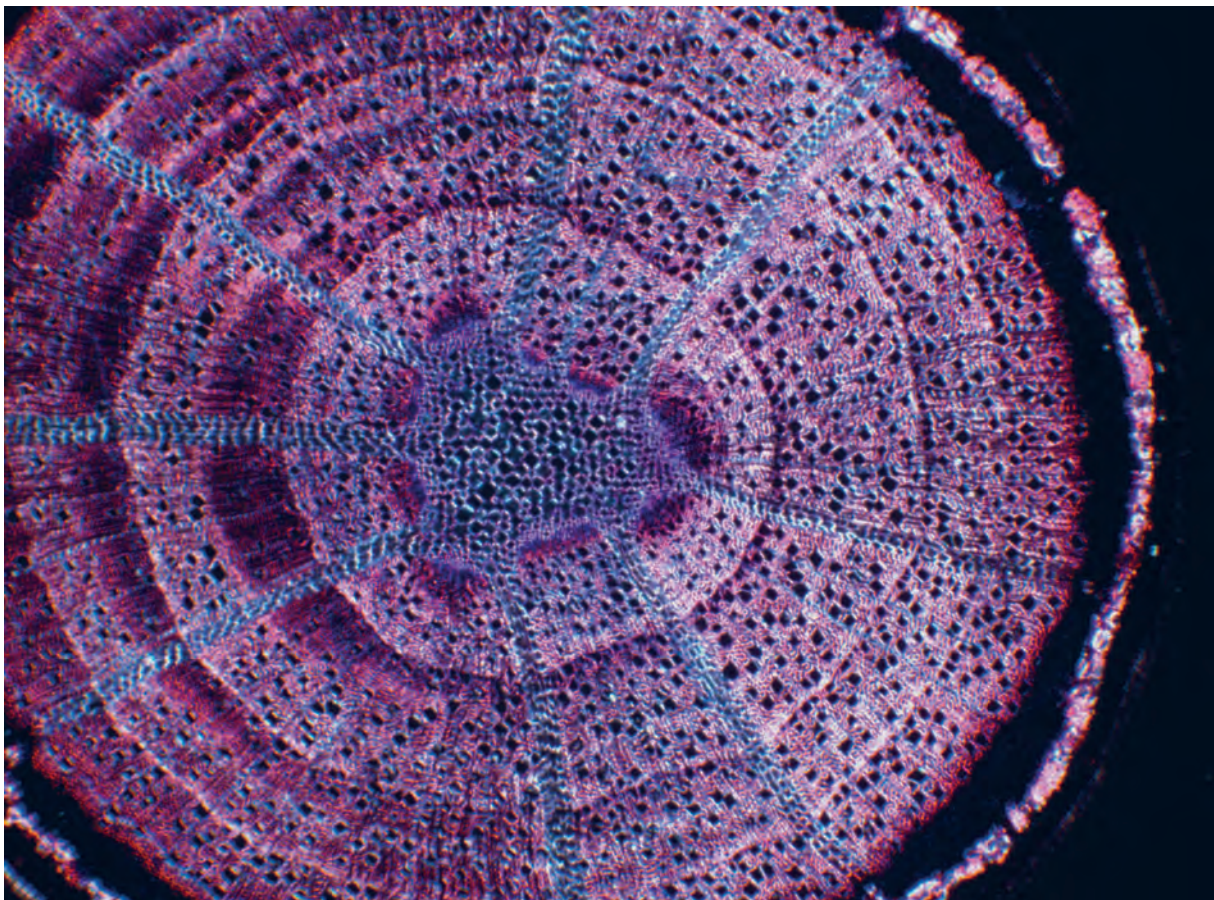
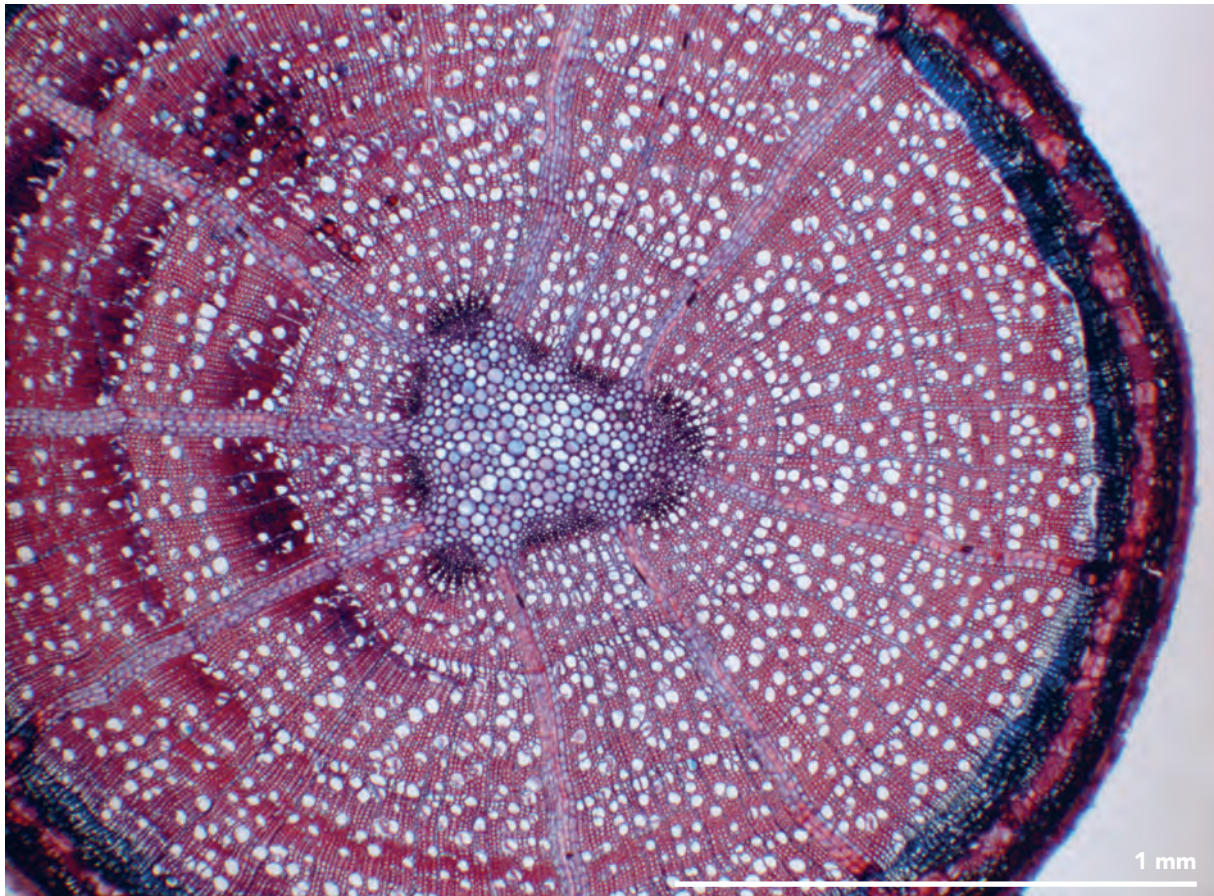


## ***Fagus sylvatica* L.**

Fagaceae





## Pith

### Transverse section (1–5)

Shape trilobate, with wavy outline (1–2; 2 = 1 in xpl). Pith heterocellular (some cells with crystals). All cell walls lignified. Cells (3–5; 5 = xpl) roundish, 15–50 µm in diameter, double wall diameter 2–4 µm. Round pits of <1–1 µm diameter (4), pits often hard to see. Some specimens with cells with druses or polyhedral crystals (5, crystals glow in polarized light). Many small and few medium-sized intercellulars. The pith appears light in polarized light, with glowing crystals (2).

### Radial section (6–10)

Cells in slightly undulating axial rows (6–7; 7 = 6 in xpl). All cell walls lignified. Cells (8–10; 10 = 9 in xpl) rectangular, square to axially elongated, 20–60 µm in axial dimension, double wall diameter in horizontal walls 3–5 µm. Round to oval pits of 1–2 µm diameter (8). Some specimens with cells with druses or polyhedral crystals, solitary or in axial multiples (9–10, crystals glow in polarized light). Few small intercellulars.

## Primary xylem

### Transverse section (11–14)

Primary xylem tissue distributed in a hollow cylinder around the pith only interrupted by rays (11). Parenchyma cells round, in irregular arrangement. Most specimens show only few parenchyma cells. Crushed protoxylem tracheary elements visible as dots or lines. Metaxylem tracheary elements arranged in radial seriation of four to six tracheae per row.

## Secondary xylem

### Transverse section (15)

First tree ring like the later tree rings, vessels may be smaller and less numerous. Radial rows of tracheae continue the metaxylem tracheae rows.

### Radial and tangential section (16–17)

Two clearly distinctive sizes of rays present. Rays at the end of the first tree ring either small (uniseriate and up to 20 cells high) or broad (three to seven cells wide and very high). In small rays almost all cells axially elongated, in broad rays all cells radially elongated.

## Bark

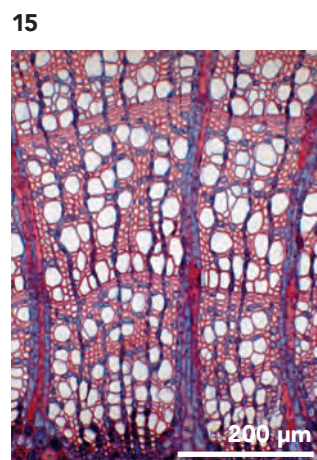
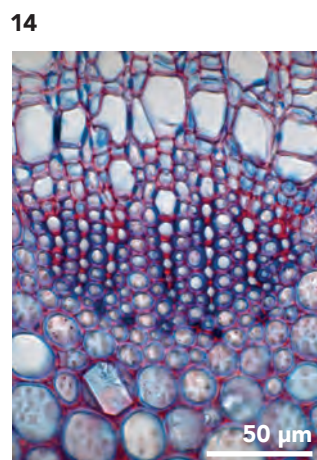
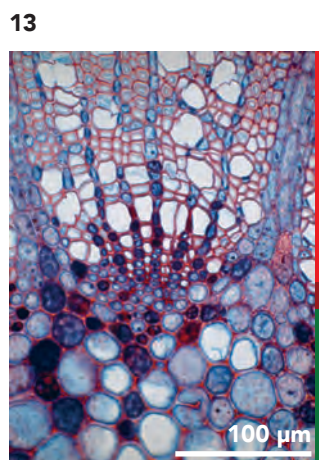
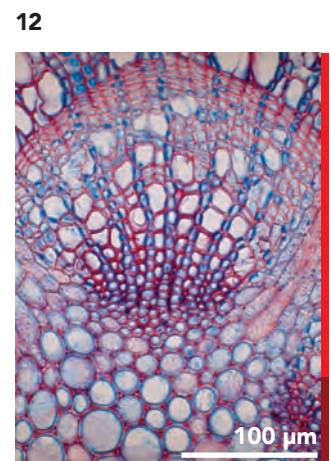
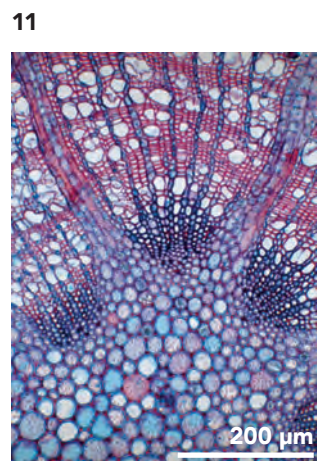
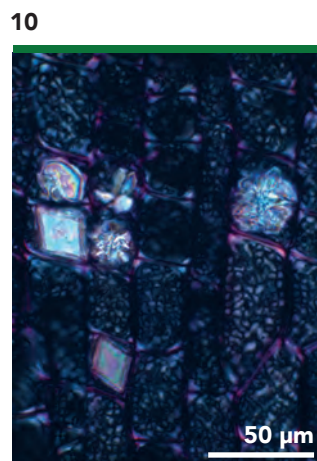
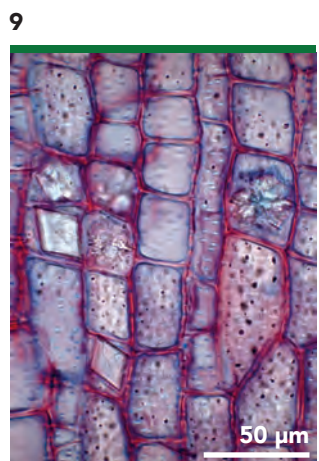
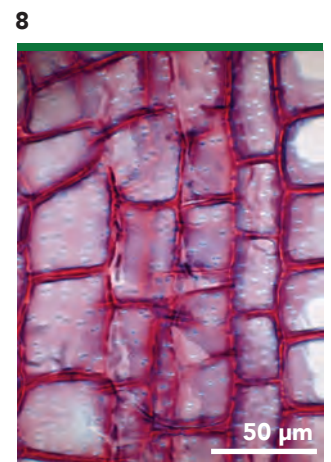
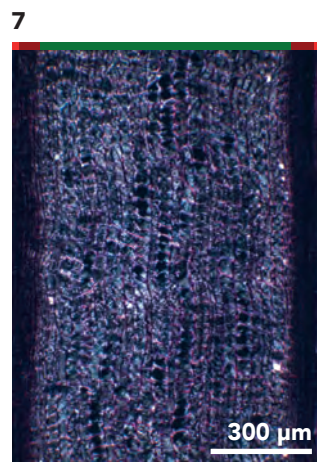
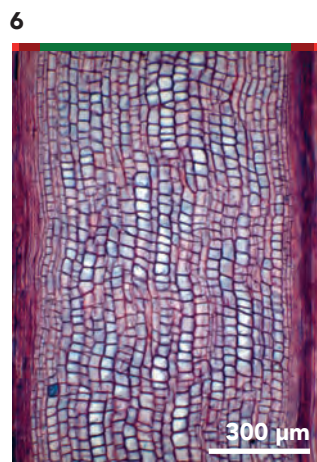
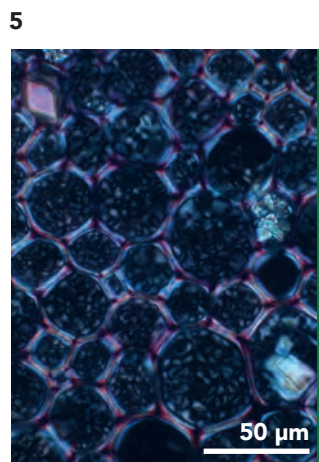
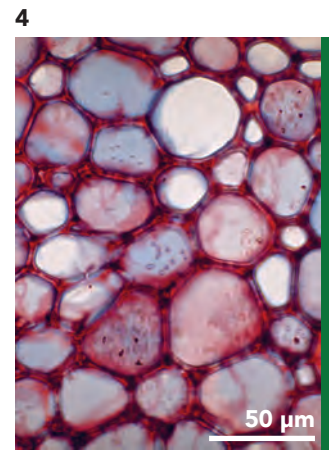
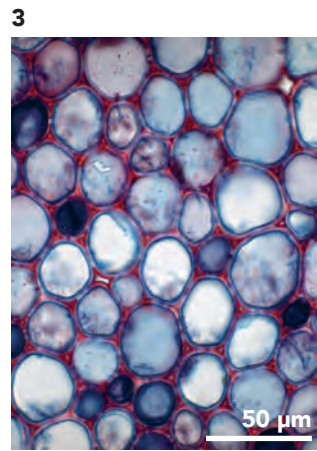
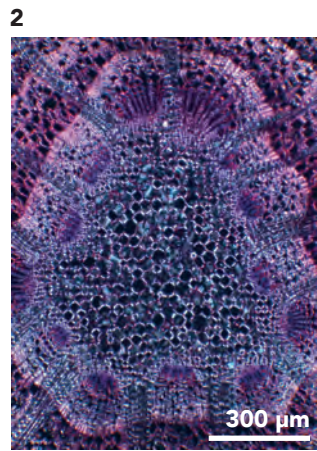
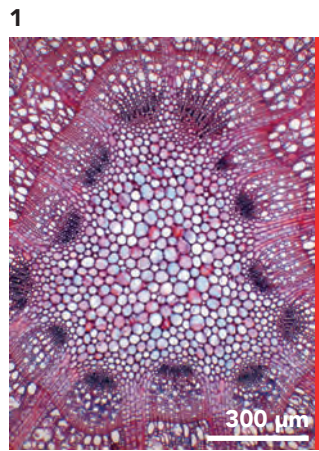
### Transverse section (18–28)

Bark general view: 18–21; 19 = 18 in xpl, one-year-old specimen, 21 = 20 in xpl, four-year-old specimen.

**Phloem** (22–25) consists of sieve tube elements and parenchyma cells in tangentially irregular arrangement. Broad rays with sclereid cells (20). Few druses in small rays. Ray dilatation usually by cell extension, rarely by cell augmentation. Collapsed sieve tube elements present. Primary phloem (23–27; 25 = 24 in xpl, one-year-old specimen, 27 = 26 in xpl, four-year-old specimen) appears as groups of fibre-sclereids which build together with sclereids a hollow cylinder with irregular edges and many rhomboid crystals. **Cortex** (23, 26) with oval thick-walled cells, 10–30 µm in diameter, many intercellulars of all sizes. **Periderm** (23, 26, 28): Phelloderm one to two cell layers thick. Phellem consists of several layers of thin-walled cork cells, optionally with a small tangential band of cells with yellow or brown contents. The initial periderm is built between cortex and epidermis. **Epidermis** (28) cells thick-walled. Epidermis is present only in one-year-old specimens.



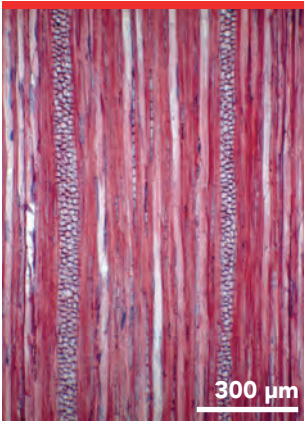
***Fagus sylvatica* L. (Fagaceae)**



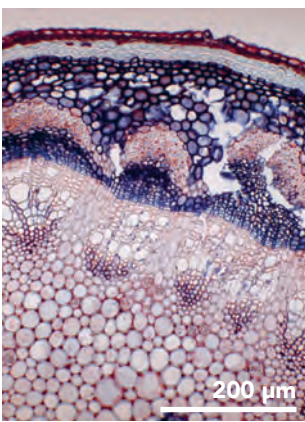


*Fagus sylvatica* L. (Fagaceae)

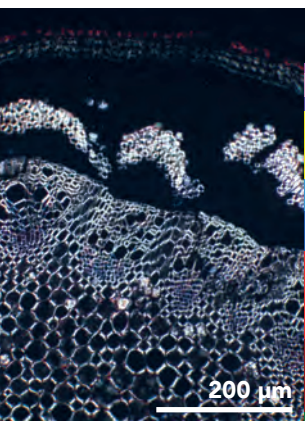
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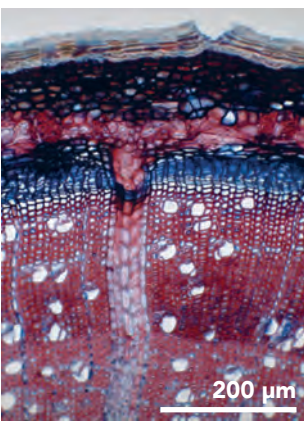
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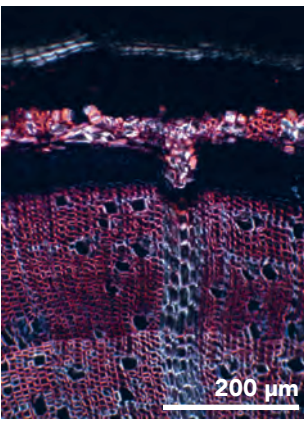
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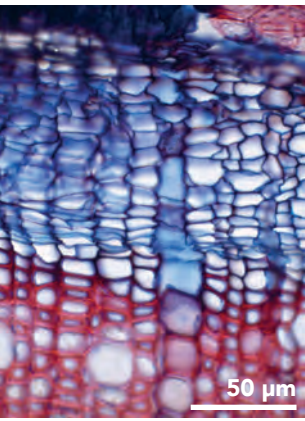
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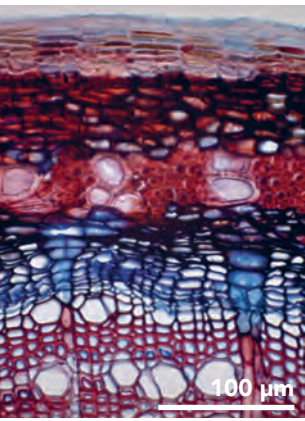
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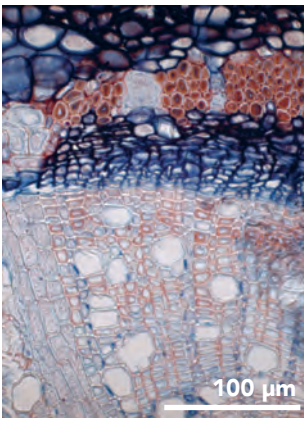
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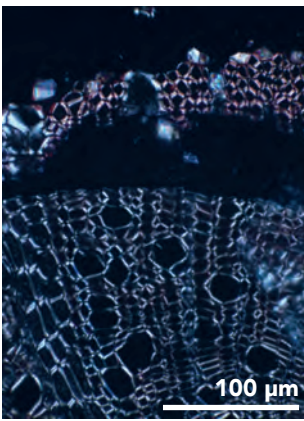
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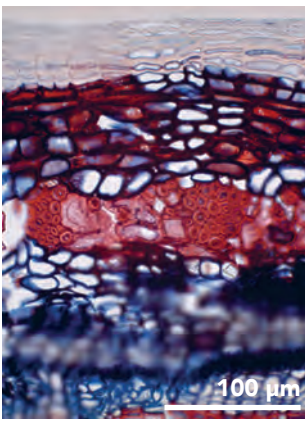
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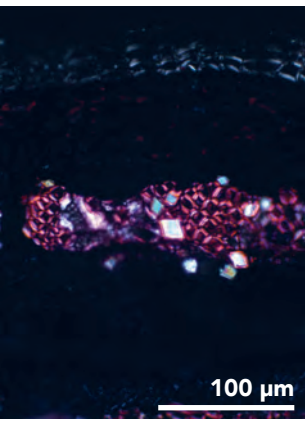
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