

Mistletoe

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The Kissing Parasite

In northern countries, at Christmas time, anyone standing under the mistletoe must be kissed. In Costa Rica, this would lead to a lot of smooching: there are hundreds of mistletoe species in the neotropics. The characteristic of mistletoes is that they are parasites: they live off the branches of trees. Unlike ordinary epiphytes, mistletoes obtain all of their mineral nutrients and water by forming direct connections with water-conducting veins (“xylem”) inside the branches of host trees. That first kiss yields a life-long bond.

Mistletoe Sticky Seeds

All mistletoes have extremely sticky seeds, which enable them to grab onto to the branches of potential hosts instead of falling to the ground. The stickiness comes from specialized tissue called viscin. Mistletoes are unable to grow normal roots and depend completely on the host trees for survival.

They Get Around

Seeds from this plant stick to the tail feathers of birds climbing up and down the trees. The birds fly elsewhere, then rub their bottoms on the bark of the trees to remove the irritating seed, thereby forcing the seeds into tiny crevices in the bark where the seeds germinate. Once on the host tree, the seeds germinate and carry out a peglike root to tap into the tree's vascular system. Mistletoe can only penetrate through young, thin bark.

The mistletoe does not grow just anywhere it falls, however. One reason seems to be that the seed does not invade the tree — rather it is the other way around. The tree branch must grow and as it grows, the mistletoe is able to tap into its veins. No growth, or slow growth, seems to mean the mistletoe does not survive. They also need larger branches, and do better if they are protected from wind and seed predators like ants and mice. Scientists are still unsure as to why some trees are loaded with mistletoes while others have none.

A Parasite, Yes, But...

The mistletoe removes water and essential nutrients from the host tree, but mistletoe is not a complete parasite because it does make its own food. It is not considered a major threat to trees but can cause some growth loss and damage to branches.

