

ASTRAGALUS

Papilionaceae

Vessels medium-sized (100-200 μ mean tangential diameter); the tendency for the vessels to be mostly solitary, but with a few multiples and clusters, noted as characteristic of many of the genera of the Mimosaceae and Caesalpiniaceae, is not particularly noticeable in this genus, which belongs to Papilionaceae; in woods without any definite radial pattern radial multiples are usually moderately abundant. Most species have either fewer than 5 vessels per sq. mm or between 20 and 40 per sq. mm. Perforations simple. Intervascular pitting alternate, typically small. Pits to parenchyma and ray cells usually similar to intervacular pits; pits vestured. Mean member length 0.1-0.4 mm.

Parenchyma usually moderately to very abundant and either predominantly paratracheal or in moderately regular bands that tend to be replaced by definitely paratracheal forms, where the parenchyma is less abundant; round or diamond-shaped sheaths are less common than confluent or other banded types. Terminal parenchyma present in some genera. Chambered crystals present in the marginal cells of the paratracheal or banded parenchyma; also occurring sometimes in diffuse parenchyma, where this is present; maximum number of crystals per strand typically about 8 and usually ^{or} more than 11, but sometimes more where ordinary strands are commonly of 4 cells. Strands most commonly of 1-2, or only 1 cell, but of 2-4 in many genera.

Rays usually 2-3 cells wide; uniseriate rays usually fairly numerous; mostly from 4-12 rays per mm. moderately heterogeneous (Kribs Type II and occasionally III) with 1-2 marginal rows of square or upright cells. Usually storied in woods with low rays, but in most genera the rays are several times as high as the parenchyma strands and exhibit no storying.

Fibres typically with few, small, simple pits, more numerous on radial than on tangential walls. Walls usually moderately to very thick, often with gelatinous inner layer. Mean length 0.6-1.7 mm.