

## Life in a Log

Cloudbridge Nature Reserve - Nature Notes No. 11

### Life in a Rotting Log

Mushrooms on a rotting log You'll see a number of rotting logs if you visit Cloudbridge or in any part of the neotropical forest. Don't ignore them -- they form an essential part of the natural cycle of the forest. Far from being "dead trees," logs teem with life. Since living trees consist mostly of dead wood on the inside anyway, fallen logs sustain more living biomass when dead than when alive!

### Natural Gaps

Trees that fall as a result of wind, lightning or landslides are an essential part of forest growth — they open gaps for new trees to fill. When light reaches the forest floor, an whole succession of plants and trees begins. This adds diversity to a healthy forest.



### Logs Provide Food and Energy

Wood-boring insects such as termites and these beetles are the first to penetrate wood. The tunnels they create open the wood to invasion by bacteria and fungi that feed on the wood, leading to its decay and the recycling of nutrients. In turn, the bacteria and fungi become part of a food web for many other creatures. fungi, and bacteria eat the log and help it to decompose. This decay can create water-filled cavities in the log that become home to aquatic organisms like tadpoles, and mosquito and damsel fly larvae. The red-eyed tree frog (*Agalychnis callidryas*) attaches its eggs to leaves overhanging water holes. On hatching, the tadpoles fall into the water.



Log in forest light A dead log often looks like a miniature forest. Mushrooms, lichens and liverworts flourish in the rich moist environment. Seen here are the fruiting bodies of the fungi. In the log, they put out extensive networks of tiny threads called hyphae, that consume the plant matter and even can trap and eat tiny creatures like nematode worms.

### Logs Offer Shelter

As well as being a source of food and energy, downed wood may be a safe place to hide from predators, or to breed, or to shelter from heat, cold or storms. This frog, like other amphibians, needs the shelter and the moisture of the log and its plant life, because it drinks through its skin, not its mouth.

Frog on a log

### New Trees From Old

Fallen logs are also excellent nurseries for cloud forest plants. "Nurse logs" can provide protection, more moisture, less competition from other plants, and sometimes greater nutrition than the forest floor. Soil and other organic matter that tend to gather uphill behind fallen logs also create rich, sheltered growing sites.

### Enriching the Soil

Dead wood is a "savings account" of nutrients. As the wood decays, nutrients are recycled back into the soil. Fallen logs also stabilize soils and reduce erosion by wind and rain.