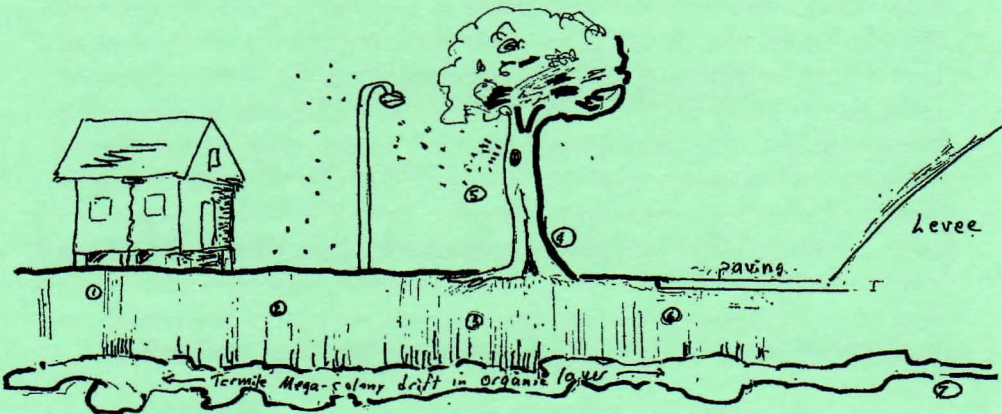


# Adrian's Tree Service

*presents*

## Termite World



1. Tubes lead to house.
2. Alates bore directly through soil and wood.
3. Alates are deflected by root pan towards the center of the tree
4. Over a number of years, alates and nests hollow out the tree from the ground up.
5. Alates fly from a branch stub directly to light.
6. Paving and heavy slabs deflect the flow of alates to trees or open ground,
7. Termite colonies follow the organic layer throughout the area and run deep under the levee system, under the beds of the surrounding waterways.

This picture shows the main drift of termite activity existing up to 100 feet below the surface, following and digesting an alluvial layer of prehistoric wood. A single consolidated mega-colony can occupy several cubic city blocks with more than a million gallons of cubic displacement. They operate at human body temperature (98.6°F). They are living on the anaerobic hydrolysis of an almost unlimited supply of prehistoric cellulose, converting solid material underlying the New Orleans area into greenhouse gases according to the formula:



The walls of the mega-colony are strong and impervious, allowing the insects to operate under the bottoms of Lake Pontchartrain, drainage canals and the Mississippi River. Formosan Termites are mostly detectable at

twilight during the May-June swarming period. The amount of observable swarming is proportional to the numbers of termites working underground. For every alate (kings and queens), there may be 100 workers toiling away, 24/7/365.

A worker termite lives 2 years (vs. a worker bee's lifespan of 6 weeks). A queen termite lives 20 years (vs. 2 years for a honeybee). A queen termite lays thousands of eggs a day. Colonies typically have multiple queens. The food supply, represented as deep strata of prehistoric wood laid down by the Mississippi river, is unlimited. Therefore, the termite numbers in an area amount to trillions, quadrillions and more. Standard termite treatment using barrier chemicals and baits are woefully inadequate at eliminating colonies of this size. Infectious material has an advantage of being more likely able to cause an epidemic in a large, concentrated population of insects rather than a small scattered one. This is ideal for killing entire cubic-city blocks of termites at a reasonable cost. Once a tree is drilled and the drill bit has pierced the wall of the mega-colony, access is gained to a very large underground warren. Dilution does not reduce the potency of the infectious material, only spreads infection farther from the drill hole.

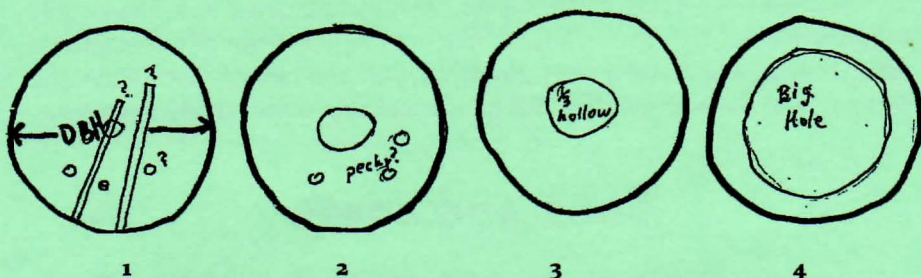
I discovered "Our Fungus" during a literature search for a special project in Forest Entomology at the Duke University School of Forestry in 1970. Through connections with other microbiologists, I obtained 3 desirable strains and have been growing it in culture continuously since 1997. It is mixed with a termite killing nematode: *Steinernema carpocapsae* that is regularly purchased from a biological pest control supplier. The mixture of the two is called: "Pork'n'beans", suggesting an animal and a "plant" component. A single tree receives approximately 10 billion worms and 50 billion spores and hyphal bits of "Our fungus" chased with 10,000 gallons of water. (This is the output of a 1-inch garden hose running for 24 hours.) The water, a powerful detergent and a small amount of Imidachloprid termiticide act synergistically under ground. At a sub-lethal dose, the Imidachloprid acts as a semio-chemical, interfering with termite grooming making the insects more susceptible to infection. The high specific heat of the water acts to cool the termite colonies down to room temperature, which is more optimal for infection.

You can expect to see immediate disappearance of termites from the treated tree as well as a substantial diminution of swarming activity in the area during the following months of May-June. The 75 city blocks of the Garden District of New Orleans were treated by us during 2013-14. We



drilled 250 bonafide infested streetside trees and treated with over 2 million gallons of water, inoculated with Pork'n'Beans. Since then, there has been a significant diminution of swarming activity and reduced residential infestation over the entire Garden District. Our permanent termite database shows an almost complete elimination of termites from about 3000 trees treated by us since 1997. The cost of our Garden District termite treatment was 1/1000 of the cost of the Federal Operation Full Stop chemical treatments in the 100 city block area of the French Quarter of New Orleans.

## Tree risk assessment



Class 1 cavity: Almost solid. Cavity will not take water. Did the drill bit miss? Did the drill bit run past a tiny hole and fill it with shavings?

Class 2 cavity: Bagel, small pocket. Could be pecky. Can we blow the bung of termite excrement filling the void to get the water to flow in?

Class 3 cavity: Donut. Diameter of cavity is up to  $\frac{1}{3}$  of DBH. Tree should be pruned to reduce weight and monitored for decay in future years.

Class 4 cavity: Watermelon rind. The diameter of the cavity is  $\frac{1}{2}$  of DBH or more. The rind of solid wood is  $\frac{1}{4}$  of DBH or less. Tons of wood may be standing atop a hollow trunk. This tree represents a major threat for catastrophic damage and must be removed promptly.

These are typical cross sections of the bases of trees that we see upon drilling. Diameter at Breast Height (DBH) is carefully measured using a special forester's tape. This diameter is compared with the number of inches of solid wood that the drill bit encounters before hitting a cavity. This is also compared by species to our database for possible outcomes.

## Tree termites and politics

It has been an uphill battle to bring this service to you. The U.S. Navy brought this pest to the Algiers Naval Station in New Orleans after WW II. By virtue of its location just outside the Navy Base, Adrian's Tree Service has

encountered this pest very early in its history. The U.S. Forest Service has quietly studied the termites in Behrman Park and shelved the serious implications of this pest to shield the U.S. Navy. Since Formosan termites are rare and of minor concern anywhere else in the U.S., its existence in trees has been either denied or ignored by the forestry and arboricultural establishment. The Louisiana Department of Agriculture and Forestry receives substantial support from the residential pest control and the chemical pesticide industry. Formosan termites are a \$300 million dollar a year bonanza in Louisiana alone. Cheap and safe biological methods have been suppressed for years. The most punishing effects from our chemical establishment is on our parks, public areas, school sites and low-income neighborhoods. The "Pork'n'beans" mixture has also been effective against other insects, but fraught with problems with the forestry establishment. You can read more about all of this on our website: [www.adriantrees.com](http://www.adriantrees.com)

## Fees and costs

We will drill and treat a Formosan termite infested tree for \$260. This includes a statement of risk with recommendations for the future of the tree. The estimated cost for 10,000 gallons of city water is an extra \$80 to be paid by the customer with the next water bill. Additional trees on a residential property represent multiple entry points to a single large colony and will be treated for \$120. each. Pricing on large groups of trees, or in park-like settings with poor access to water is to be negotiated.

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**Member: Entomological Society of America, since 1989**

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