

## CELTIS

Vessels typically medium-sized (mean tangential diameter 100-200  $\mu$ ) in the diffuse-porous woods (i.e. some spp.); wavy, ulmiform, tangential bands; mostly 5-12 per sq. mm. (apart from woods with an ulmiform or tangential pattern) fewer in some spp. Ring-porous in some spp.; spiral thickening present in some spp. Perforations simple. Intervascular pitting typically alternate, but may be opposite pitting noted in some spp; usually medium-sized to moderately large, but small in some spp; pitting to ray and wood parenchyma may include many large elongated and often simple pits, but such pits rare in *Celtis*. Tyloses sometimes present. Deposits of calcium carbonate reported. Mean member length 0.2-0.55 mm.

Parenchyma varying in abundance and type, but usually essentially paratracheal; limited to narrow sheaths or a few cells round the vessels in *C. rhamnifolia* Presl., and round the ulmiform or tangential bands of vessels in some spp; banded in the other spp. the bands in some cases obviously confluent, in others suggesting broad apotracheal bands, except that the parenchyma tends to become aliform where less abundant locally; all types represented in different spp. of *Celtis*; terminal bands sometimes present. Strands usually of 4 cells, but commonly of 2 cells in some spp.

Rays usually up to 3-5 cells wide, but up to 6-12 cells in *Celtis*; typically less than 1 mm. high, but slightly higher in some spp. Uniseriates typically very few and low, but numerous and moderately high in *C. rendleana* G. Taylor; mostly 4-12 per mm. fewer than 4 per mm. in some spp; most commonly heterogeneous (Kribs's Type IIA) with 1-3 marginal rows of upright cells; more markedly heterogeneous (Kribs's Type I) in *C. rendleana*; with sheath cells in some spp; the procumbent cells often very narrow axially and tangentially (as seen in tangential section) in many spp. (see diag.). Solitary crystals sometimes present.

Fibres typically with small simple pits, rather few and mostly on the radial walls. Walls usually of medium thickness, sometimes with a gelatinous layer. Mean length 1.0-1.3 mm.

Note. *Celtis* shows a remarkable amount of variation in its different spp.

Celtis australis L.

Ring-porous. Pores in latewood in clusters; in ulmiform arrangement. earlywood pores in rows of 1 to 2; latewood pores very small, maximum tangential diameter 45  $\mu$ ; earlywood pores medium to large, maximum tangential diameter 250  $\mu$ . Vessels with simple perforations; pits alternate, medium sized; spiral thickenings in latewood vessels; tyloses sparingly developed. Wood parenchyma paratracheal, irregular. Rays heterogeneous, marginal tiers of upright cells 1 to 2 cells high; up to 10 cells wide; up to 40 cells high; ray-vessel pitting medium sized, short oval in outline. Fibres with simple pits. (Ilanoth Specimen No. 52)