

ZIZYPHUS

Vessels mostly small (less than 100 μ mean tangential diameter). (Never exclusively) solitary. Ring-porous, or semi-ring-porous. With spiral thickening. Varying from 6-60 per mm. Ring-porous or semi-ring-porous in some species. With spiral thickening in *Z. jujuba*. Perforations exclusively simple, except some scalariform plates with few bars in *Z. calophylla* Wall. Intervascular pitting alternate, with coalescent apertures in some spp. Pits moderately large to large. Pits to parenchyma and ray cells similar to intervascular pitting, occasionally unilaterally compound. Mean member length 0.3-9.7 mm.

Parenchyma very sparse to moderately abundant, predominantly paratracheal in most spp; most commonly as a few cells round the vessels; aliform and sometimes locally confluent in some spp. Confluent in some spp; predominantly diffuse in some spp. e.g. *Z. angolito* Standl. With uni- to biseriate terminal bands in some spp. In *Zizyphus* the parenchyma is very variable being, for example, predominantly apotracheal in numerous uniseriate bands in *Z. angolito*, *Z. cyclocardia* Blake, *Z. guatemalensis* Hemsl, *Z. hauaensis* H.B. et K and *Z. sonorensis* S. Wats, in narrow irregular to broad confluent bands in *Z. melastomoides*, *Z. Mistol* Griseb, and *Z. spina-christi* Willd usually, aliform in other spp. often accompanied by irregularly scattered single strands. Very thin walled, in most spp. Strands typically of 4 cells, but occasionally up to 6 or 8 cells in *Zizyphus*. Chambered crystals sometimes present.

Rays most commonly up to 2-5 cells wide, exclusively uniseriate in some spp. e.g. *Z. jujuba* and *Z. mucronata* Willd. About 10-20 rays per mm. in woods with rays up to 3 cells wide, 4-10 per mm. in woods with larger rays. Usually heterogeneous (Kribs's Types IIA and B); with 4 or more marginal rows of distinctly upright cells. The shrubby members often have their procumbent cells replaced by square cells, or with uniseriate margins of square ^{cells} that are not distinguishable from the procumbent cells in T.L.S. e.g. *Ceanothus incanus*. Woods with woolly iniseriate rays homogeneous (Kribs's Type III), heterogeneous (Kribs's Type III) or composed entirely of square and upright cells. Cells commonly containing gum-like deposits and single crystals in

Z. mucronata.

Fibres with simple pits, more numerous on radial than on tangential walls, usually very sparse, but more numerous in woods with thin-walled fibres. Walls usually thick to very thick. Mean length 0.7-1.7 mm.

Zizyphus spina-Christi (L.) Willd.

Diffuse-porous. Pores solitary and in short radial multiples of 2 to 3; medium sized, maximum tangential diameter 190 microns; numerous but not crowded. Vessels with simple perforations; pits alternate, medium sized. Wood parenchyma sparingly paratracheal. Rays heterogeneous, upright and procumbent cells in irregular arrangement as seen on the tangential section; mostly uniseriate, rarely biseriate in part; up to 45 cells high; ray-vessel pitting medium sized, short oval in outline. Fibres with simple pits. Crystals in the ray cells. (Ilanoth Specimen No. 2).