Introduction
Termites are known to be cryptic but drywood termites take that lifestyle to the extreme. They live completely within dry, sound wood, which functions as a colony site and food source. Drywood termites do not need to maintain a soil contact as they are able to extract all the moisture they need from the wood they consume and metabolic processes. Living within their food source provides drywood termites great protection from the environment and predators and also makes them very difficult to detect. Drywood colonies are smaller than native subterranean termite colonies and consume much less wood per colony.
There are several species of drywood termites in the United States including Incisitermes snyderi, I. minor, I. schwarzi, Kalotermes approximatus, Cryptotermes brevis and Marginitermes hubbardi.

Description
Drywood termites vary in appearance by species and caste but as a general rule, pseudergates, or ‘false’ workers, are wingless (apterous), blind, elongate, cream-colored and soft bodied. Soldiers exhibit the most morphological variation with some possessing heavily sclerotized blunt head capsules, like Cryptotermes brevis, while most have an elongated head capsule with a pair of large ‘toothed’ mandibles. Drywood termite soldiers can be differentiated from subterranean soldiers by having a pronotum as wide or wider than their head capsule. Alates have compound eyes, two pairs of long, equal-sized wings and a sclerotized body ranging in color from tan to reddish-brown to black. Under magnification drywood wings can be differentiated from subterranean wings by their venation (drywood wings have 3 or 4 darkened wing veins along the fore area compared to 2 for subterraneans).
Drywood termites are established in a fairly narrow band in the continental United States, spanning from Virginia south through Florida, extending along the Gulf coast, through the southwest and up the Pacific coast to Northern California. Hawaii also supports drywood termites. Globally, drywood termites are found in many sub-tropical, tropical and coastal locations. Drywood termites are occasionally found in places not listed above when infested furniture is relocated.

**Biology**

Drywood termite colonies are much smaller than native subterranean colonies, ranging from several dozen to a few thousand individuals. There is a division of labor within the colony but there are no true workers. Late instar termites are called pseudergates and perform the work typically accomplished by true workers (gallery construction, feeding colony-mates) until they reach adulthood and then they differentiate into a soldier or reproductive. Soldiers are responsible for protecting nest mates which sometimes includes physically blocking entry points into the colony. There are two major forms of reproductives, primary (winged alates) and replacement (wingless, not heavily sclerotized). Alates leave the colony to found new colonies while replacement reproductives remain in the colony in which they developed. Reproductives are responsible for all of the mating and egg-laying that occurs within a drywood termite colony.

Living inside of wood is a dry and forbidding environment so drywood termites cannot afford to waste water. Before defecation, termites use highly specialized rectal pads to squeeze as much water out of their feces as possible and retain it. What remains are tiny, hard, oval-shaped pellets with 6 indentations on the sides which are a diagnostic feature of a drywood termite infestation. Pellets range in color from cream to red to black and their color is not necessarily representative of the food they have been eating. The lack of water in the pellets helps preserve them for a long time, making it difficult to determine how long it’s been since they were kicked out. Pellets from today are indistinguishable from ones that are many years old.

Instead of living a life surrounded by feces, drywood termites make small “kick-out” holes in areas they are living and force the pellets out of the wood. These holes are round and tiny, less than 1mm in diameter. Pellets found on the ground can be traced to the kick-out hole from which they came. The higher the kick-out
hole is from the floor, the more difficult it usually is to find. Pellets falling from several feet hit the ground with greater force and as a result the pellets are scattered and are not likely to be concentrated in a single pile. Pellets may also be pushed upward from below.

Drywood termites excavate galleries by eating along and across wood grain; spring and summer wood are both consumed. Drywood termites infest structural beams, window frames, wood floors, furniture and any other sound, dry wood they encounter. The size and shape of the galleries vary but are smooth and often very close to the surface of the wood, leaving only a thin and fragile layer between their gallery and the outside world. Galleries can be as narrow as to only accommodate one termite at a time or wide enough to allow several to pass at once and the size of a gallery system is closely related to the size of the colony. The gallery system is unpredictable with some large, open cavities suddenly giving way to a narrow tunnel that may reach another cavity or not.

Colony expansion can be limited by the size and the qualities of the wood in which they are living. It typically takes 5+ years from penetration of wood (through cracks, joints or other irregularities in the wood) by the royal pair until they are able to develop and mature the colony enough to produce alates.

**Pest Status**

Much like subterranean termites, drywood termites cause millions of dollars in damage annually across the United States, despite a limited distribution. Drywood termites infest dry, sound wood and are often found in structural lumber, furniture, utility poles, boats and dead tree limbs.

In the years before a colony can produce alates, detection is difficult and infestations often persist for many years unnoticed. The cryptic nature of drywood termite colonies precludes homeowners employing elimination strategies other than throwing away infested items, so PMPs are integral in drywood termite control.

**Treatment Options**

When it comes to treatment of drywood termites there are two primary options: fumigation or spot treatment. Fumigation has long been a staple of drywood termite control, especially in areas with heavy infestation rates. While the chemicals used in fumigation have changed from methyl bromide to sulfuryl fluoride the results have remained the same. When executed properly, all life stages of drywood termites in

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**Figure 2.** This image shows how drywood termites will often excavate their galleries almost to the surface of the wood. Here you can see a paper-thin layer of wood peeled back to reveal an open gallery.

**Figure 3.** A fecal pellet kick-out hole. This hole was covered in duct tape and about 2 weeks later the termites chewed through the tape and resumed pushing frass out.
the structure (or piece of furniture) will be killed during fumigation. PMPs must have special licenses and equipment to perform fumigations. Furniture can be treated with a fumigant or by spot treatment depending on the decision of the homeowner and the recommendations by the PCO.

When an infestation is believed to be isolated or localized, a spot treatment may be administered. Termiticides used in spot treatments include non-repellent foams and dusts formulated with a variety of active ingredients. These drill and treat products are designed to fill or coat galleries and although the products have changed, this method has been used for nearly 100 years. Devices used to freeze, heat or electrocute termites are also available for use as localized treatment options.

Selected References


Figure 4. This staircase in Jacksonville, FL shows major drywood termite damage. It is difficult to age drywood termite infestations but it is safe to say this one has been present for many years.