Transverse Section Microscopy of Cinnamon

Experiment 19 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To study a transverse section of the assigned cinnamon bark and record diagnostic tissues.

Principle

A thin transverse section reveals how protective, conducting, supporting, storage and secretory tissues are arranged. Inner bark shows phloem, fibres, sclereids, rays and oil or mucilage cells. Commercially scraped true-cinnamon bark may have little or no cork.

Identity and Drawing Guide

Field	Guide
Botanical source	Cinnamomum verum
Family	Lauraceae
Part	Bark
Labels to include	Label the outer remaining region, fibres, sclereids, phloem, rays and secretory cells.

Requirements

- Authenticated prepared section or teacher-assigned sectioning material
- Compound microscope, slides, coverslips and approved mountant/stains
- Pencil and labelled drawing sheet

Procedure

1. Verify material

Record botanical source, part, specimen treatment and section level.

2. Prepare or select slide

Use the assigned thin section or prepared slide; select an intact representative region.

3. Survey at low power

Identify the tissue outline and major regions before increasing magnification.

4. Examine diagnostic details

Locate supporting and secretory features. Thin inner-bark architecture and secretory elements are useful in combination.

5. Draw and label

Label the outer remaining region, fibres, sclereids, phloem, rays and secretory cells.

6. Compare

Compare with authenticated material and write which observed features support identity.

Observations and Record

Feature	Actual observation / drawing label
Outer protective region	_____
Ground / storage tissue	_____
Vascular arrangement	_____
Diagnostic structure	_____
Magnification / scale	_____

Result

Diagnostic tissues observed: _____. The section _____ supports the assigned identity because _____.

Precautions

- Cork abundance differs with species and bark preparation.
- Use prepared slides for toxic material and avoid direct exposure to powders.
- Do not mistake folds, air bubbles or stain deposits for diagnostic structures.
- Start with low power and record magnification.

Viva Questions and Answers

1. What is a transverse section?

A section cut across the long axis or specified plane of the material.

2. Why is tissue arrangement important?

The pattern helps distinguish plant parts and authentic materials.

3. Which feature is especially useful here?

Thin inner-bark architecture and secretory elements are useful in combination.

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