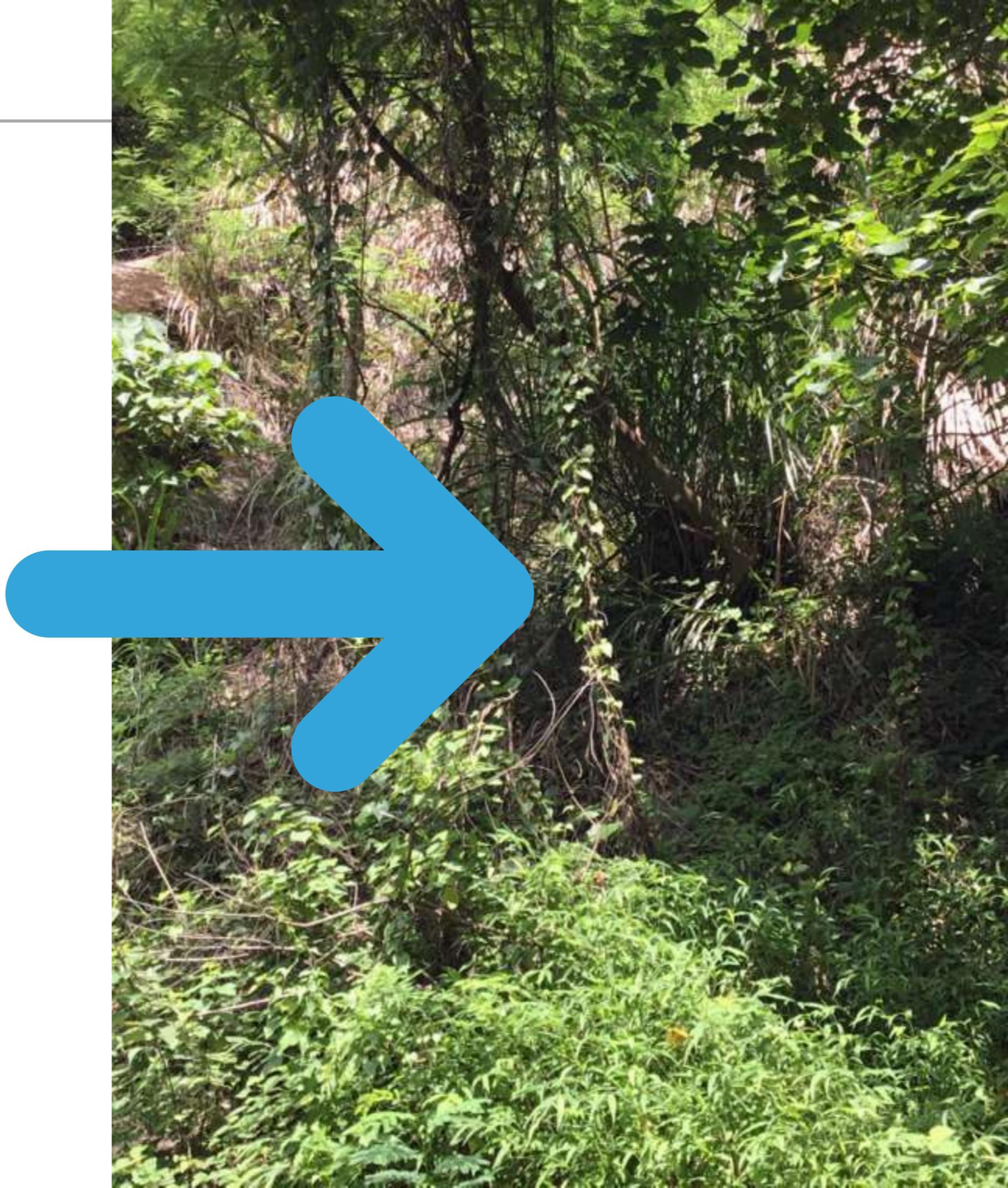


SYMBIOSIS

COMPETITION, PARASITISM

COMPETITION

MILE-A-MINUTES WEED



HOW THEY COMPETE?

- ▶ Sunlight
- ▶ Mile-a-minutes weed cling on the trees to reach a better position for sunlight
- ▶ As times goes by, Mile-a-minutes weed leaves attain a higher position than those of the tree
- ▶ The leaves of tree cannot synthesise food by photosynthesis



THE TREE DIE

**NO
COMPETITION**

PARASITISM

GALL INDUCING INSECT



Gall inducing insects live on the leaves of Myrobalan

TEXT



At front view



Gall inducing insect
in tree branch

HOW GALL INDUCING INSECTS PARASITES?

- ▶ Larva of insects secrete chemical to stimulate the abnormal growth of the leaves
- ▶ Gall formed
- ▶ Larva live inside
- ▶ Larva obtain the nutrients and protection from the gall
- ▶ Leaves are damaged and fall off. No photosynthesis and die.

PARASITISM

BANANA SKIPPER



Banana skipper live on the leaves of Banana tree by making a roll

HOW BANANA SKIPPER PARASITES?

- ▶ Making numerous rolls with funnel-shaped of the leaf blade
- ▶ Obtain the food from the banana leaves.
- ▶ Leaves are damaged.

PARASITISM

TERMITE



Termite live
inside the stem

HOW TERMITE PARASITES?

- ▶ Termites obtain cellulose for food which is the main component of cell wall of the trees.
- ▶ Structure of trees are damaged.
- ▶ Trees may collapse when there is strong wind due to weak structures for support.

	Gall inducing insect& myrobalan	Banana Skipper & banana tree	Termite and tree
Type	Endoparasitic	Ectoparasitic	Endoparasitic
Site of occurrence	Stem, leaves	Leaves	Stem
Nutrient acquisition	Feeding on host body tissue	Feeding on host body tissue	Feeding on host body tissue
Distribution of parasites	In solitary	In solitary	In cluster
Size of parasite	Medium	Large	Small
Constructing shelter	Yes	Yes	Yes
Structure change	Yes	Yes	Yes
Harmful effect to the host	Loss of nutrients and leaves	Loss of nutrients and leaves	Loss of support
Duration of living	Leaves when mature	Leaves when mature	Whole life
Time needed for colonization	A few days	A few days	A few days