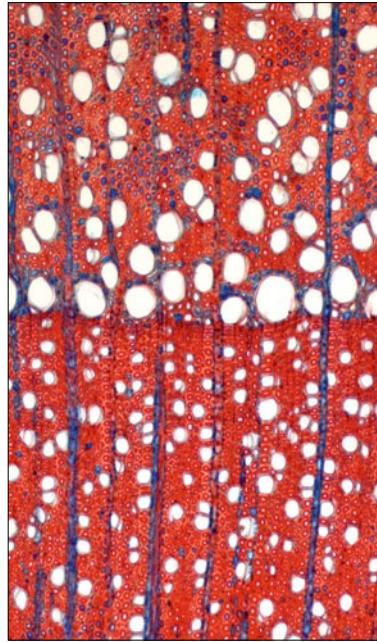
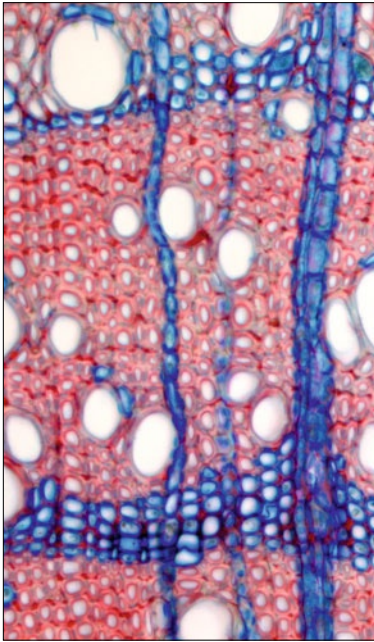


Angiosperms: Dicotyledons

This section contains anatomical descriptions of stem and twig xylem, as well as the bark and pith regions of 244 dicotyledonous species belonging to 61 families.



Sambucus nigra L.

Common Elder, Black Elder

Adoxaceae

PLANT DESCRIPTION

Deciduous shrub up to 10 m high. Bark grey-brown. Leaves opposite, compound, imparipinnate. Naturalized in Cyprus, found in field margins, river banks and home gardens (0-1200 m alt.). It also occurs throughout the Mediterranean Basin, in central and northern Europe and western Asia.



TWIG ANATOMY

Bark

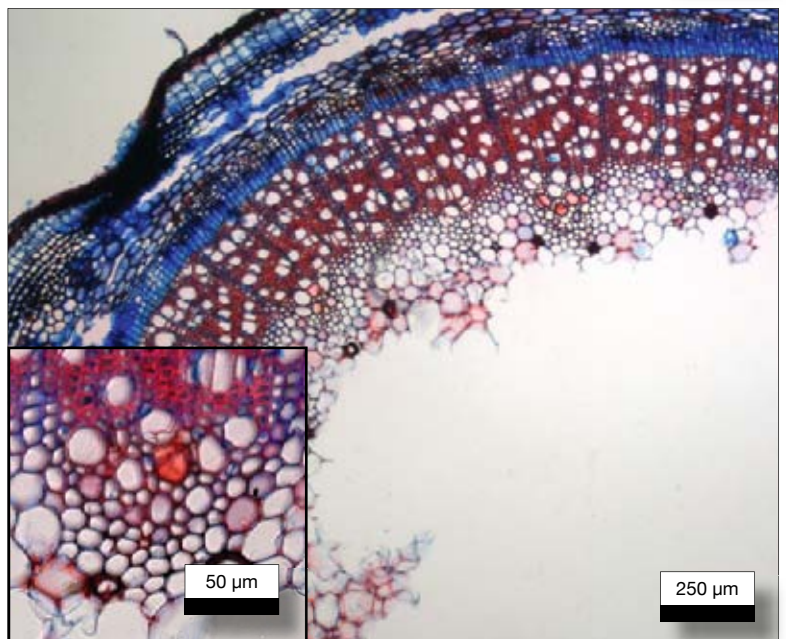
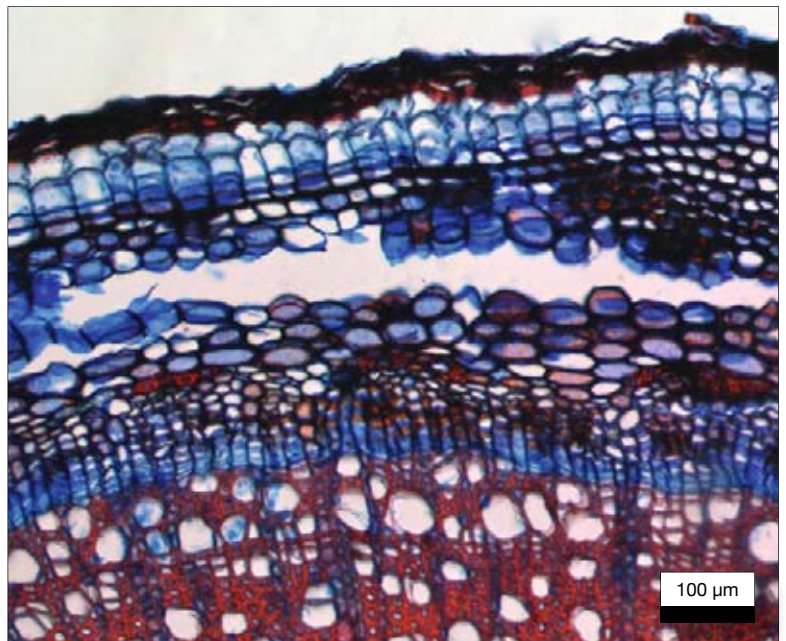
Groups of sieve tube and collapsed sieve tubes present. Sclerenchyma cells in phloem and in cortex. Fibers scattered or irregularly dispersed. Crystal sand present. Cortex homogeneous. Epidermis distinct in polarized light.

Xylem

Vessel solitary and in small clusters. Mean tangential diameter of earlywood vessel lumina 20-50 μm . Rays predominantly uniseriate.

Pith

Pith shape round. Heterogenous pith. Few scattered thick-walled parenchyma cells present. Crystal sand present. Pits in transverse and in longitudinal cell walls. Vascular bundles clearly separate.

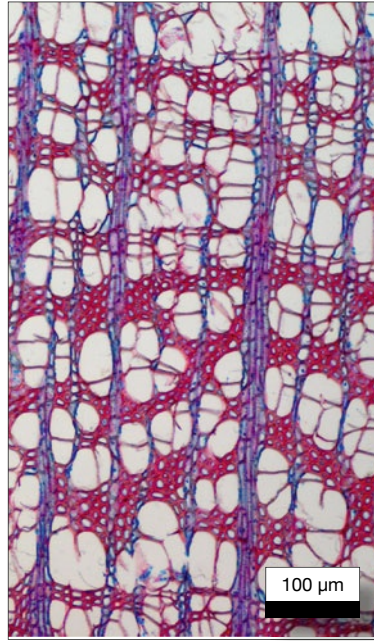


Sambucus nigra L.

Stem xylem: 1 5 6 11 13 22 25 30 41 50.2 52.3 56 60 61 69 70.2 75 76 97 107 115

Twig bark: B1 B4 B7 B9 B13 B23 B31 B33

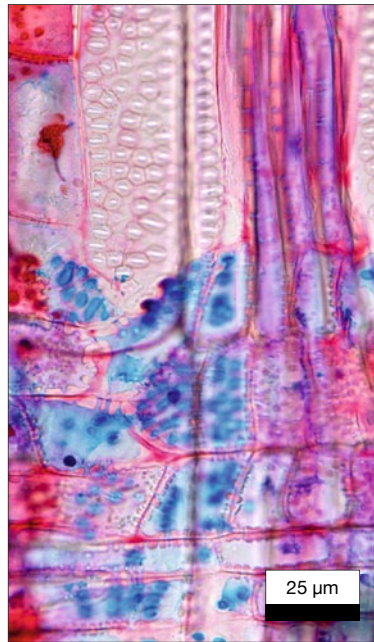
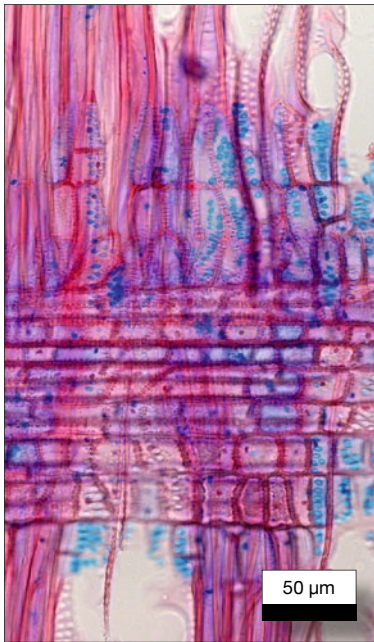
Pith: P1 P3 P3.3 P6.4 P9 P9.1 P10.1



STEM ANATOMY

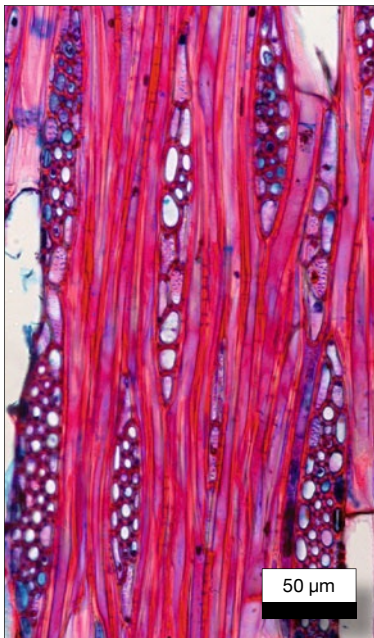
Transverse section

Growth ring boundaries distinct by radially flattened latewood fibers. Wood diffuse-porous. Vessels predominantly in clusters, arranged in intra-annual tangential bands. Mean tangential diameter of earlywood vessel lumina 50-100 μm . More than 200 vessels per mm^2 . Tyloses with thin walls common. Fibers thin- to thick-walled. Tension wood present. Axial parenchyma extremely rare, diffuse. Rays 4-12 per mm .



Radial section

Simple perforation plates. Inter-vessel pits alternate, small (4-7 μm in diameter). Vessel-ray pits with distinct borders, similar to intervessel pits in size and shape throughout the ray cell. Earlywood vessels length 100-200 μm . Vascular and/or vasicentric tracheids present in latewood. Fibers with simple to minutely bordered pits (libriform fibers). Body ray cells procumbent with mostly 2-4 rows of upright and square marginal cells.



Tangential section

Ray width predominantly 1 to 3 cells.

Wood basic density: 0,50 g/cm^3

Viburnum opulus L.

Guelder Rose, Snowball

Adoxaceae

PLANT DESCRIPTION

Deciduous shrub up to 4 m high. Leaves opposite, simple, thinly hairy below. Flowers white in umbellate fascicles. Fruit a sub globose, red drupe. Exotic to Cyprus, found in gardens and hedges and elsewhere (500-1200 m alt.). Indigenous to central and southern Europe.



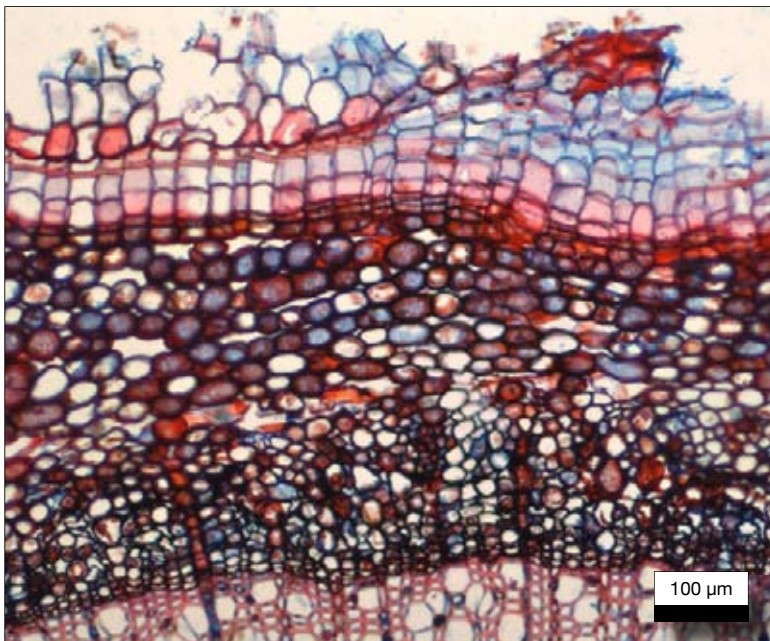
TWIG ANATOMY

Bark

Groups of sieve tube present. Sclerenchyma cells in phloem and in cortex. Sclereids scattered or irregularly dispersed and in small groups. Crystal druses present. Cortex and phelllem homogeneous, the latter distinct in polarized light. Layered phelloderm.

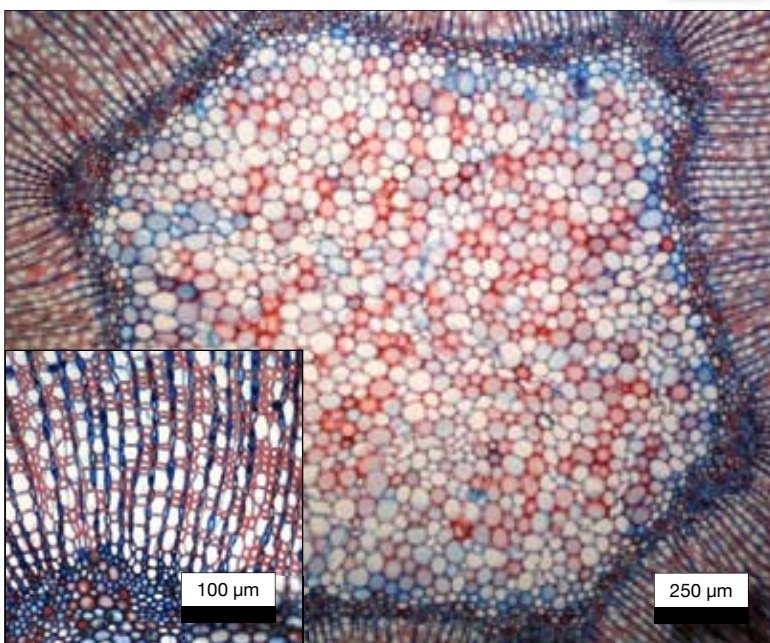
Xylem

As stem wood.



Pith

Pith shape hexagonal. Medullary sheath present. Cells dimorphic. Crystal druses present. Pits in transverse and in longitudinal cell walls, grouped. Pits of two distinct size. Vascular bundles clearly separate to not distinct. Tracheary elements of metaxylem in distinct radial rows. Axial cells in regular rows (radial section).

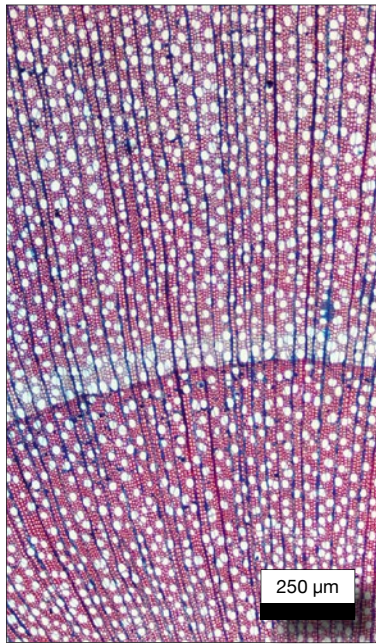


Viburnum opulus L.

Stem xylem: 1 5 9 11 14 18 21 25 30 40.2 50.2 53.2 62 69 70.2 76 78 96 109 116.2

Twig bark: B1 B4 B7 B18 B19 B22 B31 B33 B35

Pith: P1.1 P2 P4 P6.2 P9 P9.1 P9.2 P9.3 P10.1 P10.2 P12 P13



STEM ANATOMY

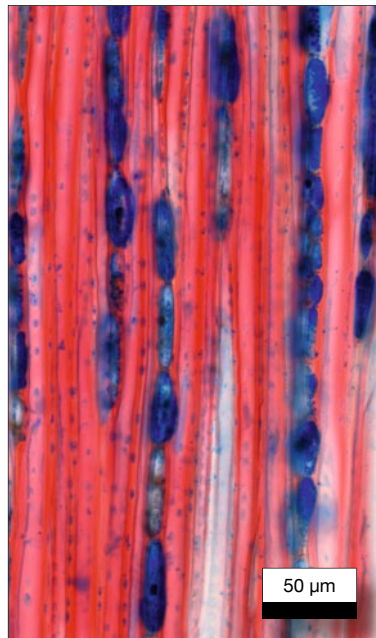
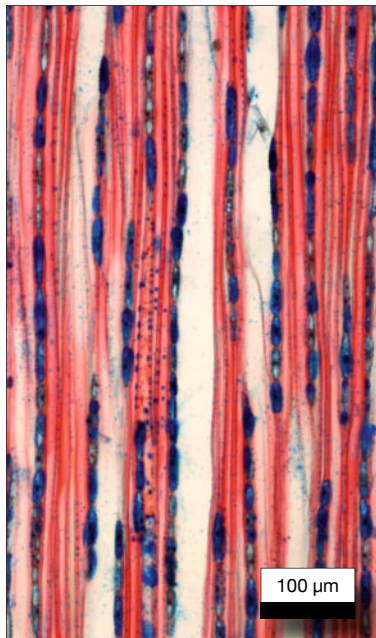
Transverse section

Growth ring boundaries distinct by radially flatted and thick-walled latewood fibers. Wood diffuse-porous. Vessel solitary or in small clusters. Mean tangential diameter of earlywood vessels 20-50 μm. More than 200 vessels per mm². Fibers thin- to thick-walled. Tension wood present. Axial parenchyma diffuse and scanty paratracheal. More than 20 rays per mm.



Radial section

Scalariform perforation plates with more than 40 bars. Inter-vessel pits opposite, small (4-7 μm in diameter). Vessel-ray pits with distinct borders, similar to intervessel pits in size and shape throughout the ray cell. Earlywood vessel element length more than 500 μm. Fibers with distinctly bordered pits (fiber tracheids). Rays with procumbent, square and upright cells mixed throughout the ray.



Tangential section

Rays exclusively uniseriate.

Wood basic density: 0,50 g/cm³

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