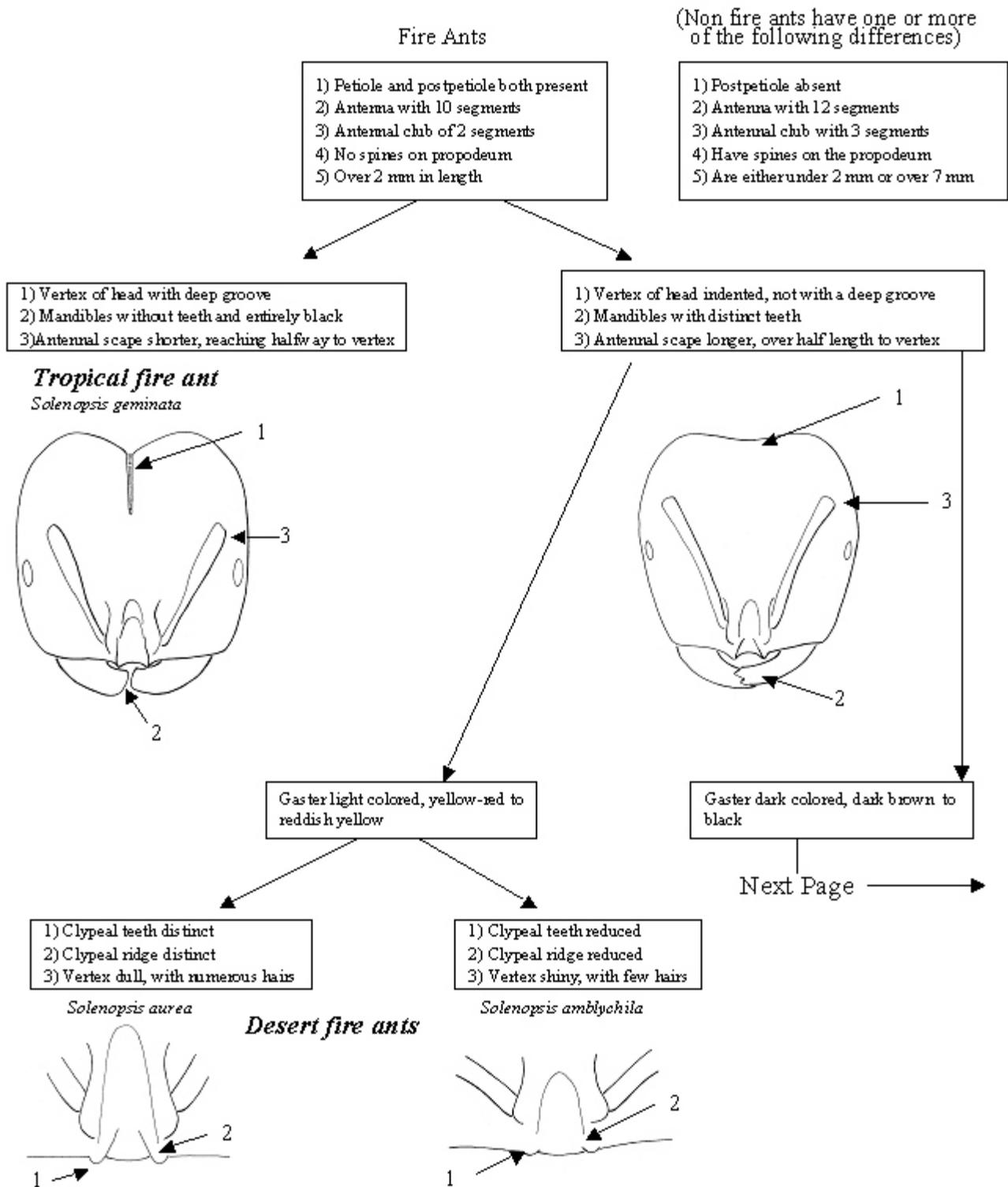
Tropical fire ant (*Solenopsis geminata* [Fabricius]): The most distinguishing characteristic of this species is the relatively larger, parallel-sided head with a deep, median, lengthwise groove down the middle of the vertex. Other features that might help in the identification include: 1) smaller or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

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.



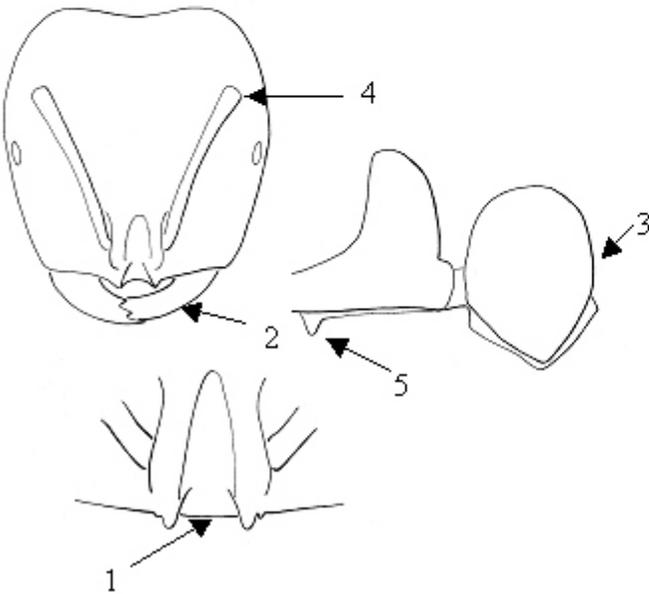
Identification Guide to the Major Workers of the Fire Ants of Texas



Gaster dark colored, dark brown to black

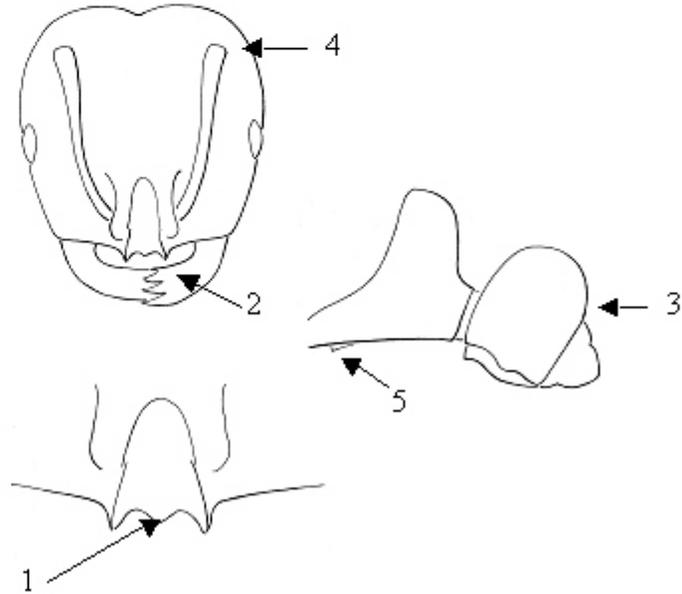
- 1) Clypeus without median tooth
- 2) Mandible with 3 teeth
- 3) Postpetiole rounded
- 4) Antennal scape reaches half way between eye and vertex
- 5) Petiole with distinct petiolar process

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



For more information regarding fire ant management, see Extension publications [B-6043, Managing Red Imported Fire Ants in Urban Areas](#); [B-6076, Managing Red Imported Fire Ants in Agriculture](#); [B-6099, Broadcast Baits for Fire Ant Control](#); or [L-5070 The Texas Two-Step Method Do-It-Yourself Fire Ant Control for Homes and Neighborhoods](#). Also visit our web site at <http://fireant.tamu.edu>.

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