

Experiment 14.3—Cross Section of a Root, Stem, and Leaf

Object: To observe the microscopic structure of a leaf and to compare the microscopic structures of monocot and dicot stems and roots

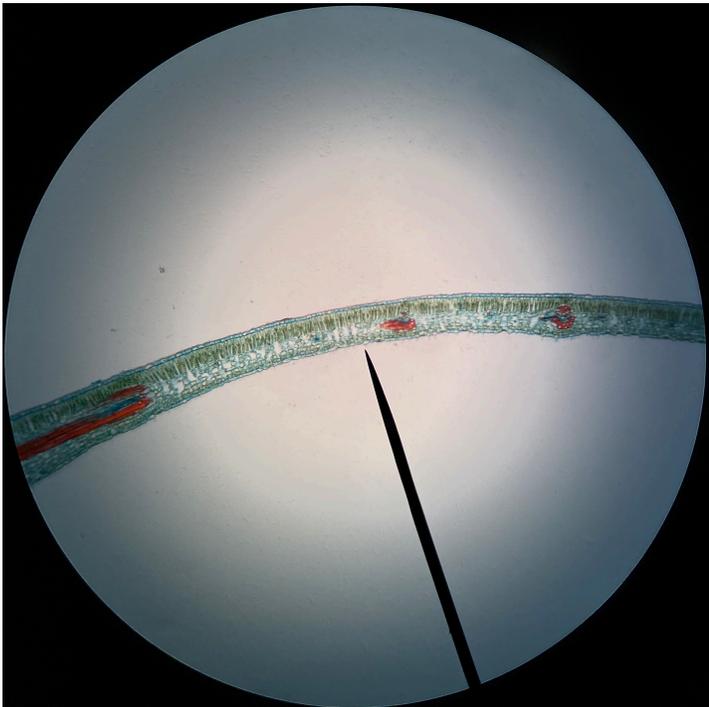
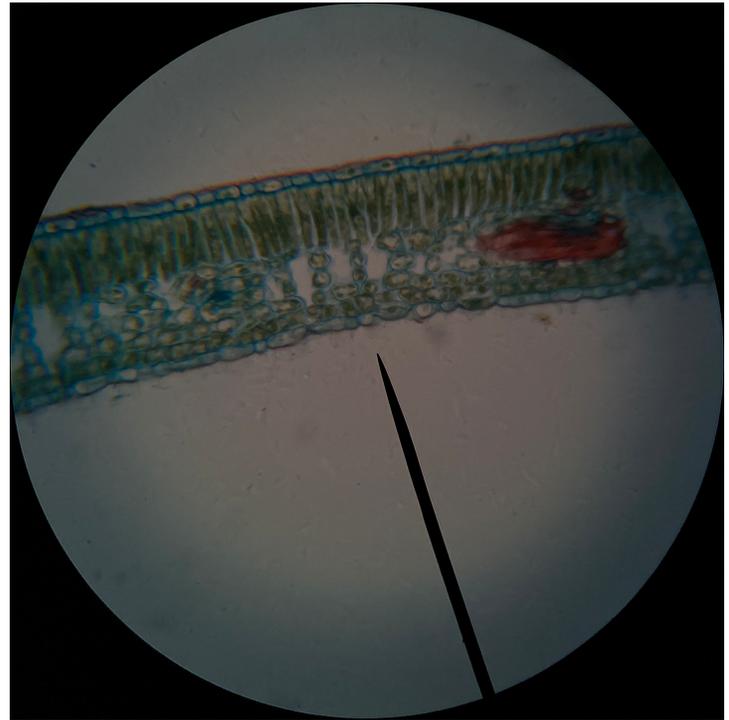
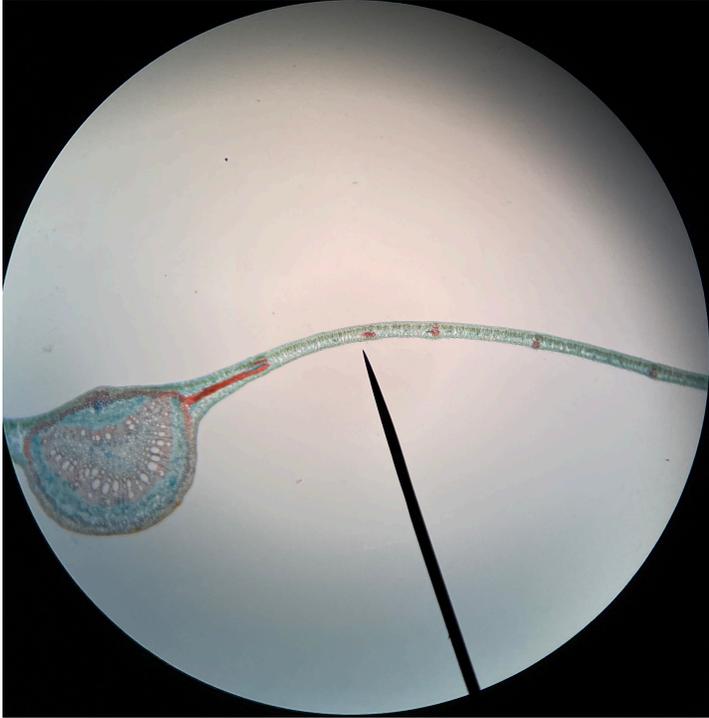
We have five different prepared slides to view. If you recall from our previous microscope labs we have made our own slides and have used slide that are pre-made with staining. In this lab all of the slides we will be using are prepared (or pre-made). I will offer you three views of each slide; 40x, 100x, 400x. Utilize these slides to accomplish the directions of this experiment.

All prepared slides we will be using:



Part A-Observation of a Leaf Cross Section

Utilizing the slide MS-FICLEAF [Ficus (dicot) Leaf, c.s.], figures 1.2-1.3 & 2.1-2.4 (two different view-choose the one you want to use; figure 1 or 2)



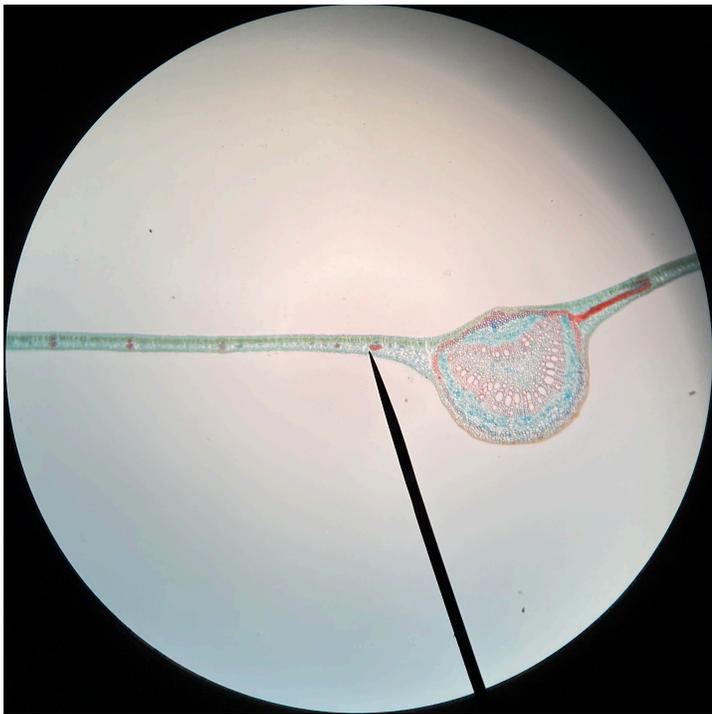


Fig. 2.1 - 40x

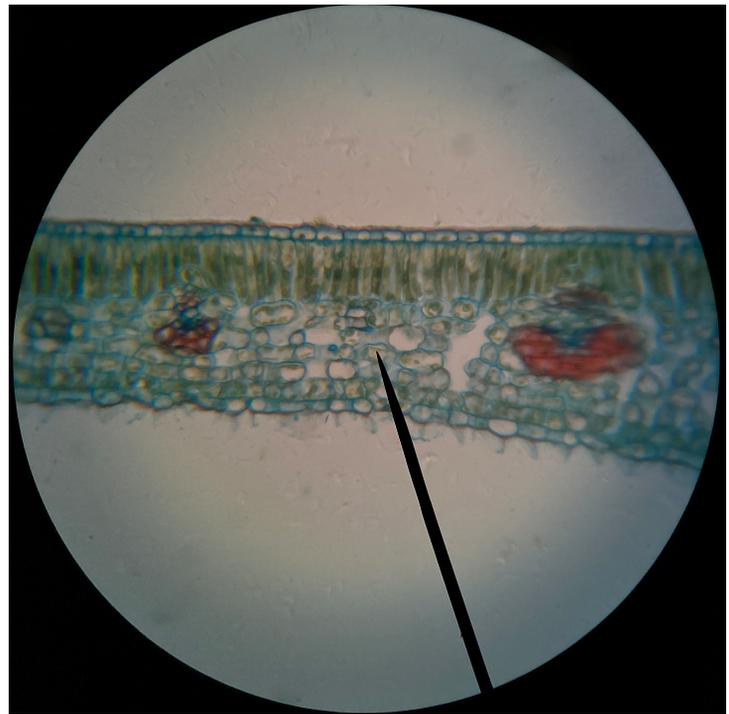


Fig. 2.3 - 400x

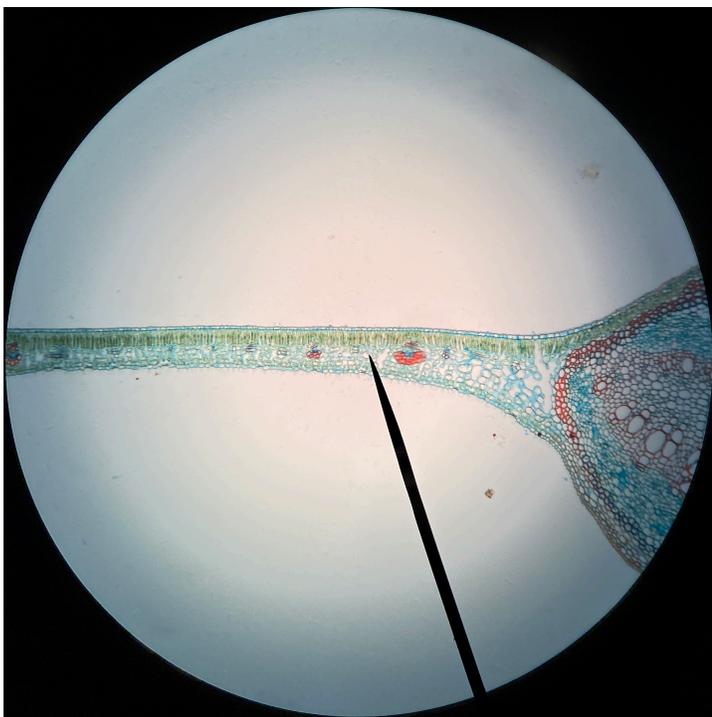


Fig. 2.2 - 100x

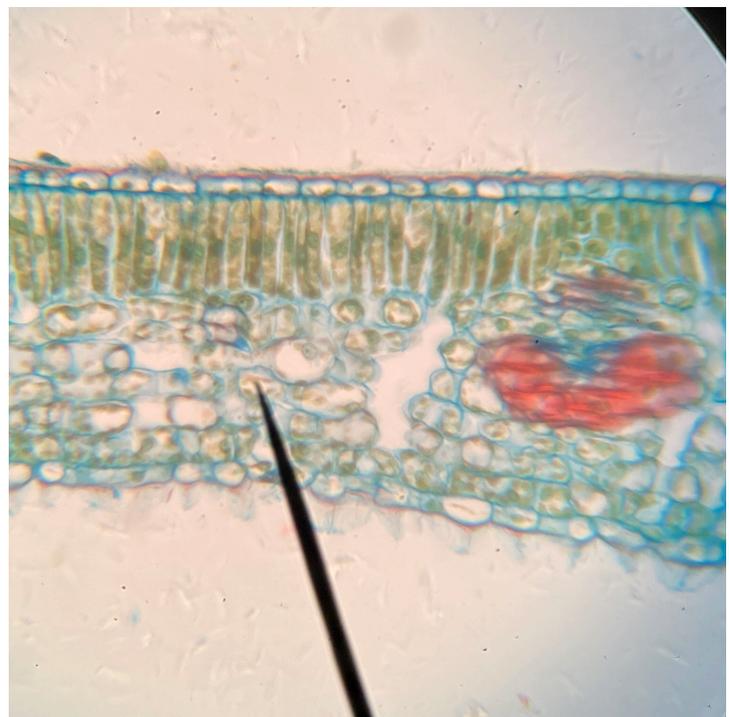


Fig. 2.4 - 400x & Magnified 2X on camera

Part B-Observation of a lateral cross section of a Ranunculus root

Utilizing the slide MS-RANROOT [Ranunculus (Buttercup), roots], figures 3.1-3.4 & 4.1-4.4 (two different view-choose the one you want to use; Figure 3 or 4)

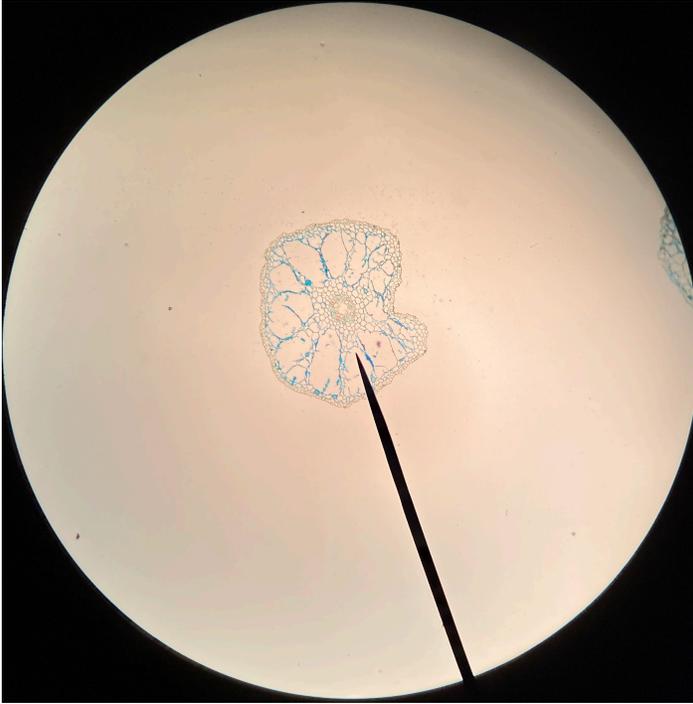


Fig. 3.1 - 40x

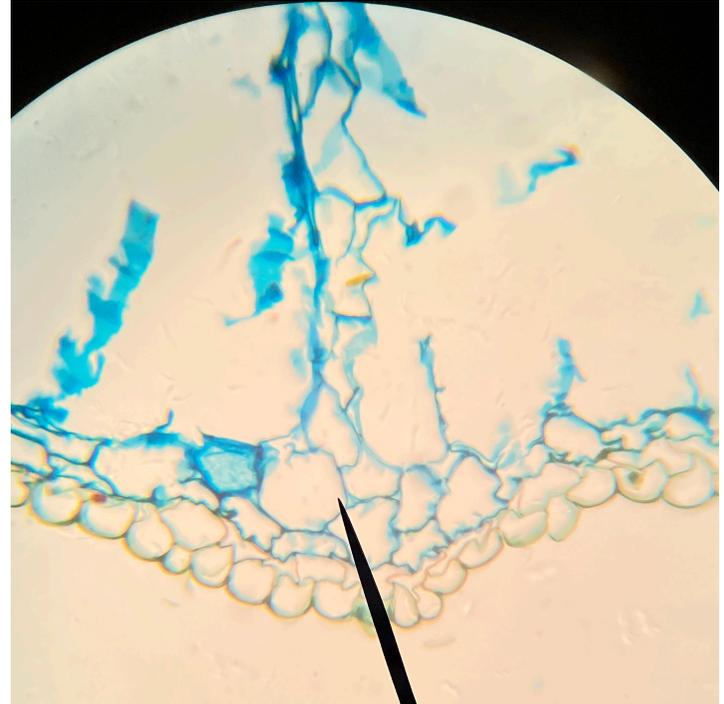


Fig. 3.3 - 400x Outside edge of cross section

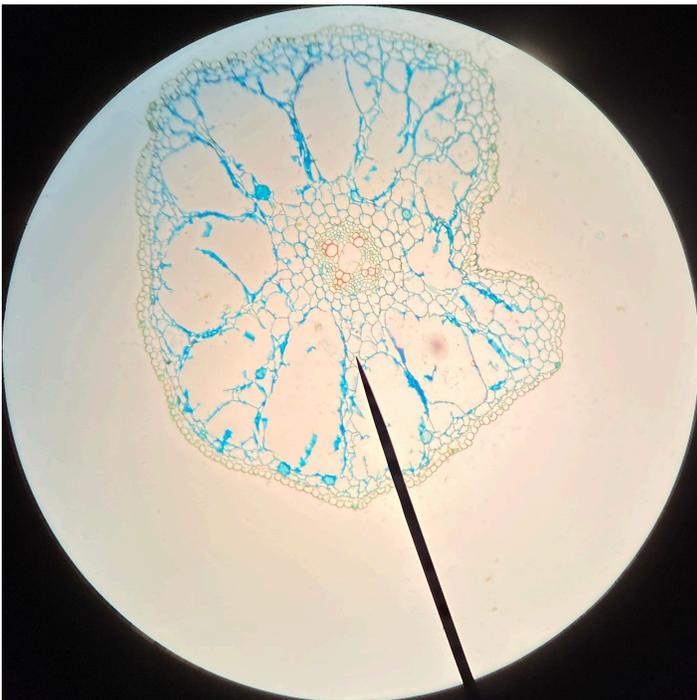


Fig. 3.2 - 100x

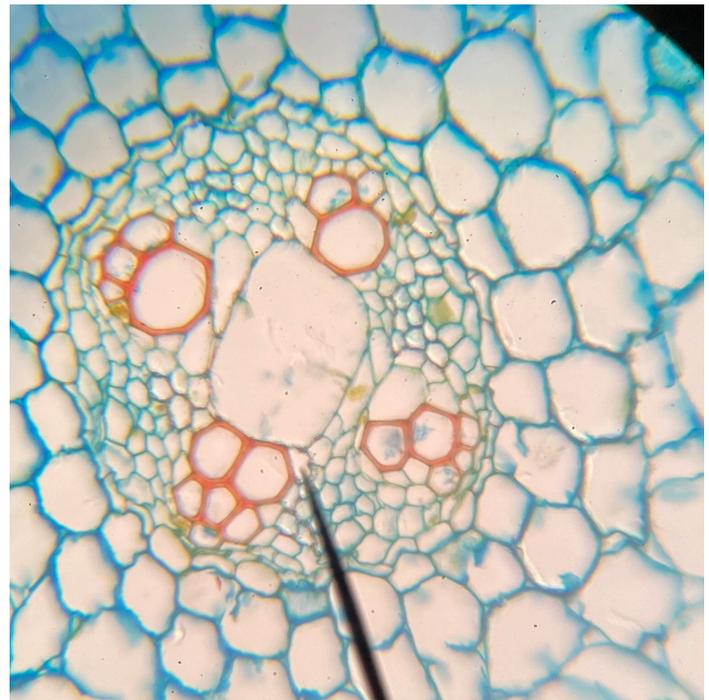


Fig. 3.4 - 400x Inside (center) of cross section



Fig. 4.1 - 40x

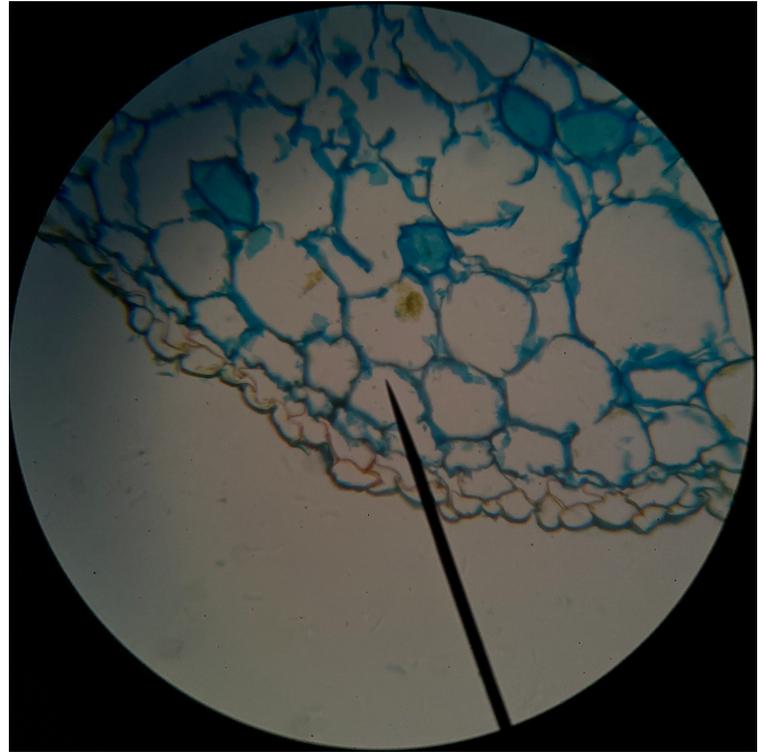


Fig.4.3 - 400x Outside edge of cross section

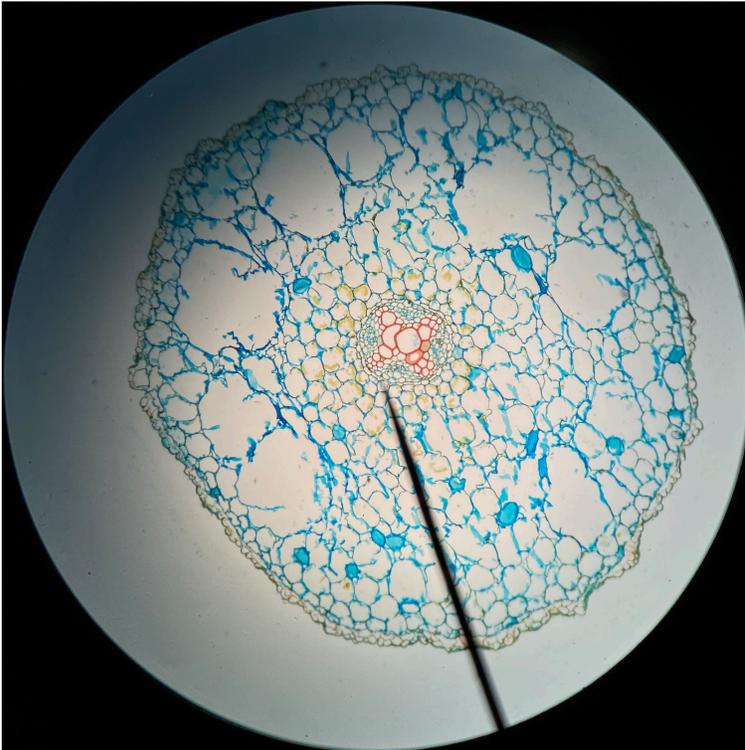


Fig. 4.2 - 100x

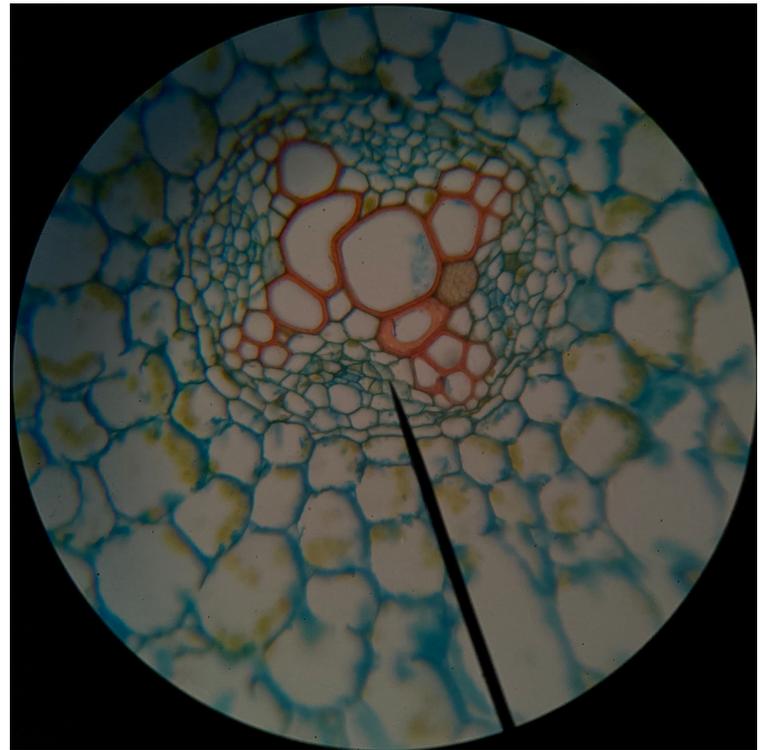


Fig. 4.4 - 400x Inside of cross section

Part C-Observation of a lateral cross section of a Zea mays root

Utilizing the slide MS-ZEAROOT [Zea Mays (Corn), roots, c.s.], figures 5.1-5.5



Fig. 5.1 - 40x

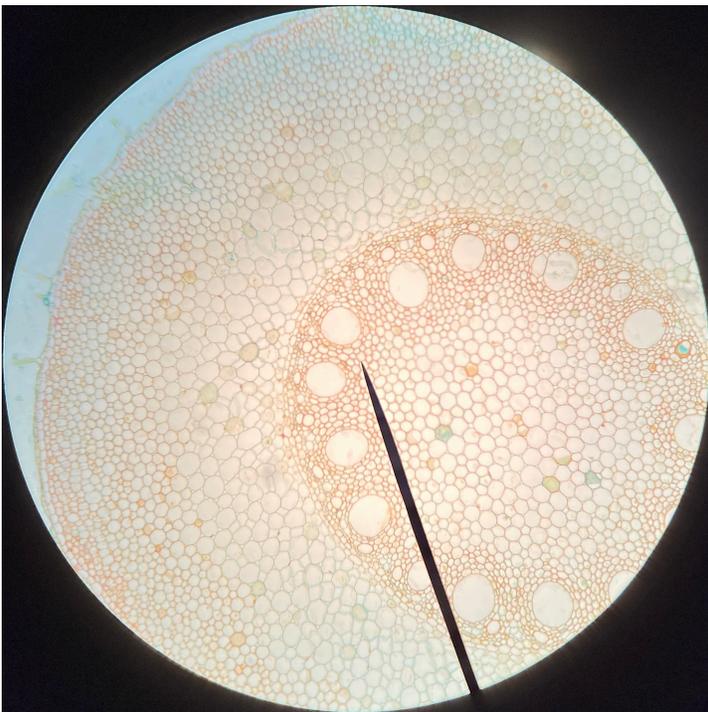


Fig. 5.2 - 100x Left side of cross section

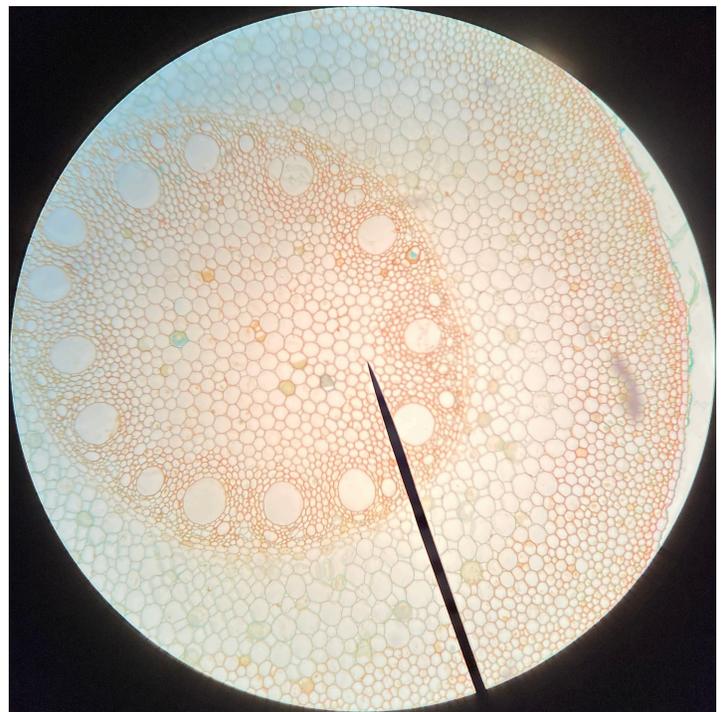


Fig. 5.3 - 100x Right side of cross section

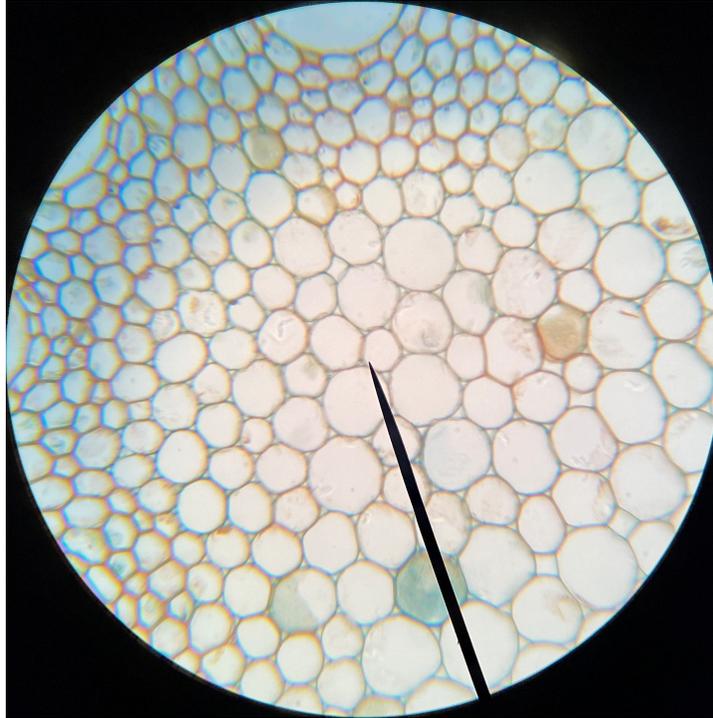


Fig. 5.4 - 400x Inside of cross section

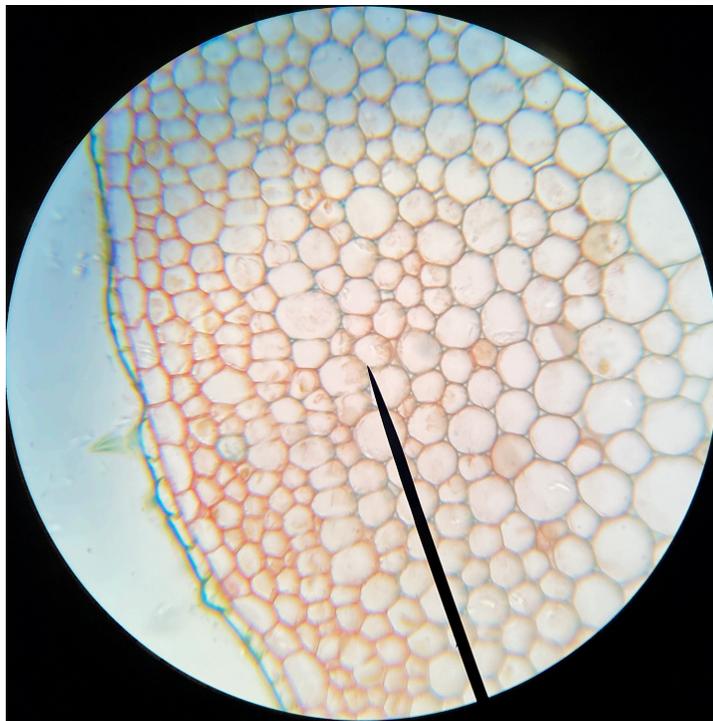


Fig. 5.5 - 400x Outside of cross section

Part D-Observation of a lateral cross section of a Zea mays stem

Utilizing the slide MS-ZEASTEM [Zea Mays (Corn), stem, c.s.], figures 6.1-6.4

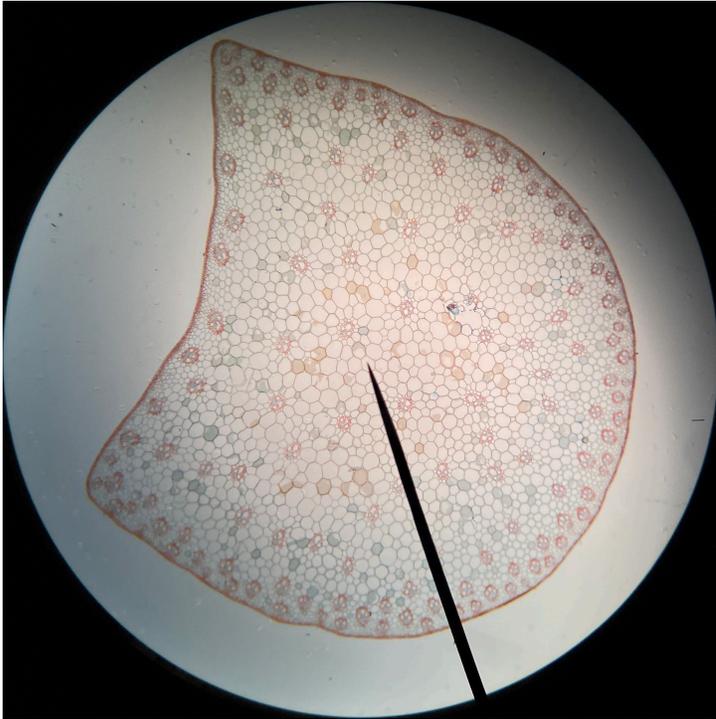


Fig. 6.1 - 40x

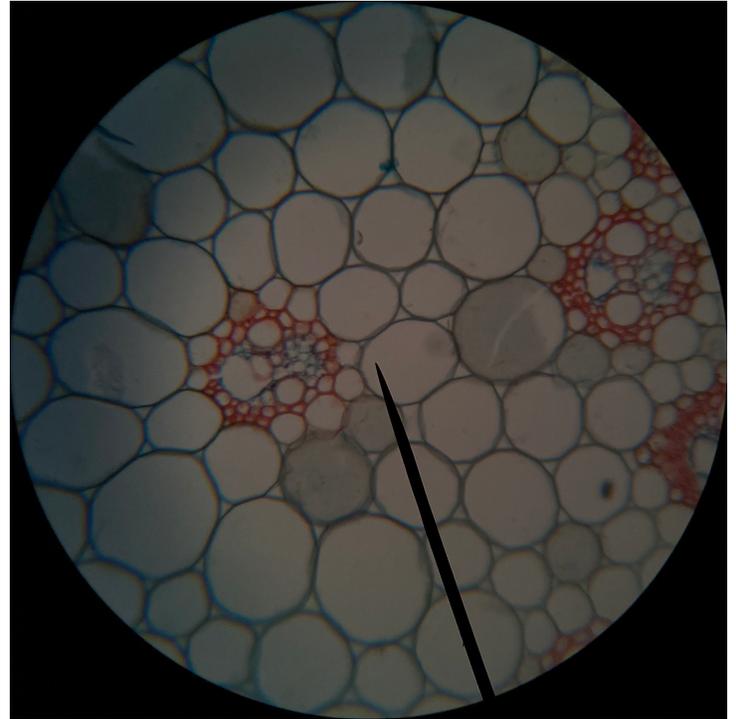


Fig. 6.3 -400x Left side of cross section

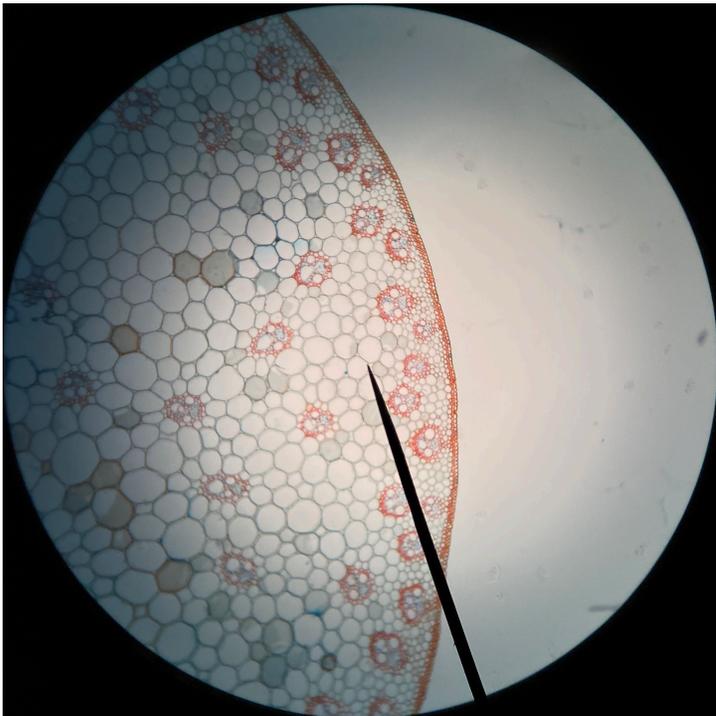


Fig. 6.2 - 100x Left side of cross section

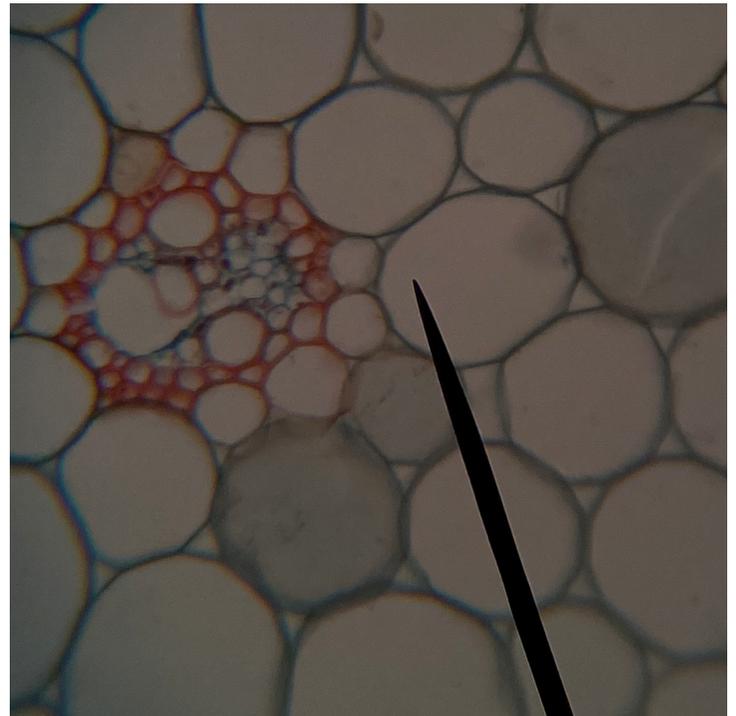


Fig. 6.4 - 400x & Magnified 2X on camera

Part E-Observation of a lateral cross section of a Ranunculus stem

Utilizing the slide MS-RANSTEM [Ranunculus (Buttercup), stem], figures 7.1-7.4

Note on figure 7.1-This sample of a Ranunculus stem was too large for the whole cross section to fit in the FOV at 40x. This means that the clear portion in the lower right part of the picture would be the pith tissue inside the dicot stem.

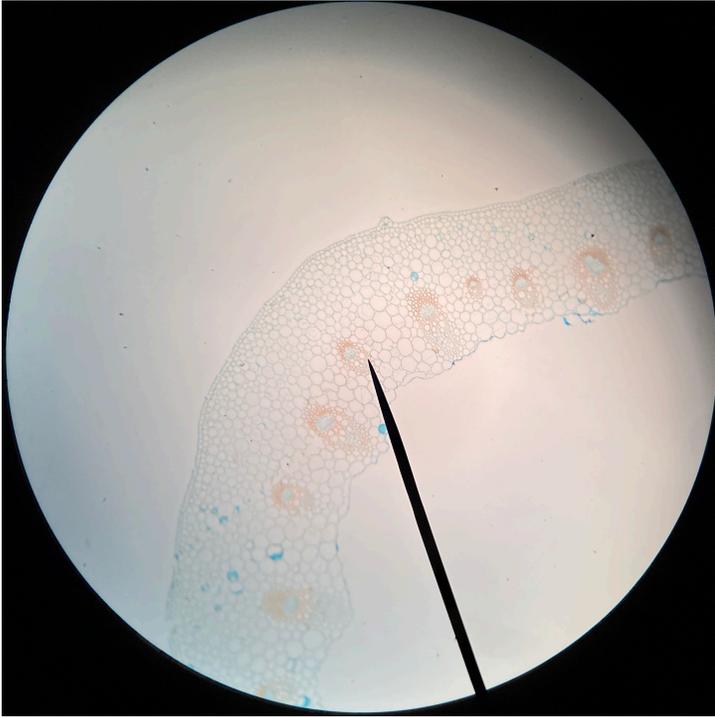


Fig. 7.1 - 40x

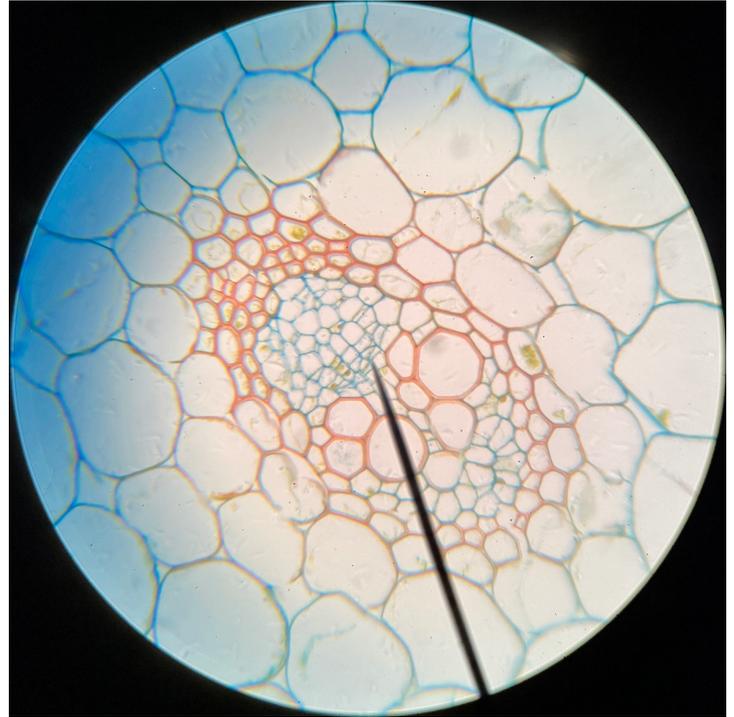


Fig. 7.3 -400x Left side of cross section

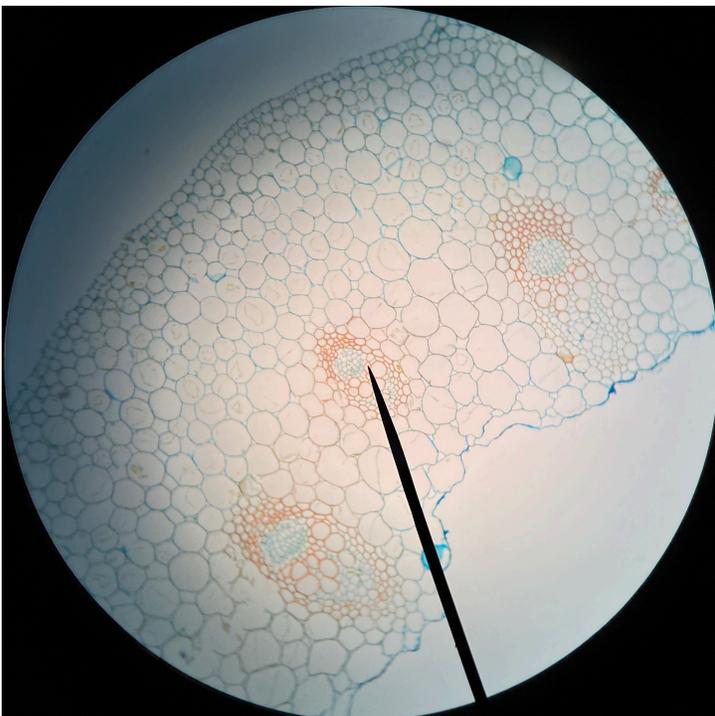


Fig. 7.2 - 100x Left side of cross section

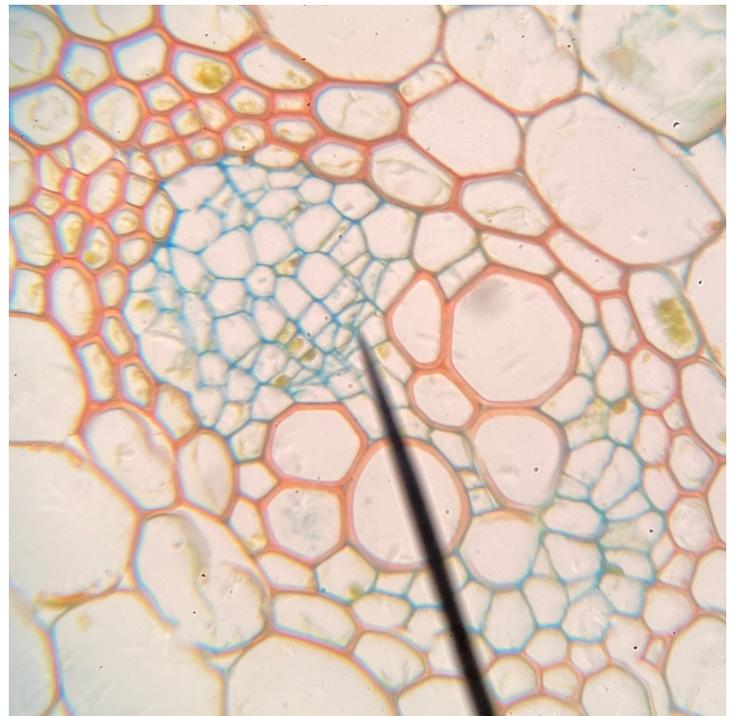


Fig. 7.4 - 400x & Magnified 2X on camera