



## PHARAOH ANT

Pharaoh ants, *Monomorium pharaonis*, are becoming a serious nuisance in the Pacific Northwest. They are particularly bothersome in multifamily buildings and in hotels, condominiums, warehouses, grocery stores, or other places where food is abundant or is frequently handled. Because they are omnivorous and have the obnoxious habit of getting into virtually everything, pharaoh ants can also pose a serious health threat in hospitals and veterinary clinics where they are attracted to intravenous units, medical preparations, and open wounds.

Historically, pharaoh ants are believed to have come from Africa sometime during the last century. The name originated with Linnaeus and his mistaken belief that these ants were one of the biblical plagues, along with flies and locusts, during the time of the Egyptian pharaohs.

### Description and Biology

All workers are approximately the same size (monomorphic) and are approximately  $\frac{1}{16}$  inch long. They are yellow or light brown to reddish, although the tip of the abdomen may be somewhat darker. The petiole or waist has two nodes (segments), and the thorax is without spines (Fig. 1). The antennae have 12 segments; the last three segments end in a distinctive club. Pharaoh ants may be confused with another Washington resident, the thief ants, *Solenopsis molesta*, which are similar in color but slightly smaller in size. However, the antennae of the thief ant has only 10 segments; the last two segments end in a distinctive club (Fig. 2). Wing venation can also be used to separate these two ants if reproductive (winged) forms are present (Fig. 3).

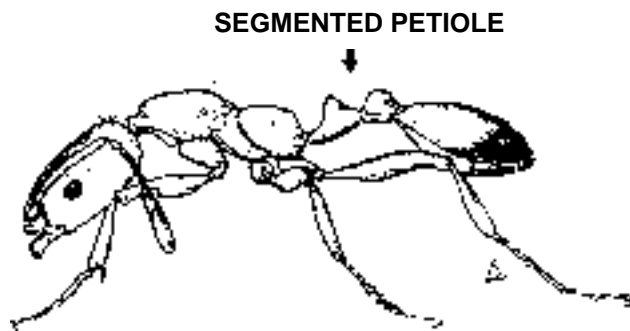


Fig. 1. Pharaoh ant\*, *Monomorium pharaonis*.



Fig. 2. Thief ant\*, *Solenopsis molesta*.

\*Figures 1 and 2 have been redrawn from USDA Tech. Bull. No. 1326.



Fig. 3a. *Monomorium*\* sp. forewing.



Fig. 3b. *Solenopsis*\* sp. forewing.

\*Figures 3a and 3b have been redrawn from Bull. Comp. Zool. 204.

Although pharaoh ants feed on a wide variety of foodstuffs, including syrups, sugar, honey, cake, breads, and butter, they apparently prefer grease, meat, and fat.

These ants nest almost anywhere and in some very unusual places—under houseplants, between books, in appliances, between sheets of linen, in wall voids, and even in stored clothing. Nest sites are usually associated with favorable humidity, temperature, and light, not with proximity to food. Pharaoh ants will forage fairly long distances from their nesting sites—up to 115 feet or more—in search of food. They are frequently found around food dishes used for pets, dripping faucets, or other places where food and water are consistently present. While these ants make and use chemical trails, they do not always follow the same paths. Their nests may be difficult for untrained personnel to find based on observations of ant movements.

Pharaoh ants have become particularly well adapted to living in close association with people. They prefer areas where the temperature is about 80°F and the humidity 80%, but they do well within a moderate range on either side of these figures.

Pharaoh ants have evolved some habits that enable them to spread out within a structure, and make it difficult for people to locate their nests. Colonies nearly always contain many queens (polygynous). These ants do not have nuptial flights or exhibit territorial behavior. New colonies are created by “budding.” In this procedure, a portion of the colony, including several to many queens, simply moves away (sometimes very short distances). Geographical spread of these ants by their own devices would prob-

ably be slow; however, their cosmopolitan occurrence suggests that human activities have helped distribute them throughout the world.

Breeding takes place throughout the year. Development from egg to adult typically takes 38–42 days. Adult workers usually live for about 9 or 10 weeks, while queens can live a year or more. Males probably live fewer than 3 weeks.

### Control

Conventional pesticide applications are usually ineffective, because chemicals generally repel these ants, and repelling them sometimes causes colonies to move or even split into several colonies. The most practical control measure against pharaoh ants is use of baits. Bait toxicants consist of boric acid, the insect growth regulator methoprene (Pharorid®), or hydramethylnon (Maxforce Ant Killer® Bait Stations). Boric acid and methoprene toxicants are customarily mixed with mint flavored apple jelly, strained egg yolk, peanut butter, liver powder or other protein, and honey. Baits must include both carbohydrate and protein bases. Apparently, ants will stop coming to single-base baits after a period of time.

Both methoprene and boric acid baits can be used for good control, but methoprene prevents larvae from reaching adulthood. Unfortunately, baiting with this material takes 30–50 days or more to achieve control. Methoprene does not kill adult ants, and many people may be unwilling to wait the necessary period of time to see results. The bait material containing hydramethylnon achieves control much faster than the methoprene or boric acid baits. Control is

apparent in 5 days or less. The key to success in any bait program is that the toxicant must work slowly enough to allow the ants to distribute the bait throughout the colony, and especially to the queens before it starts to kill them.

## Using a Bait Program

A bait program is the best method for controlling pharaoh ants. However, baiting must be done correctly or it will not work. Colonies are most susceptible to control by baits when they are strong and active. *Never* treat ants with insecticides before beginning a bait program. If the ants have been poisoned prior to baiting, the program will probably be ineffective. Baiting will also be ineffective if the ants have access to foods other than the baits. Sanitation is a key to a successful baiting program.

Several commercial bait formulations are available for control of pharaoh ants. These have been used successfully in several geographical areas, particularly in California. Some come with bait dispensers, some do not. You can make bait dispensers at home using readily available containers such as pill boxes, small plastic caps, or even sections of straws. Measure the toxicant exactly and mix it thoroughly in the bait. The only readily available homeowner material for incorporating into a bait is boric acid. Most people prefer to use commercial preparations.

Place the bait stations in locations where the ants are most active, but where children and pets cannot reach them. Preferred baiting locations are under and inside counters, between the refrigerator and wall, or in other locations away from children, pets, and cooking utensils. Replace the bait as soon as the ants remove it or when it becomes dry and unattractive. Baiting with boric acid or methoprene must continue for several weeks. Baits using hydramethylnon as the toxicant are effective much faster; baiting for a week is probably adequate.

After foraging ants spread the boric acid or methoprene baits throughout the colony over a period of 4–6 weeks, use of a registered pesticide to spray the colony is recommended for complete kill.

You can apply sticky materials, such as Vaseline®, double-stick Scotch® tape, etc., to bed and table legs, and to poles holding intravenous fluids, to keep ants from being a nuisance in these areas.

Again—keep foods not included in the bait program away from pharaoh ants; allowing access to other food will only slow the process. Keeping counter tops clean and using other sanitation measures will enhance your bait program.



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Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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