

Bug of the Quarter

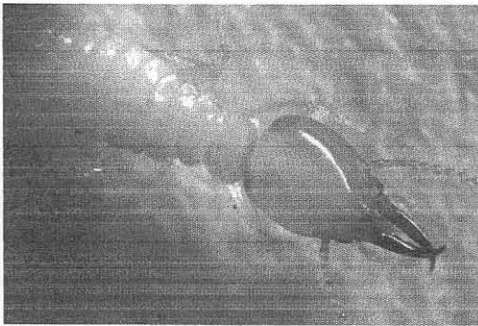
The Formosan Subterranean Termite

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There are over 2,000 different species, or types, of termites in the world. Fortunately, only about 10 percent of these are really considered to be pests. The termites that damage buildings, fences, utility poles, and other man-made constructions fall into three general groups based on lifestyle: dampwood, drywood, and subterranean.

Dampwood termites can be a problem in some regions, such as the Pacific Northwest, where they attack damp wood on decks or in poorly constructed buildings.

Drywood termites are more widespread, and frequently attack wood in attics, window and doorframes, and even furniture and



picture frames. Both of these types of termites live in small groups (or colonies) in single pieces of wood. They tend to damage wood very slowly, and it may be years before serious problems develop. Subterranean termites, on the other hand, are serious pests throughout the world. These species live in large underground colonies of several thousand to several million individuals. Their foraging parties search for food constantly, consuming any wood in the surrounding environment. As a result, subterranean termites can do tremendous damage in only a couple of years.

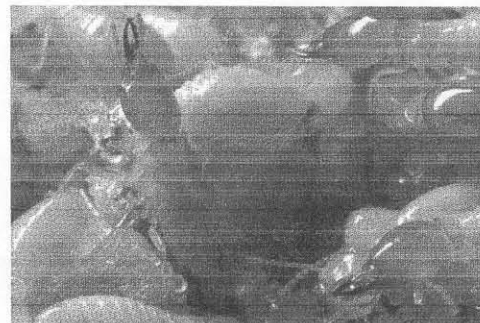
The Formosan subterranean termite (*Coptotermes formosanus*), also called FST, is the most widely distributed and economically important subterranean species. The FST is thought to have originated in Mainland China; from there it was transported to both Taiwan and Japan. It was introduced to Hawaii (where it currently costs residents about \$100 million each year) in the mid-1800s, probably during the latter days of the sandalwood trade with China. By the 1960s, the FST had become established in Sri Lanka, South Africa, and near military bases in the southern United States. Since then, it has spread to Florida, Georgia, South Carolina, Alabama, Tennessee, Mississippi, Louisiana and Texas. Although the FST is basically a tropical and subtropical insect, an active infestation was also found a few years ago near San Diego, California, in a neighborhood with irrigated yards.

Humans have assisted the distribution of the FST throughout the continental USA and around the world because the species can survive for long periods of time above ground in ship holds and shipping containers. The termites are able to use saliva and fecal material to build "carton" nests from materials like masticated wood, soil particles, and even roofing tar.

The nest protects them from desiccation, allowing them to survive transportation to a new location. The species can travel without man's help, too; a mature FST colony produces up to 50,000 flying males and females, or "swarmers," each spring. Swarming termites leave the colony on humid, still nights to mate with others from nearby FST colonies and start new colonies in the immediate area. Even though fewer than 1 percent of these flying termites survive the flight, these annual swarms rapidly build up the density of termites in a given area.

Like all termites, the FST is a social insect, living in colonies containing a queen (and king!), workers and soldiers. The queen can live for 20 years, and she is virtually an egg-laying machine, depositing 300 to several thousand eggs each day. The queen's prodigious egg production and her long life span explain why FST colonies typically contain several million individuals. (Even the workers live about five years.) Although an average colony size might be two to three million, colonies as large as 10 million are not uncommon. With the aid of the intestinal microorganisms that allow them to digest cellulose, a typical FST colony can consume one to two pounds of wood each day. Although they usually live under the ground, FST colonies can dig tunnels over areas as large as a city block to find food. One FST colony infesting a library in Louisiana was reported to contain 50 million termites!

Obviously, the Formosan subterranean termite is a formidable foe. Wood preservatives are an important tool in the battle to protect our buildings and other wood in service, but battling the FST sometimes requires higher loadings than other termite species. Treaters in the Southeast are well placed to take advantage of the kind of preservation oppor-



tunities the FST provides. Soil insecticides are also useful to keep termites out of buildings, but they must be reapplied at least every five years. More permanent phys-

ical barriers such as gravel particles of a particular size, steel mesh, and very hard building materials have been developed to stop termite tunneling. Termite baits have recently proven effective against the FST, but they can take quite a while to destroy such large colonies. As the wood preservation industry continues to develop new termite-resistant building materials and improved termite control methods, we continue to learn more every day about these incredible (and incredibly destructive) social insects.