

Discover the Fascinating World of Stem Anatomy in Dalbergia and Diospyros Species from Madagascar!

Madagascar, often referred to as the "Eighth Continent," is renowned for its unique and diverse flora and fauna. Among the many remarkable species found in this tropical paradise are the Dalbergia and Diospyros plants, which exhibit fascinating stem anatomy. In this article, we will delve into the intricacies of these species, delving into their stem structures and the importance they hold in Madagascar's ecosystem.

The Intricate Stem Anatomy

The stem, also known as the trunk or the main axis of a plant, plays a vital role in transportation, support, and nutrient storage. In both Dalbergia and Diospyros species, the stem anatomy showcases remarkable adaptations that allow them to thrive in Madagascar's unique environment.

Dalbergia Species: Exquisite Vessels and Parenchyma

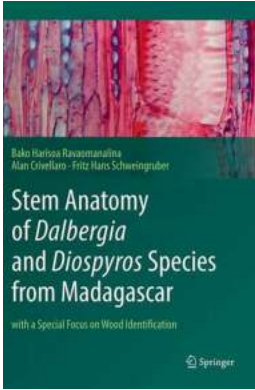
Dalbergia species, also referred to as rosewoods, are prized for their beautiful timber and are commonly used in high-end furniture and musical instruments. Their stem anatomy exhibits several fascinating features.

Stem Anatomy of Dalbergia and Diospyros Species from Madagascar: with a Special Focus on Wood Identification

by Alan Crivellaro (1st ed. 2017 Edition, Kindle Edition)

★★★★★ 5 out of 5

Language : English



File size : 49324 KB
Screen Reader: Supported
Print length : 128 pages



The vessels in *Dalbergia* stems are highly specialized structures responsible for conducting water and nutrients throughout the plant. They have narrow lumens and thick, lignified walls, providing strength and stability to the stem.

Another prominent feature of *Dalbergia* stem anatomy is the presence of parenchyma cells. These cells are responsible for nutrient storage and play a crucial role in the plant's defense mechanism against pathogens or physical damage.

Diospyros Species: Intriguing Vessel Arrangements and Protective Sclereids

Diospyros species, commonly known as ebony or persimmon trees, exhibit unique stem anatomy adaptations to suit their ecological niche.

One of the remarkable aspects of *Diospyros* stem anatomy is the arrangement of vessels. These vessels are often arranged in radial patterns, aiding in efficient water and nutrient transport. The vessel elements also possess secondary wall thickenings, providing strength and preventing collapse under pressure.

Additionally, Diospyros stems contain sclereids, which are small, specialized cells that provide mechanical support to the plant. These sclereids are dense, elongated, and often possess thick walls, contributing to the overall structural integrity of the plant.

The Significance of Stem Anatomy in Madagascar's Ecosystem

The stem anatomy of both Dalbergia and Diospyros species plays a crucial role in Madagascar's unique ecosystem.

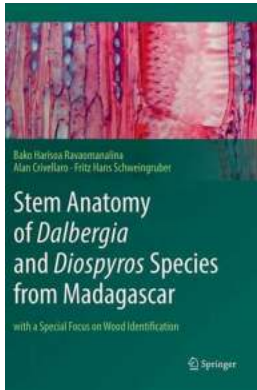
Firstly, these species' stems enable efficient water and nutrient transportation, essential for their survival in the diverse and often challenging habitats of Madagascar. Their specialized vessels and parenchyma cells ensure an adequate supply of resources, helping the plants thrive even in arid regions.

Moreover, the stem anatomy of these plants provides structural support, enabling them to efficiently grow upward and compete for sunlight in the dense rainforests of Madagascar. The robust nature of their stem tissues ensures that they can withstand strong winds and other physical stresses, maintaining their overall stability.

In

The stem anatomy of Dalbergia and Diospyros species from Madagascar showcases spectacular adaptations to the unique environment of the island. Understanding the intricacies of these structures not only enhances our knowledge of plant biology but also sheds light on the significance of biodiversity conservation in preserving the delicate ecosystems on our planet.

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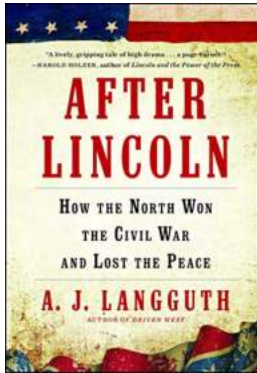
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This atlas offers anatomical descriptions of 19 *Dalbergia* and 31 *Diospyros* species, most of them endemic to Madagascar. Each species is illustrated with color micrographs of double-stained sections through the xylem, bark, and pith of stems, branches, and twigs. Further, a photograph of each plant and information on its height, DBH, habit, and geographical and elevational distribution in Madagascar are included.

Dalbergia and *Diospyros* species provide highly-priced woods, which are intensively traded across the world and therefore highly endangered by illegal trade and harvesting. This book represents a response to the action plan for *Diospyros* and *Dalbergia* species regarding the establishment of a reference collection and reliable identification system for species listed by CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Bringing together a wealth of material recently collected in different biogeographical regions of Madagascar and identified by the Missouri Botanical Garden, the book will appeal to plant scientists, taxonomists and practitioners involved in wood identification, and will help to safeguard the legacy of precious wood trading through proper identification.



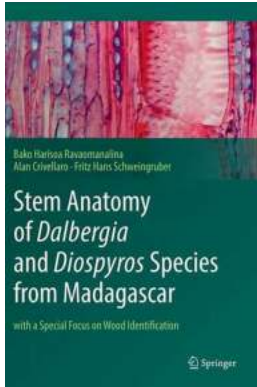
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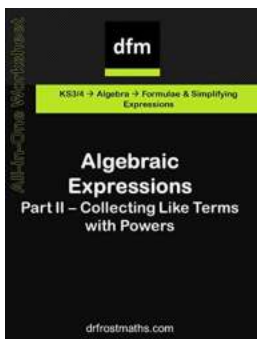
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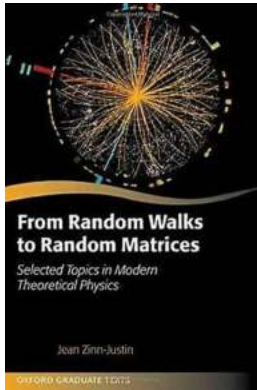
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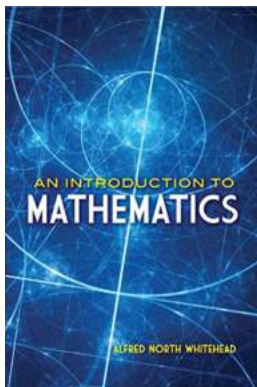
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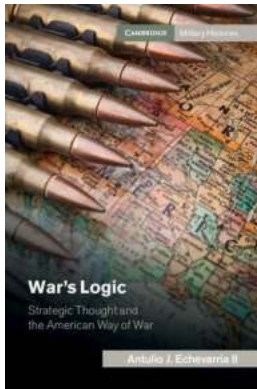
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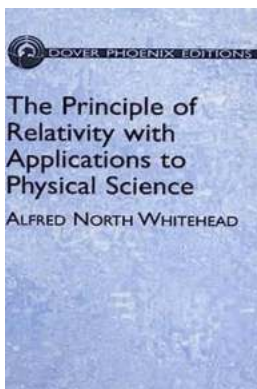
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