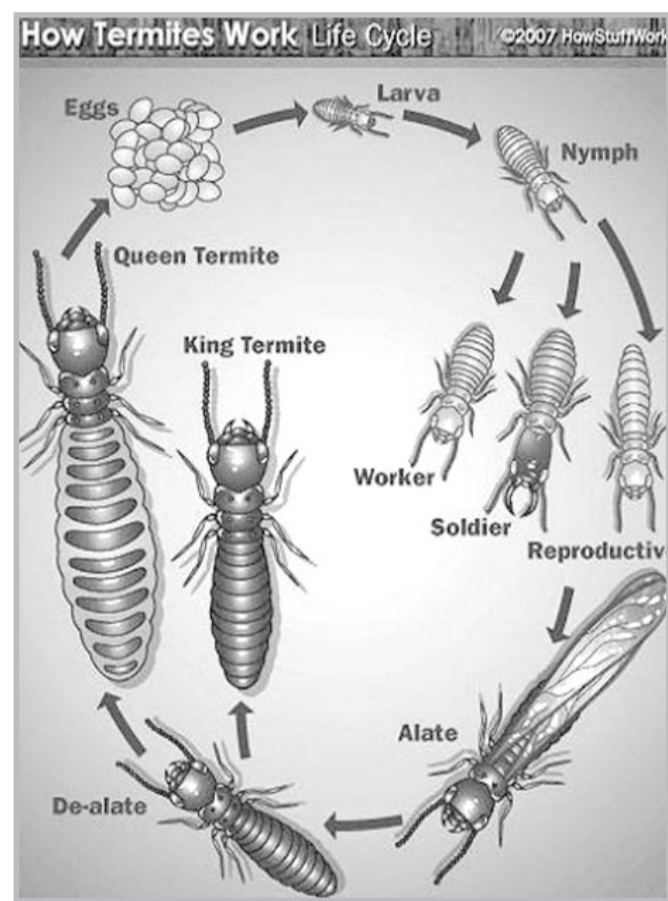


Operation Kadivuka - one year later



One year after Operation Kadivuka - the bio-security operation to contain and eradicate the Asian Subterranean termite infestation in Fiji - was launched it has progressed well. To date, more than 600 homes and 19 schools have been rehabilitated by bio-security officers under this programme; bringing relief to the many families and children who were victimised. The number of new cases of termite infestation has also significantly reduced compared to those discovered in 2010. The public can help control termites by not removing termite infested materials from infested areas to other areas and being proactive and preventing their properties from termites.



Source: BIOSECURITY AUTHORITY OF FIJI

In late 2009 and early 2010, Fiji saw an outbreak of the Asian Subterranean termites. The infestation was mainly in Lautoka. The Asian Subterranean termite (AST) - also known as *Coptotermes gestroi* - is a new species of termite found in the country. It is exotic to Fiji and has caused massive damages to homes, schools and vegetation in Lautoka amounting to millions of dollars. AST is the second most destructive subterranean termite in the world. Incursions have been recorded in countries in South East Asia, Hawaii and Florida where populations have established for more than 30 years and damage costs have amounted to billions of dollars.

Fiji has fourteen (14) species of termites which are *Cryptotermes brevis*, *Cryptotermes domesticus*, *Glyptotermes brevicornis*, *Glyptotermes taveuniensis*, *Incisitermes repandus*, *Procryptotermes sp.*, *Neotermes gnathoferrum*, *Neotermes papua*, *Neotermes samoanus*, *Coptotermes acinaciformis*, *Prohilotermes inopinatus*, *Nasutitermes sp.*, *Nasutitermes olidus* and of course *Coptotermes gestroi* or AST.

While the other 13 termite species are local or 'endemic' to Fiji, AST is exotic and is likely to have been introduced from Asia or the United States 10 - 15 years ago, probably through infested shipping pallets. With improved bio-security techniques and resources, this new species was able to be identified in 2009 and Operation Kadivuka followed soon after.

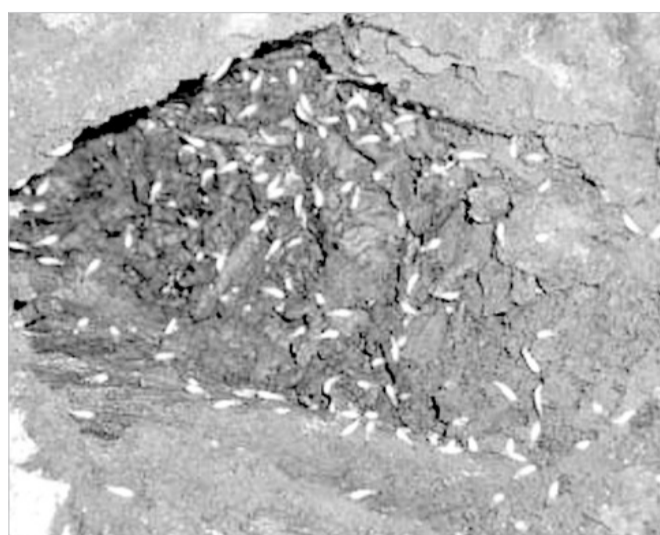
About Asian Subterranean termites

Asian Subterranean termites build their nest underground. They socially organize themselves into three groups which include reproductives, soldiers and workers.

The **REPRODUCTIVES** lay the eggs. Most colonies have one pair of primary reproductives; the king and the queen. A queen can live for about 20 years and lay 1000 eggs a day. A colony can have about 60,000 to 1 million termites in it. Only the



Books destroyed by termites.



Asian Subterranean termites on rotten log.

king and queen have eyes. The rest of the termites are blind and navigate using scent and moisture trails. Kings and queens are usually darker than the rest of the termites in the colony.

The **SOLDIERS** are tasked to defend the nest from invaders, usually ants and termites from other colonies. The wide range of jaw types and large heads provide means that effectively block narrow termite tunnels against ant entry. A tunnel-blocking soldier can rebuff attacks from many ants. Soldiers' heads are often darker than their bodies. They can exude a white toxic fluid for defense purpose. They also produce a rattling sound, a mechanism used by soldiers to warn off nest-mates by banging their head against the walls. You may hear the sound during a quiet night if your house is infested with this species.

The **WORKERS** are milky or cream colour. They have smaller, saw-toothed mandibles, which allow them to take small bites of wood and carry building materials. As their name suggests they do most of the work in the colony. They dig

The Asian Subterranean termites love moisture and like to live in cool, dark, damp and moist places.

tunnels, gather food and care for young. They also feed the king, queen and soldiers, who are unable to feed themselves. Workers and soldiers are sterile.

The Asian Subterranean termites love moisture and like to live in cool, dark, damp and moist places. They feed on cellulose found in wood, paper products, clothes and trees such as mango, lemon, coconut and cassava etc. These termites spread to places with infested materials or fly around in swarms. They usually fly in large numbers- hundreds to thousands- in the afternoons and are attracted to light. They do not bite people.

Operation Kadivuka

Operation Kadivuka - a biosecurity operation - was launched in 2010 to contain and eradicate the Asian Subterranean termite infestation in the country. The operation involved about 150 personnel from various Government ministries and departments including the disciplined forces and officers from National Fire Authority (NFA).

Operation Kadivuka consists of three phases where the first phase involves survey and awareness of the termite infested areas. The bio-security officers carried out surveys in Lautoka and marked the houses, schools and trees infested with the Asian Subterranean termites. A number of awareness programmes were also carried out with communities, schools and various organizations on Operation Kadivuka and termites.

The second phase of Operation Kadivuka - which is currently in progress - involves containment of the spread of termites through rehabilitation and treatment of infested houses and trees. To date more than 600 houses and 19 schools have been rehabilitated by the bio-security officers. There are seven teams dedicated to rehabilitation work on infested houses and schools with each team having a target number to repair per day.

The number of new cases of termite infestation has also significantly reduced compared to those discovered in 2010. In 2010, 30 cases of termite infestation were reported weekly however, in 2011, the number of termite infestation have reduced to barely two cases per week.

In 2011, \$0.8m had been spent on termite containment and rehabilitation work bringing the total to about \$1.3m.

The third phase of Operation Kadivuka involves control of termites through monitoring and surveillance of affected areas and awareness and training for communities on preventive measures to protect their homes from termite infestation.

The Biosecurity Authority of Fiji (BAF) would like to remind people that all communities from Drasa to Saru including Lautoka City have been declared as bio-security emergency areas under the Bio-security Emergency

WAYS TO DETECT TERMITES

Regardless of whether they are AST or any other species, termites are a hidden, secretive and silent problem during the initial stages of infestation. It is precisely because of this that the problem remains undetected by most homeowners until much later when the signs of termites become visually apparent. Knowing how to identify these signs and associate them with termites can save people from a lot of trouble. Here are some common signs as a warning of termite presence.

- A swarm at your residence is an indicator that harmful termites are active. Termites usually swarm in and around the house, especially near sources of light after rain.
- Presence of mud shelters from ground to woodwork or on foundation walls.
- Sawdust-like "powder" near doors and windows.
- Shed wings left near doors and windows
- Tiny holes on wood surfaces and
- Paint that has started to bubble on wood surfaces.

Regulation 2010. The Bio-security Emergency (Termites) Regulation 2010 is currently in effect and prohibits removal of any wooden materials, plants and plant products, timber and building material, furniture; personal effects and soil from infested areas.

Offences carry a maximum penalty of \$40,000 fine for individuals and \$200,000 fines for corporate bodies.



Damaged Floor



Biosecurity Officers reconstructing one of the houses damaged by termites in Lautoka-Rehabilitation of houses is part of the second phase of Operation Kadivuka.



The Ahmadiyya Muslim Primary School after rehabilitation works.

WHAT CAN YOU DO TO PROTECT YOUR HOME

- If you discover a termite infested area, do not pour kerosene or spray insecticides but contact the Termites Operations Command Centre or the Biosecurity Authority of Fiji (BAF) Office for help;
- Do not remove and transport any wooden materials, plants, furniture, personal belongings and soil from infested areas;
- Maintain hygiene and cleanliness around compounds and inside the houses. Allow fresh air and sunshine to flow freely. Inspect your homes, trees and compounds thoroughly;
- Water puddles must be drained away from homes;
- Drainage and piping systems need to be cleaned and maintained;
- Do not disturb and disrupt colonies of termites as they will disperse to other areas;
- Ensure that the timber used has been treated properly;
- Ensure that the wooden building floor is not less than 800mm/32inch from ground level.
- Ceiling is not less than 2.4mtrs/8 ft from floor.
- All framing timbers to be painted by pink primer.
- Concrete building with wooden floor to have proper air ventilation and ceiling to have air ventilation.
- Painting is very important, it protects the timber and makes it last longer.
- Open windows and curtains in the day to allow light and air into the house.
- Concrete floor to be of proper standard
- Report any signs of termites activity and termites infestations to Termites Operations Command Centre or (BAF) Office.