THE LIFECYCLE OF A TERMITE COLONY

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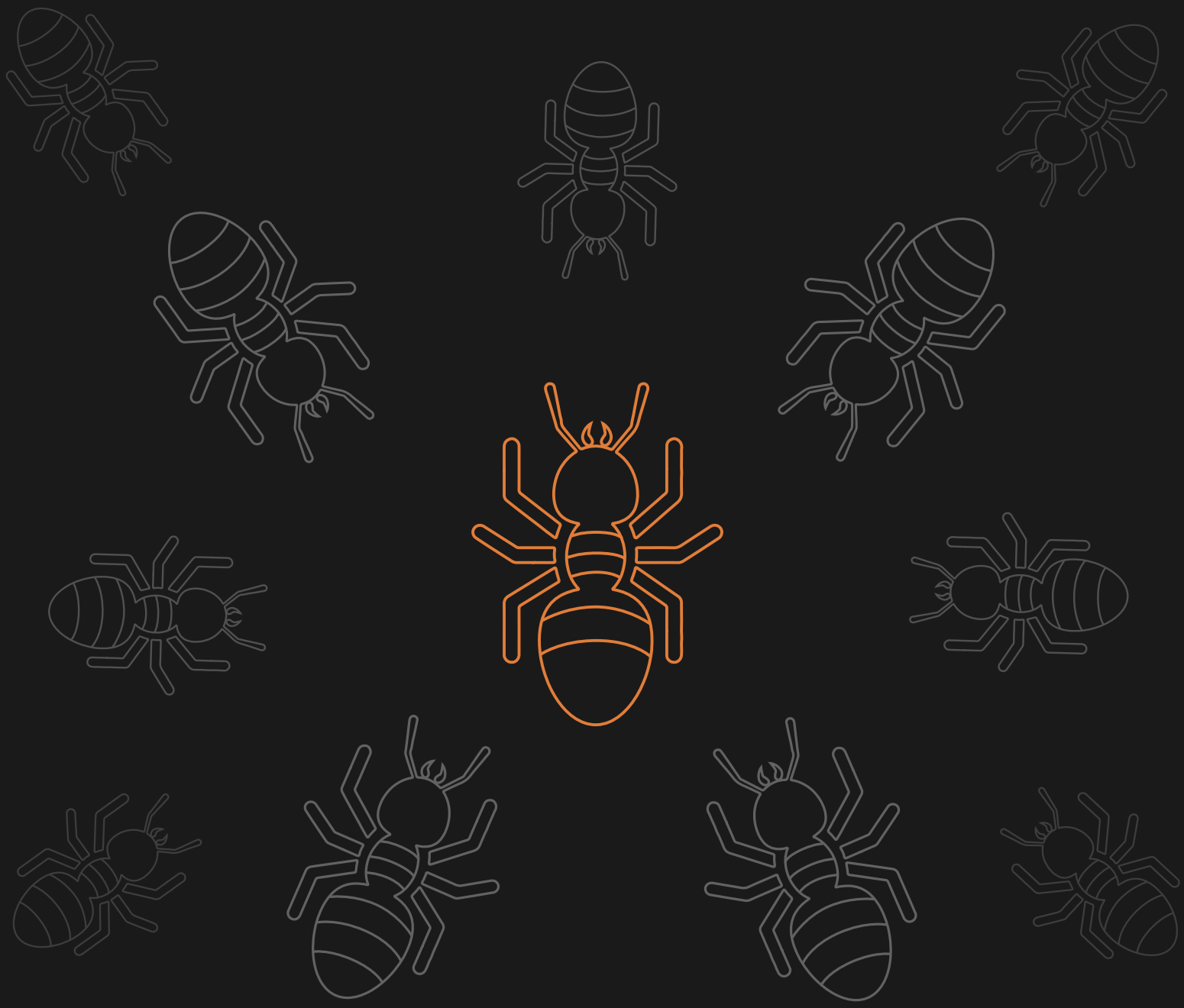
PEST MANAGEMENT



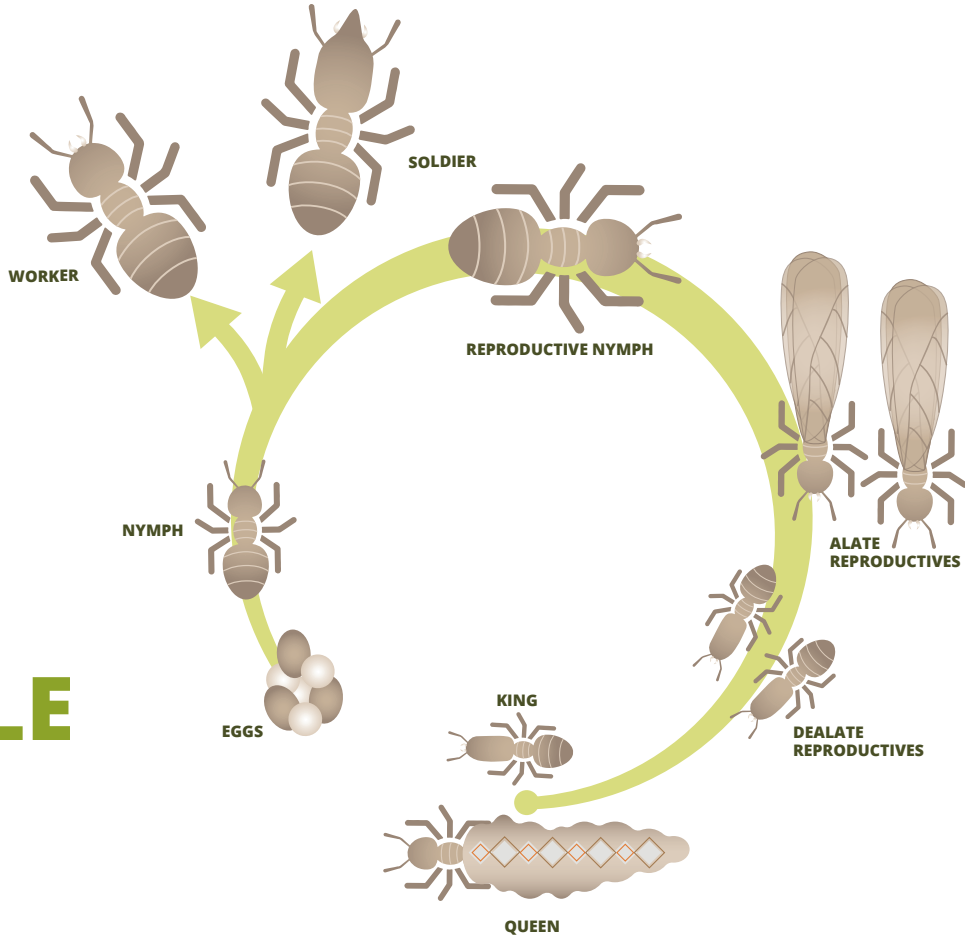
Termites present a danger to every home, weakening every piece of wood they dig and forage into. In the United States alone, it is estimated that termites cause over five billion dollars worth of damage a year.

The worst part of a termite infestation is that it is very often not apparent. Termites largely stay underground or in the wood they're infesting, meaning that the infestation goes unnoticed by the homeowner until the damage is already done.

While not easily preventable, an informed and vigilant homeowner will be able to spot the warning signs of termite infestation and stop it as quickly as possible.

In this ebook, we'll take a look at the termite lifecycle, explaining the different roles that termites serve within the colony, the behaviors and physical characteristics of each of the termite castes, and warning signs homeowners should be on the lookout in order to stop a termite infestation in its tracks.

THE TERMITE LIFECYCLE AT A GLANCE



The termite life cycle follows three key stages: egg, nymph, and adult. However, while every termite in a colony will be more-or-less identical in the first two stages, their appearance and job within the colony will differ considerably depending on what role they take in adulthood.

After the nymphal stage, a termite will either become a worker, a soldier, or a reproductive. Each caste has its own job: workers build the colony and feed the other termites, soldiers protect the colony from enemies, and reproductives breed to grow the colony.

No termite is born to serve one role. Instead, the queen emits pheromones that cause each termite to molt into whatever form best feeds the needs of the colony. Furthermore, a termite that has developed into one form is not necessarily stuck in that role for life. For instance, if a colony's soldiers are killed, the queen will release pheromones that turn some of the workers into new soldier termites, and these can sometimes be turned back into workers once the colony is more secure.

Unlike some other insects, roles within a termite colony are not gender-specific. While there is generally only one queen and one king of a given colony, sterile members of either gender can be assigned roles as workers or soldiers.

Let's take an in-depth look at the stages of the termite lifecycle, and what you as a homeowner should be on the lookout for.

TERMITE EGGS

USDA Forest Service, Wood Products Insect Lab

Like most insects, the life of a termite begins when a mature queen termite lays eggs. An egg cluster resembles caviar, but much smaller with white translucent appearance.

Identifying Termite Eggs

While eggs are technically visible to the naked eye, the queen takes care to lay them only in heavily-sheltered areas inside wall interiors or deep in the nest. Eggs are rarely seen by humans, meaning that in most cases they don't serve as initial indicators of infestation.

When a young termite queen is just beginning her colony, her first clutch will only contain about two dozen eggs. The colony's king will then take over responsibility for taking care of them and seeing the new hatchlings.

As time passes and the colony grows, more worker termites will be available to see to the needs of the young, and the colony can experience exponential growth. Consequently, after a few months, egg clutches can grow into hundreds and even thousands.

While the specific incubation period can vary, the average termite egg will hatch about a month after being laid, and a young termite nymph will emerge.

NYMPHS

Gerald J. Lenhard *Louisiana State University*

When a termite egg hatches, a pale, blind nymph comes out. While capable of movement, nymphs are still quite vulnerable, and they are entirely dependant upon other termites in the colony to survive.

Like adult termites, nymphs feed on cellulose derived from wood and plant material, but they have no way of feeding themselves. In young colonies that don't have enough mature worker termites, the responsibility of feeding and caring for nymphs falls to the colony's king. Once enough nymphs mature into worker termites, these workers will then take care of newly-hatched nymphs.

Termite nymphs are considered indirect damagers. They do not forage directly, but the termite workers that feed them do.

Identifying Termite Nymphs

Termite nymphs are miniscule, sometimes only a tenth of an inch long, with soft, pale-white bodies. While only slightly bigger than the eggs they hatch from, nymphs often look almost identical to the worker termites that most will eventually mature into.

As a nymph matures, it will undertake a molting process. Each nymph develops a soft inner exoskeleton under its hard outer exoskeleton. When the time is right, the nymph sheds the hard outer exoskeleton and over time the soft exoskeleton hardens to take the original’s place.

Through the molting process, a nymphal termite eventually matures into a worker, soldier, or reproductive. The role that a nymph matures into is largely controlled by the colony’s queen and king, though some environmental factors, like temperature, can also come into play.

Generally, a nymph will reach maturity after 3-4 molts, but the process is largely dependant on food presence, colony population, and environmental factors. The king and queen of a colony release pheromones that decide which of the three adult castes the nymph will become based on the needs of the colony.

At maturity, a select few nymphs will become soldiers and protect the colony from outside threats. Fewer still will go on to become reproductives, forming their own colonies. The vast majority will become workers.

WORKERS

Like any human society, workers are the backbone of a termite colony, overseeing the day-to-day operations that ultimately keep civilization running. In termite colonies, the worker termites are construction workers, food manufacturers, and babysitters, all rolled into one.

Termite workers are responsible for foraging, food storage, building tunnels, and maintaining the nest. Workers also bear the responsibility of digesting cellulose from wood, leaf litter, soil, and even animal dung. Workers will then use a process called trophallaxis to feed the cellulose they've gathered to the colony's nymph and soldier termites, which cannot feed themselves.

There is no gender barrier for workers in termite society: worker termites can be male or female, as both are sterile, though certain jobs can be gender-specific depending on the species.

Most worker termites live no longer than 1-2 years. All workers are blind, and use their antennae to navigate.

Identifying Termite Workers

With their pale white coloration, termite workers look almost identical to nymphs, except bigger (anywhere from 2-15 millimeters long) and with a harder shell. The biggest identifying factor between workers and nymphs is that workers are much more active and mobile, scurrying about to complete their many jobs.

In a termite infestation, worker termites are the direct damagers. Their only goal is to build the colony and feed its residents, and their foraging and tunneling behavior causes billions of dollars in damages annually.

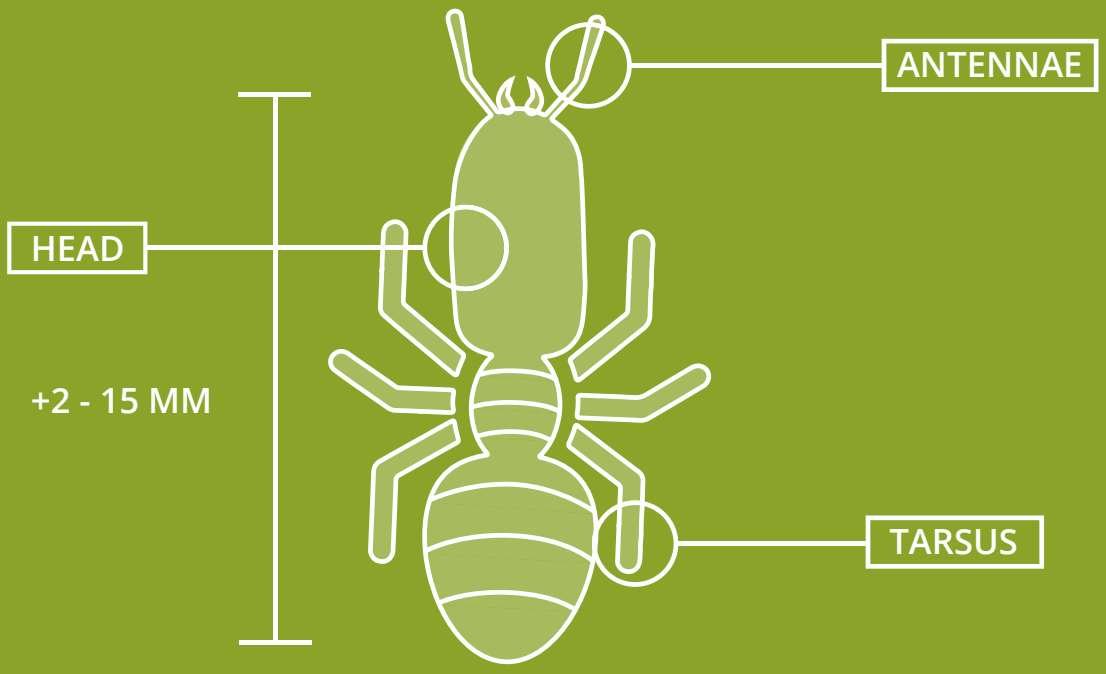
Because their jobs are so varied, and the role they play so vital, it follows that the worker caste is the most populous caste in any termite colony. If there is an infestation, the worker termites are the ones the homeowner is most likely to see in the walls or floor joists of the home.

SOLDIERS

Worker termites build and maintain the nest, but they won't be much use if the colony comes under attack from predators. If the colony has any hope of thriving, it needs guardians to protect it. That's where termite soldiers come in.

Like workers, soldier termites live for 1-2 years, can be male or female, are blind, and result after a nymph molts 3-4 times and reaches adulthood. However, soldiers are a much more specialized caste, and make up only about 10% of any colony.

The soldier's sole purpose is to defend the colony from enemies, the most common being ants, although attacks on other termite colonies are not unheard of.



Identifying Termite Soldiers

While termite workers are almost identical to nymphs, termite soldires are much more visually distinct. Instead of white, their bodies are yellowish-brown, sometimes even pale red, and they're physically larger than workers. Their defining feature, however, is their dramatically-enlarged heads and large, powerful mandibles which they use to bite enemies of the colony. Instead of mandibles, some soldiers will have a horn-shaped nozzle (called a "nasus") that allows the soldier to spray secretions at enemies. Soldier termites within a colony are so distinctive from the other castes that in many cases, the species of an entire colony is identified just by the mandibles and head coloration of the soldiers.

Ironically, as big and fearsome as the soldier termite's jaws are, they aren't made for eating, so they rely on workers to feed them. Soldiers repay the workers by protecting them while they build and forage.

Termite soldiers will bite humans if handled, which can cause minor pain and irritation but are not known to carry any diseases. However, they can still pose a threat to a home: while soldiers are not collect cellulose and so are not direct damagers, they will assist worker termites with tunnel repairs by plugging up broken walls, tunnels, and vulnerable weak points.

Soldiers communicate danger to the rest of the colony by tapping their heads against the tunnel walls, sending warning vibrations throughout the nest. This tapping sound can be audible to humans, and soft tapping noises inside a home can be an early warning sign that an infestation is present.

REPRODUCTIVES

Reproductives occupy the top caste in termite society, and the entire colony is, often literally, built around them.

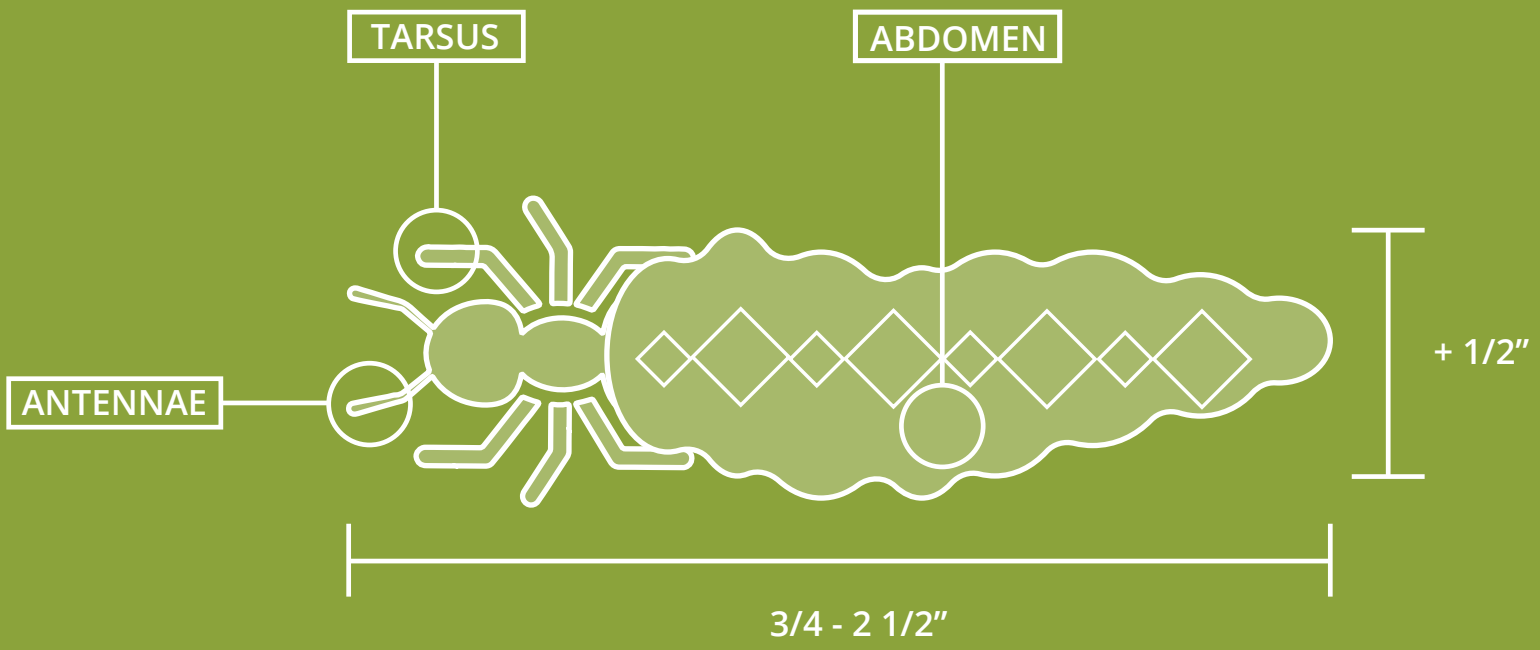
Of all the termite nymphs in a colony, a very select few will mature to become reproductives. Unlike any other caste, reproductive termites have a limited ability to see. This is a useful feature, because unlike the other termites that will stay on or under the ground their entire lives, using their antennae to feel vibrations and navigate terrain, young reproductive termites take to the air.

Like every other caste, young reproductive termites are wingless. However, once they are mature enough to mate, young termite reproductives grow wings and partake in a mating swarm also known as a "nuptial flight." During this winged, swarming phase, reproductive males and females are called "alates."

Once a male and female reproductive find a suitable location, they shed their wings, mate, and become the king and queen of their new colony. They retreat into their mating chambers, mating partners for life, never to return to the surface.

While the king is longer-lived than most other termites with a lifespan of 2-7 years, the queen termite lives longer than any other insect in the world, living at least 10 years and sometimes surpassing 30.

For the first few years, the termite king and queen will generally produce only workers and soldier termites, though some species will produce "backup" reproductives that can take over the role of king or queen should one die. After 4-5 years, the queen will produce new reproductive termites that will become alates, swarm in the thousands, and go on to form their own colonies, and the cycle continues.



Identifying Termite Reproductives

After mating, the queen and king termite retreat underground, never to leave the nest again, so most people experiencing an infestation will never actually see the king and responsible. However, they will likely find the discarded wings of the king and queen's alate forms, and might see a swarm themselves. In the alate form, the king and queen have black coloration, with two identical pairs of wings that allow for swarming.

After mating, the alate forms shed their wings and retreat to the deepest chambers of the nest to form a new colony. Inside, the wingless king maintains his dark coloration but stays about the size of a worker, while the queen's abdomen expands over time, eventually becoming several times larger than the rest of her body, in a process is known as "physogastrism." Physogastrism allows the queen to lay more and more eggs at a time, but costs her mobility, leaving the king with the responsibility of caring for the young until enough mature worker termites are available. When the colony first starts, the queen will lay only about 20 eggs at a time, but as her abdomen expands, she can produce thousands of eggs every day.

Termite Alates vs Flying Ants

Because the presence of flying termites can be one of the first indicators of a termite infestation, it's important to emphasize the differences between flying termites and flying ants, which look very similar at a glance. Here are some of the key physical characteristics of both to help homeowners identify the two:

	TERMITE	ANT
Body	Straight-sided waist	Constricted (Hourglass) waist
Wings	Four wings of equal size	Two pairs of unequal length
Antennae	Straight	Segmented, bend at 90°

Post-mating behavior should also be taken into account. While flying ant males die after mating, flying termite males do not, shedding their wings and going to live in the colony and mate with the queen for life. This is an important distinction, because even without seeing the swarm itself, the leftover wings can be one of the first signs notifying the homeowner of the infestation.

The timing of the annual swarm can vary by species and even by individual colony, but generally follows certain favorable weather conditions. Namely, termite alates tend to swarm when the weather is warm and humid, meaning that swarming season largely falls in spring and early summer. Homeowners should be on the lookout for swarms and discarded wings around this time.

If you're experiencing a termite infestation, or your home is at risk, it's time to call a professional.

Every day that a termite infestation persists, untold damage is taking place. If you've seen warning signs, such as discarded wings, sawdust, or mud tunnels, or are afraid that termites might find your home in the future, you need a termite control specialist to keep your home safe.

At Breda Pest Control, we take termite inspection to a different level. Our trained and experienced team uses some of the most advanced technology on the market to find the infestation, locate the damage, and eliminate the threat.

This spring, let Breda Pest Control keep your home healthy and termite-free.

REQUEST A CONSULTATION

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