

PHLOMIS

Vessels small (mean tangential diameter less than 100 μ) sometimes extremely small (less than 25 μ); typically in numerous small multiples and groups that are arranged in tangential lines; 4 to over 100 per sq. mm. Semi-ring-porous. Perforations exclusively simple. Inter-vascular pitting alternate and small; pits to ray and wood parenchyma similar, commonly unilaterally compound.

Parenchyma paratracheal and rather sparse to very sparse, e.g. in *P. fruticosa* Linn; most commonly as scattered cells that, together with the vessels, form tangential bands (see *Lavandula* diag). Strands most commonly of 4 cells.

Rays sometimes of 2 distinct sizes, but not necessarily so in Phlomis; the larger rays in the material examined typically not less than 4 cells wide, but Solereder states that for the whole family the rays are mostly narrow. Uniseriate rays numerous, usually composed of upright cells, but occasionally with a few square cells. Heterogeneous (Kribs's Type II A) but Phomis does not have the 4 or more marginal rows of square or upright cells. Solereder states that the rays are commonly composed entirely of square or upright cells, but this character was observed only in one genus, *Hoslundia*. Sheath cells present, but seldom completely enclosing the rays. Crystals not observed.

Fibres with numerous, very small, simple pits on the radial walls. Walls tending to be thick.