

Study no. – 05

Name of the Study: Study on demonstration of pathway of ascent of sap in Nayantara (*Vinca sp*) twig.

Ascent of sap: The upward movement of sap from base of the plant to the leaf or upper portion of the plant is known as ascent of sap.

Requirements:

1. Scalpel
2. *Vinca sp* stem
3. Beaker
4. Water
5. Safranin
6. Blade
7. Watch glass
8. Slide
9. Cover slip
10. Microscope

Procedure: A young *Vinca sp.* twig was cut with a blade and kept in pure water. A solution of safranin with water was prepared. A plant part was made in the *Vinca sp.* twig keeping the end inside the safranin mixed water. The stem was kept in safranin solution for sometimes keeping dipped the lower end into solution. After sometime some transverse sections of the stem were cut from the upper portion and observed under the microscope.

Observation: It was observed that tracheary element especially the vessel wall was stained with safranin.

Inference: It was proved that the safranin solution passed through the xylem vessel showing the pathway of ascent of sap.

Precautions:

1. The twig should be cut carefully keeping the end under water so that the vessels are not blocked by air bubble.
2. The cut should be slant.
3. Sufficient time should be allowed to raise the color water.
4. A fresh plant should be used for experiment.
5. The transverse section should be thin enough to understand easily.

