

An Overview of the Ant Plant (*Hydnophytum*)

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Summary

Many plants have interactions with other species. Some plants have mutualistic relationships that benefit both species, while others are parasitic relationships. Ants are a common species that many plants harbor interactions with. Ants have been known to guard peony buds for their sugars, farm aphids on plants for nutrition, and even living in plants for habitat. In the following paper, ant relations with Rubiaceae ant

plants will be explored. One of the major types of ant plant genera, *Hydnophytum*, is investigated in more detail. Ant plants feature a large tuberous stem that has many internal chambers that ants find hospitable. In return for habitat, ants provide protection to the plant from other herbivores. This relationship provides advantages to both species, making it a mutualistic interaction.

INTRODUCTION

Plants can form symbiotic or mutualistic relationships with other species for a variety of reasons. The madder family (Rubiaceae) has several species that form relationships with ants. The ants provide protection to the plant while the plant provides a habitat (domatia) for the ants. The ant plant features a large, tuberous stem with internal cavities, making it the perfect habitat for ants. However, these cavities are not produced by ant tunneling. The plant forms these cavities regardless of ant activity (Huxley, 1978).

Ant plants are epiphytic plants that are native to Southeast Asia (Kew Gardens, 2023). There are five genera of ant plants in Rubiaceae. Genera of ant plants include *Myrmecodia*, *Hydnophytum*, *Myrmephytum*, *Squamellaria*, and *Anthorrhiza* (Biopower Plants, 2024). The focus of this study was to describe early cavity formation in *Hydnophytum* seedlings.

Hydnophytum is one of the major genera of Rubiaceae ant plants. There are many known species of *Hydnophytum*, and they are well represented in gardens across the world (Biopower Plants, 2024). This genus features a large tuberous stem that houses the ant inhabitants (Fig. 1). Species can range in size and shape of the caudex (Biopower Plants, 2024).

Hydnophytum forms a mutualistic relationship with several ant species, but the most common inhabitant are the *Philidris* ants (Biopower Plants, 2024). The ants live in the large tuberous stem of the ant plant and provide protection in return for a habitat. The caudex forms by creating a series of internal chambers and cavities when the plant is still young. A small hole at the base of the tuberous stem can be found after a few months of development (Fig. 1).

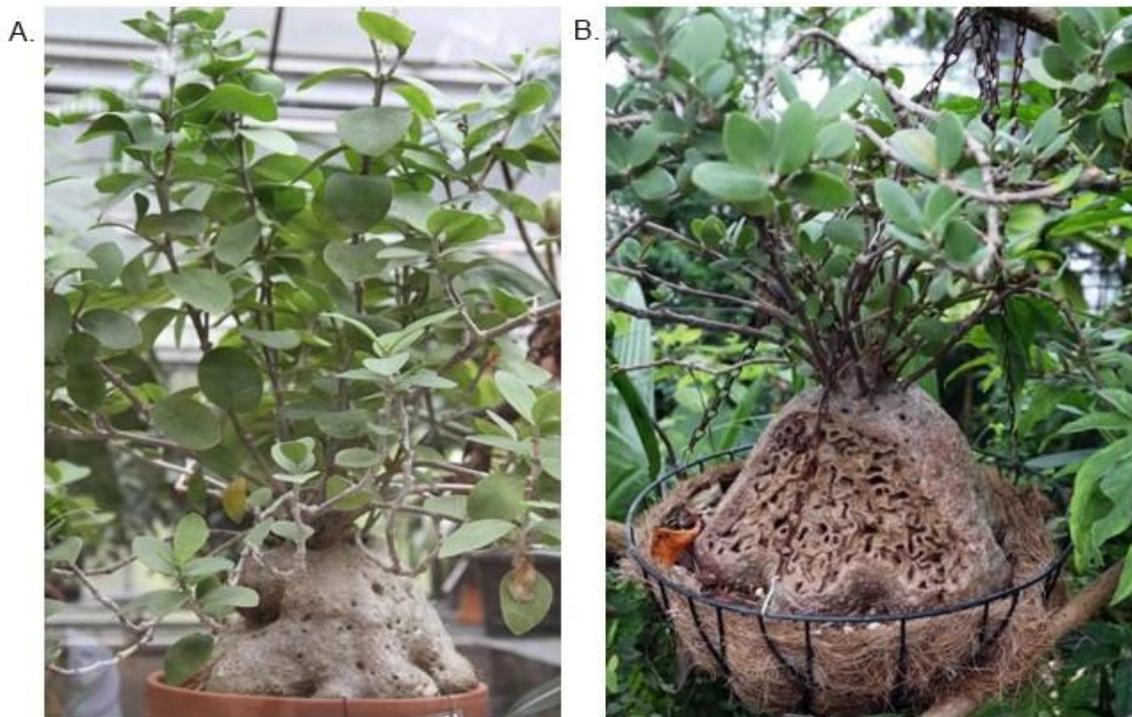


Figure 1. A) *Hydnophytum* before and B) after a portion of the swollen domatia removed.

Depending on the size of the caudex, there can be only one plant that the ant colony occupy, or the colony can spread across several smaller, nearby ant plants (Biopower Plants, 2024). However, ant plants do not require an ant colony for growth. Many ant plants can grow, and still form chambers, without having any inhabitants. This is commonly seen in ant plants in greenhouses outside of the native range. Plants that occupy an ant colony have been found to be more vigorous (Biopower Plants, 2024.).

LITERATURE CITED

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