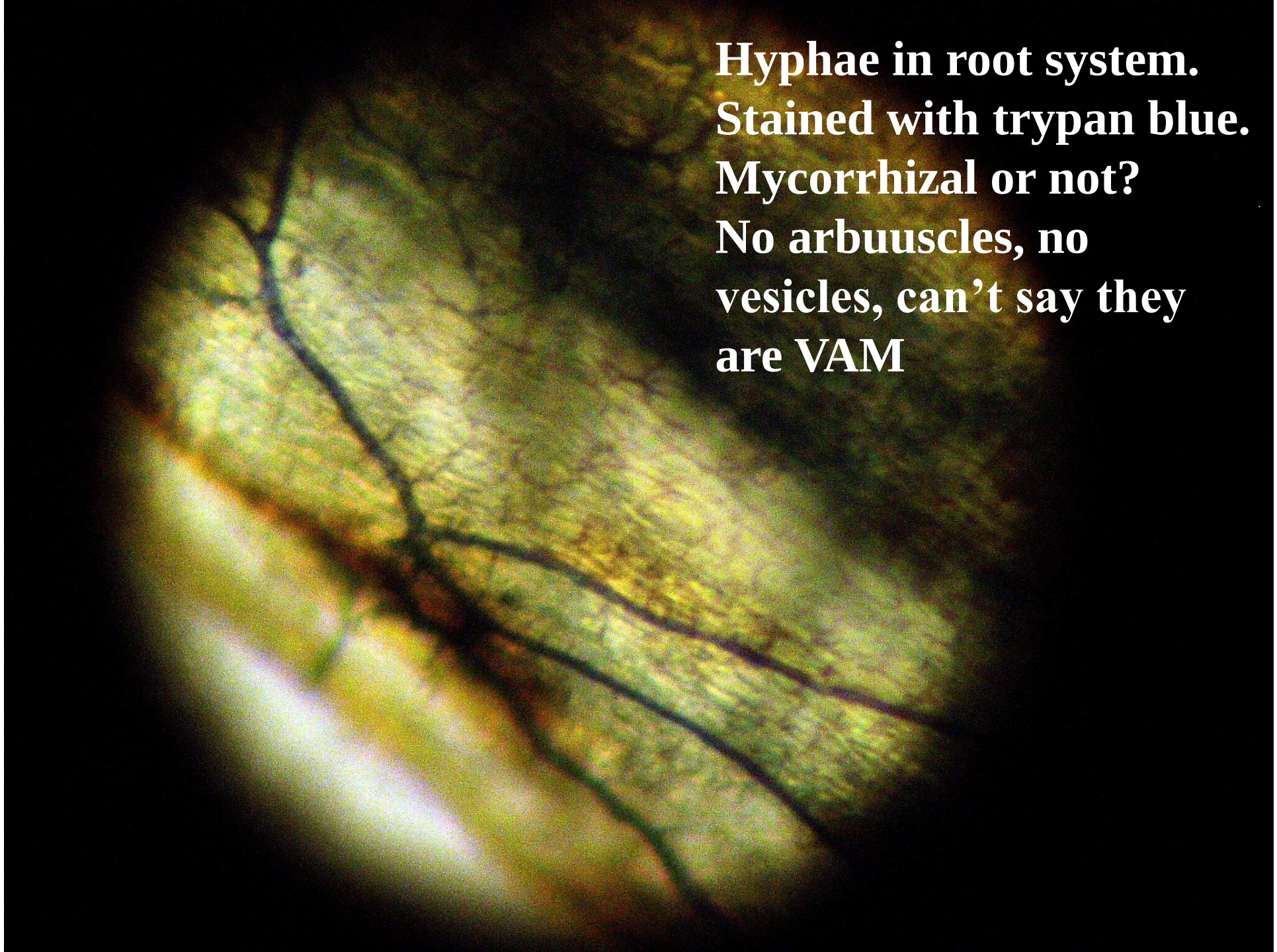
Microscopy - Chapter 1

Lecture 11

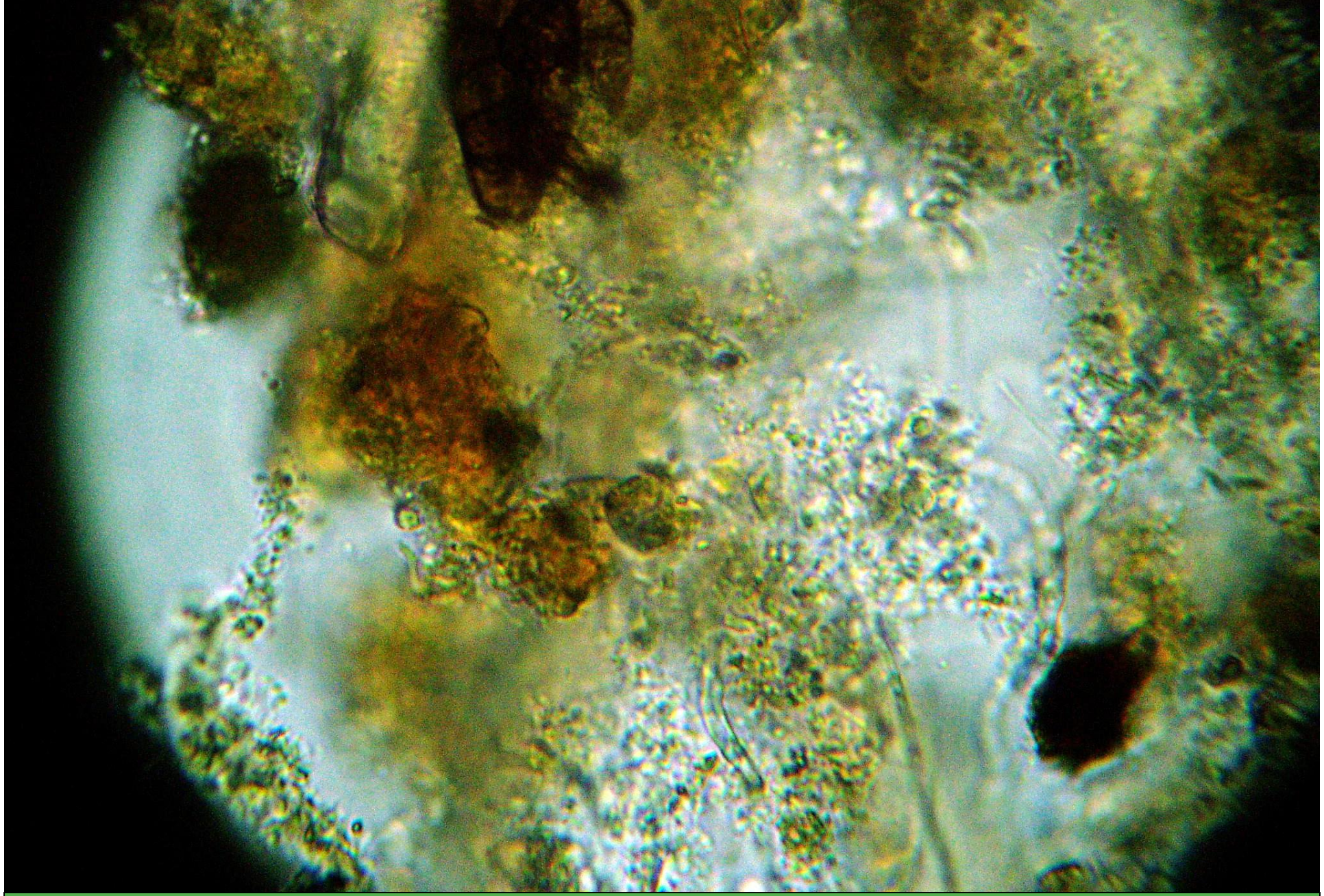
Organic Matter, Mineral Matter, etc.


Hyphae in root system.
Stained with trypan blue.
Mycorrhizal or not?
No arbuuscles, no
vesicles, can’t say they
are VAM

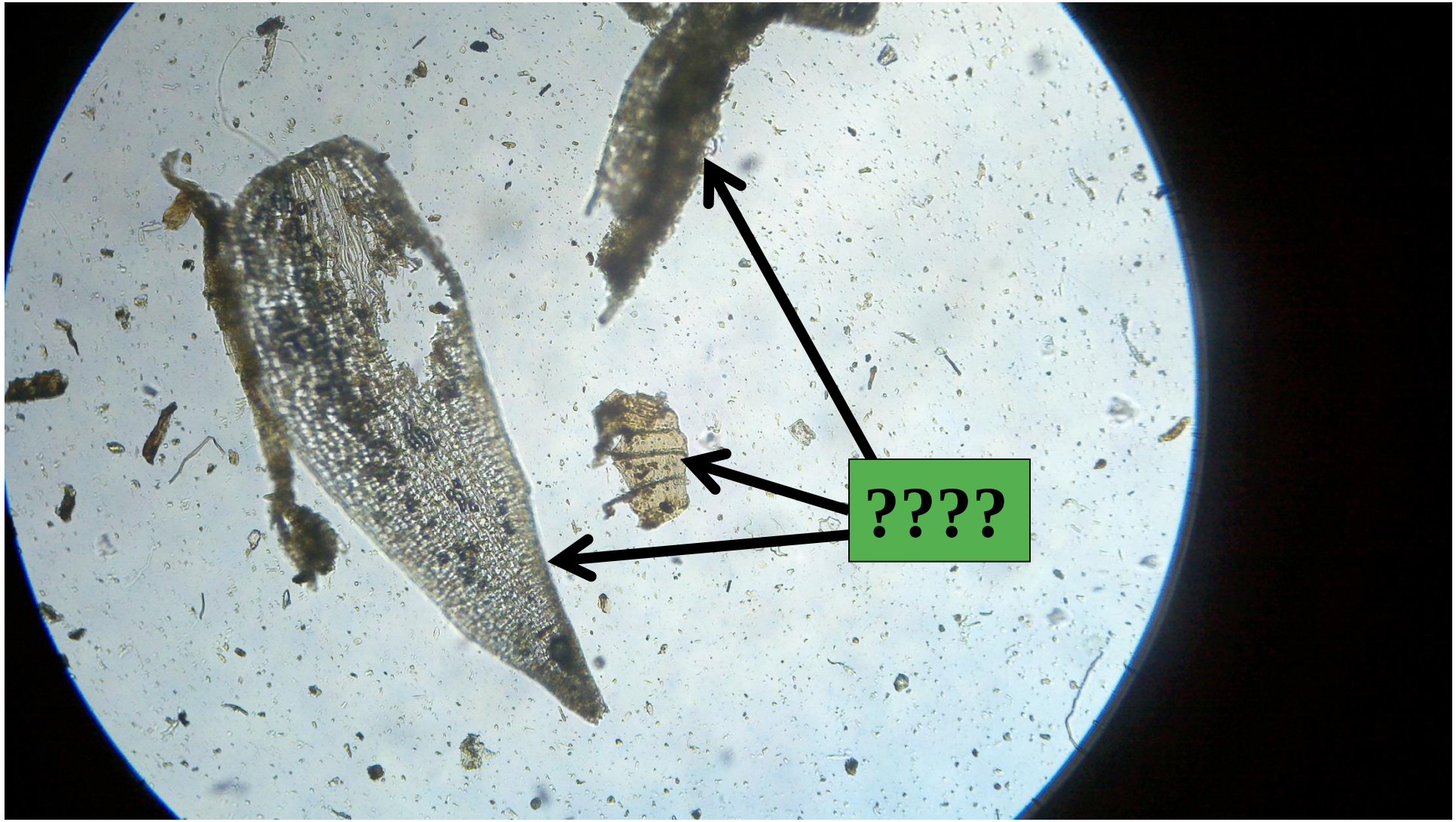

Is this a fungal hyphae?
Focus along the whole length!

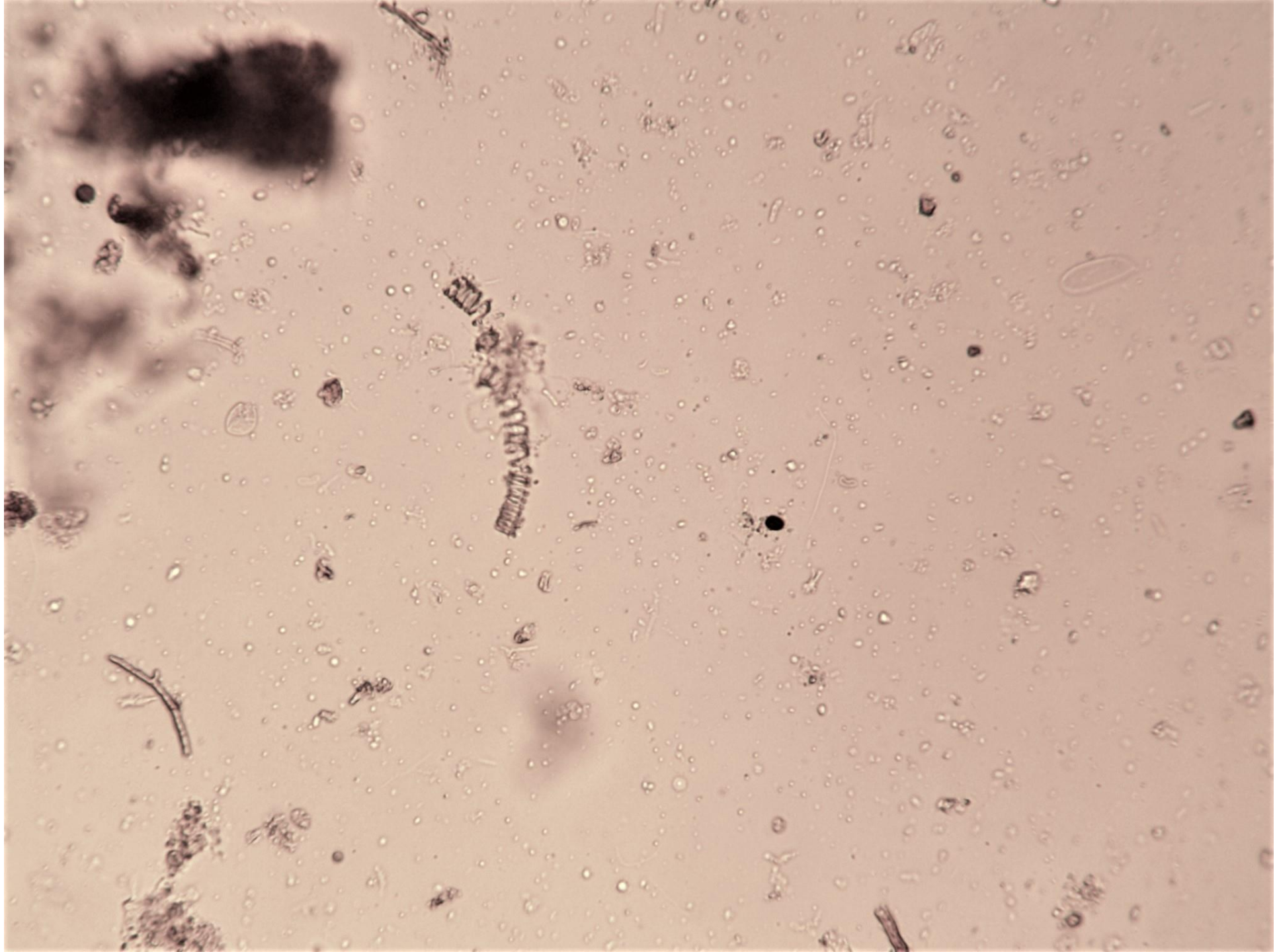
What is this?

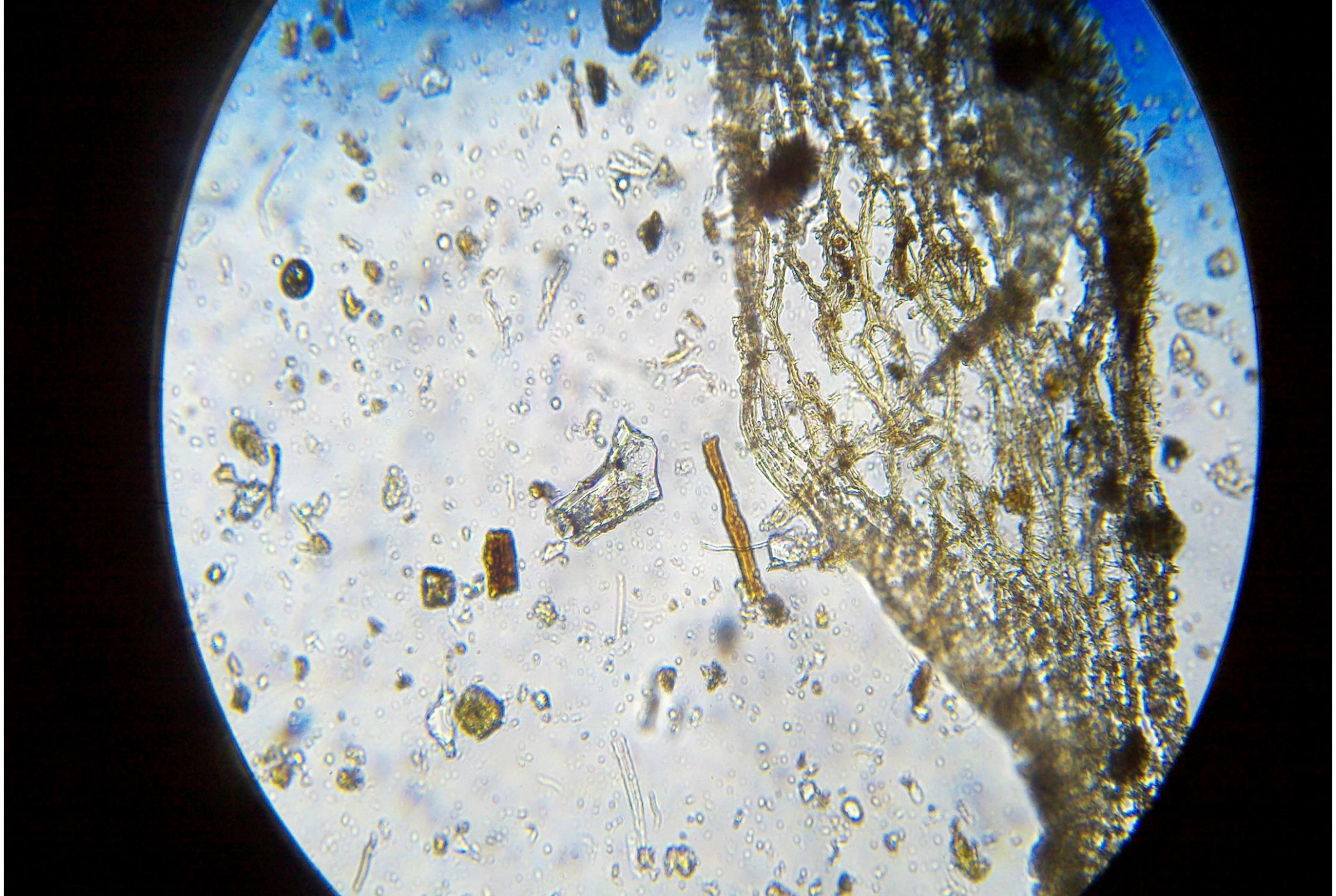

What is this?



How can you measure fungi with this?





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Something never seen before?

- Take a picture or video of it.
- Focus in on mouth parts, digestive system, surfaces of the “unknown”, etc.
- Send the picture to the Soil Foodweb School to the forum where most of the students and mentors will see the picture. Ask for opinions on the ID of this creature.
- When something is suggested, search google for pictures of the organism(s) suggested by others.
- Is that suggestion close?

Assessment of Soil Organisms

The instructions allowing each student to move from Novice to Confident Microscopist are given in Chapter 2 of this Foundation Course and the FC4 Course Manual.

Also included in Part 2 and the FC4 Course Manual are additional details on how to prepare samples and use the spreadsheet to produce a report.

It will typically take several reads and repeat trails to get comfortable with the spreadsheet.

Typical order of Assessment

The order in which each organism group is typically done is as follows:

1. Nematodes (scan the entire drop; ID individuals to feeding group)
2. Measure lengths and diameters (1 µm) of actinobacteria.
3. Measure length and width of fungal hyphae observed.
4. Count the number of each group of protozoa.
5. A 1:5 dilution is usually used for these 5 groups.

Statistical Significance

We will also remind you of how to take samples, and how many samples to take to satisfy statistical analysis. Standard deviation and its use in assessing the significance of data will be discussed.

Practice, Practice, Practice!

- Grab your microscope spreadsheet. Start assessing a soil, compost extract or tea.
- If you need help --- and we expect you will want some help --- go to the FC forum.
- Keep active on the FC Forums. Post pictures of unknown “things”. Let us help you get things assessed as easily as possible.

Keep an eye on:
www.soilfoodweb.com