

Somruthai Homcheun 2009: Anatomical Study of the Genus *Parkia* in Thailand. Master of Science (Botany), Major Field: Botany, Department of Botany. Thesis Advisor: Associate Professor Prasart Kermanee, Ph.D. 135 pages.

The anatomy of “Stink bean” (*Parkia speciosa* Hassk.), “Riang” (*P. timoriana* Merr.), “Loog-ding” (*P. sumatrana* Miq.) and “Khon-Khong” (*P. leiophylla* Kurz), was studied using paraffin technique. Stem, root, leaf, flower and seed samples were used in this study. It was found that internal structures of them were mostly similar. Primary root of seedling consists of root cap and apical meristem. Apical meristem of shoot tip contains tunica and corpus. The epicotyl and hypocotyl consist of one layer of epidermal cells, some of which modify to trichomes. Inner parts are collateral vascular bundles. Structure of stem at primary growth stage consists of one layer of epidermis, trichomes cortex and collateral vascular bundles. Epidermal layer is replaced by periderm when stem turns to secondary growth stage.

Leaf is a bifacial type consisting with one layer of palisade mesophyll and a few layers of spongy mesophyll. Midrib and vein contain collateral vascular bundle. Structure of petiole and rachis are similar to secondary structure of stem. Root at primary growth stage consists of one layer of epidermis, large cortex and radial vascular bundles. During the secondary growth of root, epidermis is replaced by periderm.

Inflorescence contains numerous florets and each floret is covered with a scale. The topmost and central parts of inflorescence are perfect florets whereas the male florets present at the lower part of inflorescence. There are 10 stamens in each floret. Anther consists of pollen sacs filling with microspores. Pistil consists of 2 stigmas. There are more sclerenchyma in pericarp of *Parkia timoriana* Merr. than in *P. speciosa* Hassk.. Seed coat of *P. speciosa* mostly is parenchymatous tissue whilst in *P. timoriana* mostly is macrosclereid.

Wood anatomy was studied using sliding microtome and maceration method. It was found that stem wood of *P. speciosa* and *P. leiophylla* are semi-ring porous while *P. timoriana* and *P. sumatrana* are diffuse porous wood. Axial parenchyma is banded confluent paratracheal type. Ray parenchyma is homocellular type. Fiber is libriform with thin wall and sharp ended. Root wood is diffuse porous with banded confluent paratracheal axial parenchyma, homocellular ray and thin wall, sharp ended fiber.

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Thesis Advisor's signature