

Glossary of Botanical Microscopy Terminology

- Abaxial:** Located away from or on the opposite side of the axis of an organ (e.g., lower epidermis of a leaf) (cf. adaxial).
- Achene:** A single-seeded fruit; dry, not opening when ripe, pericarp and testa connate or tightly compressed (e.g., *Echinacea*) (syn. cypsela).
- Acicular crystals:** Needle-like crystals usually occurring in groups (syn. raphides).
- Acuminate:** Tapering to a fine point.
- Acute:** Pointed, sharp angled.
- Adaxial:** Located toward the axis or surface of an organ (e.g., upper epidermis of a leaf) (cf. abaxial).
- Aerenchyma:** Plant tissue made of air-filled intercellular spaces occurring between groups of parenchyma cells that facilitate gas exchange from the leaves and stems to the roots.
- Alate:** Having wing-like extensions or parts (e.g., seeds of maple *Acer* spp.).
- Aleurone grain:** Protein granules found in a single layer of cells (aleurone layer) in the outermost portion of the endosperm. Staining with iodine solution results in a red-brown color.
- Alternate:** Leaves or other lateral organs borne singly at different heights on the axis (cf. opposite).
- Amphicribal vascular bundle:** Vascular bundle characterized by xylem completely surrounded by phloem (syn. amphiphloic vascular bundle; cf. amphivasal vascular bundle).
- Amphiphloic vascular bundle:** Vascular bundle characterized by xylem completely surrounded by phloem (syn. amphicribal vascular bundle; cf. amphivasal vascular bundle).
- Amphivasal vascular bundle:** Vascular bundle characterized by phloem completely surrounded by xylem. Also called leptocentric bundles (cf. amphicribal vascular bundle).
- Amplexicaul:** Clasping the stem, as in the base of a leaf.
- Amyloid substances:** Starch or starch-like substances contained within cell walls (e.g., starch stains blue in a dilute solution of iodine).
- Anastomosing:** Branching and rejoining to form loops, connecting by cross-veins and forming a network.
- Androecium:** The stamens of a flower considered as a group.
- Anisocytic:** Stomata characterized by three subsidiary cells that resemble other epidermal cells, except that one is considerably smaller than the other two.
- Annular, annulated:** Arranged in the form of a ring.
- Annular cell:** Cells with annular thickenings of the walls.