

Microscopy - Chapter 1

Lecture 8

Protozoan Morphology



Protozoa

- Make nutrients plant available
- Build soil structure
- Indicators of lack of oxygen, compaction



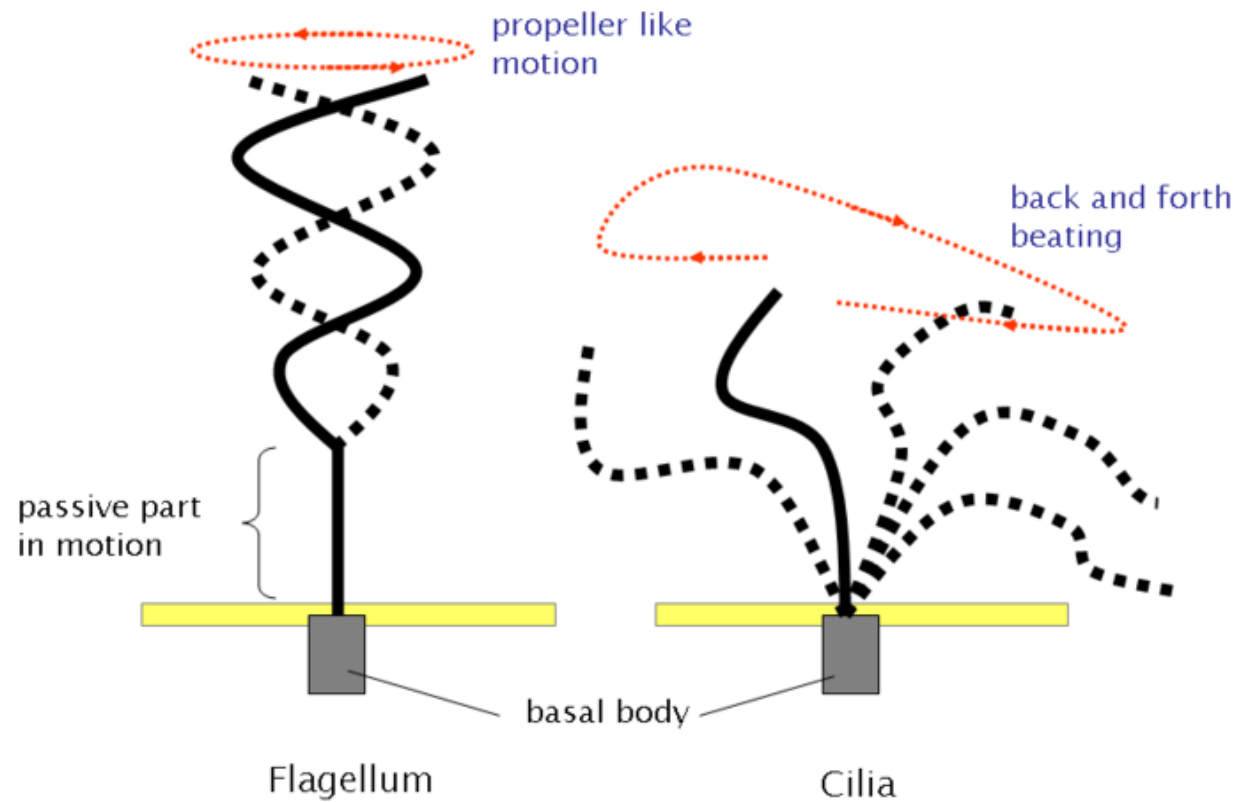
Protozoan Morphology

- **Flagellates** - aerobic
 - Round, pear, teardrop, banana
 - Rolling, bumbling motion, one to several flagella
 - Cysts – single layer outer membrane, small, round
- **Amoebae** - aerobic
 - Very slow oozing movement
 - Testate amoebae
 - Cyst – double outer membrane
- **Ciliates** – indicate anaerobic
 - Very fast, many cilia (short hairs) may cover whole body or only part, larger than other protozoa usually
- High numbers reduce bacterial numbers

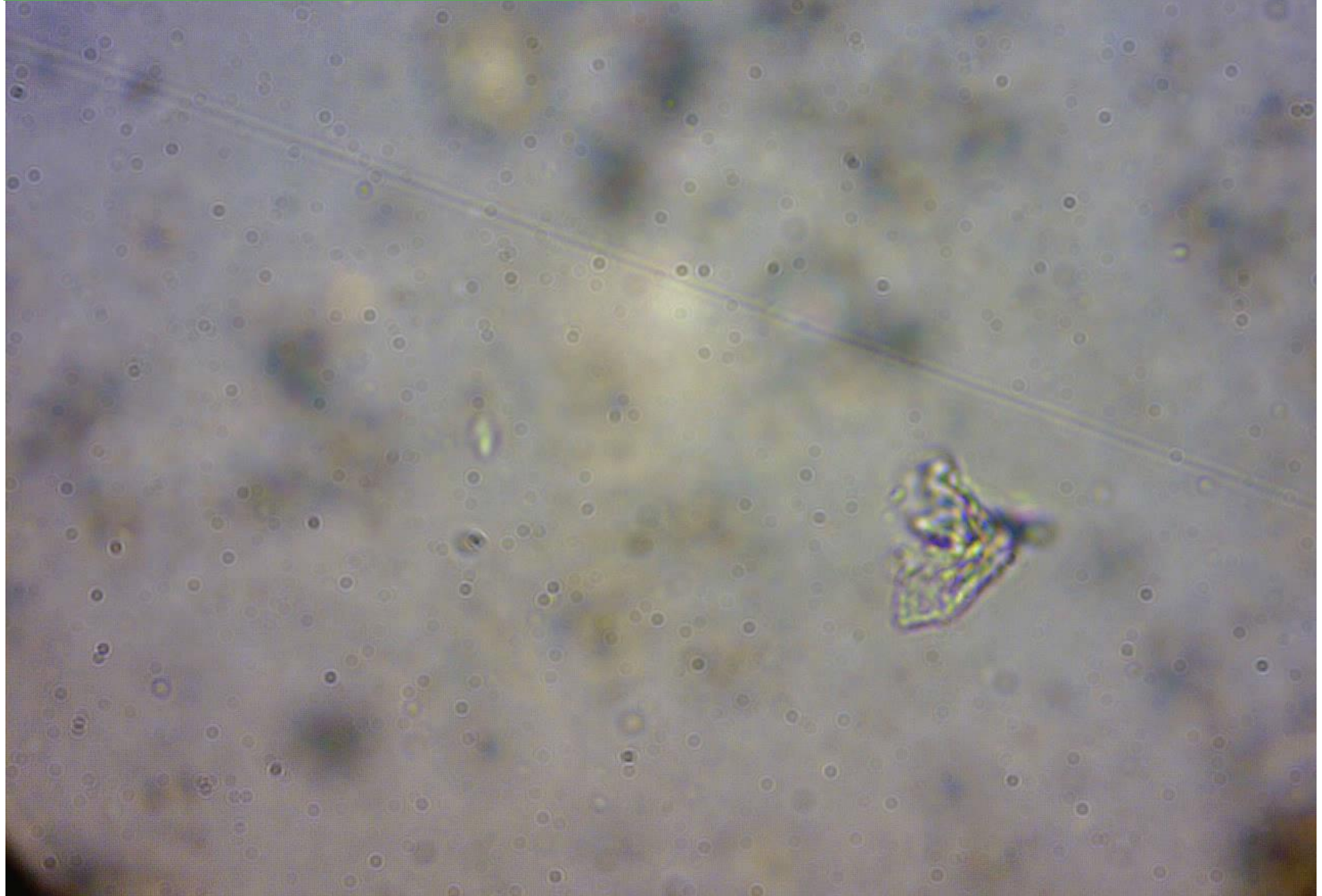


400X Total Magnification

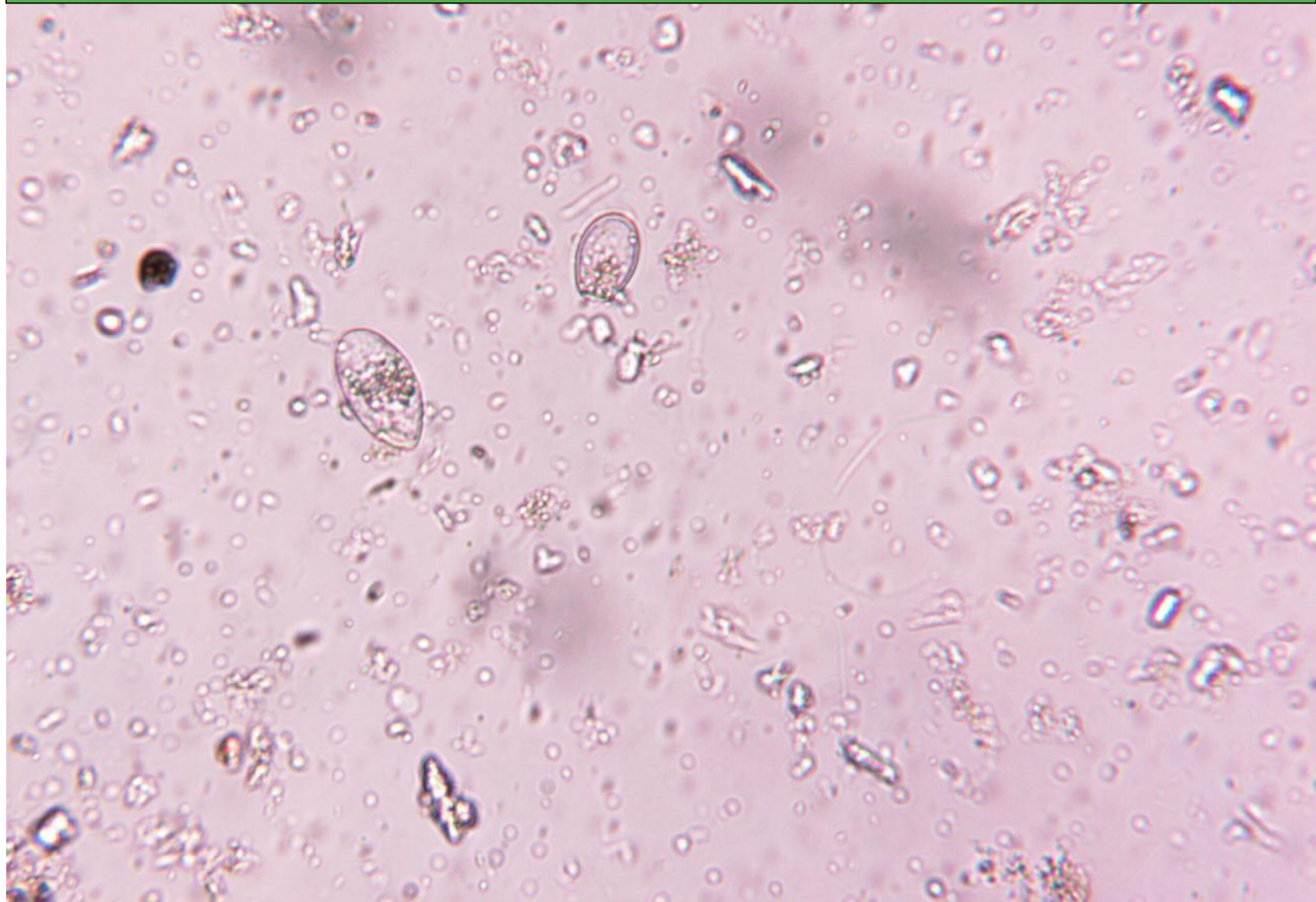
Protozoan Motility

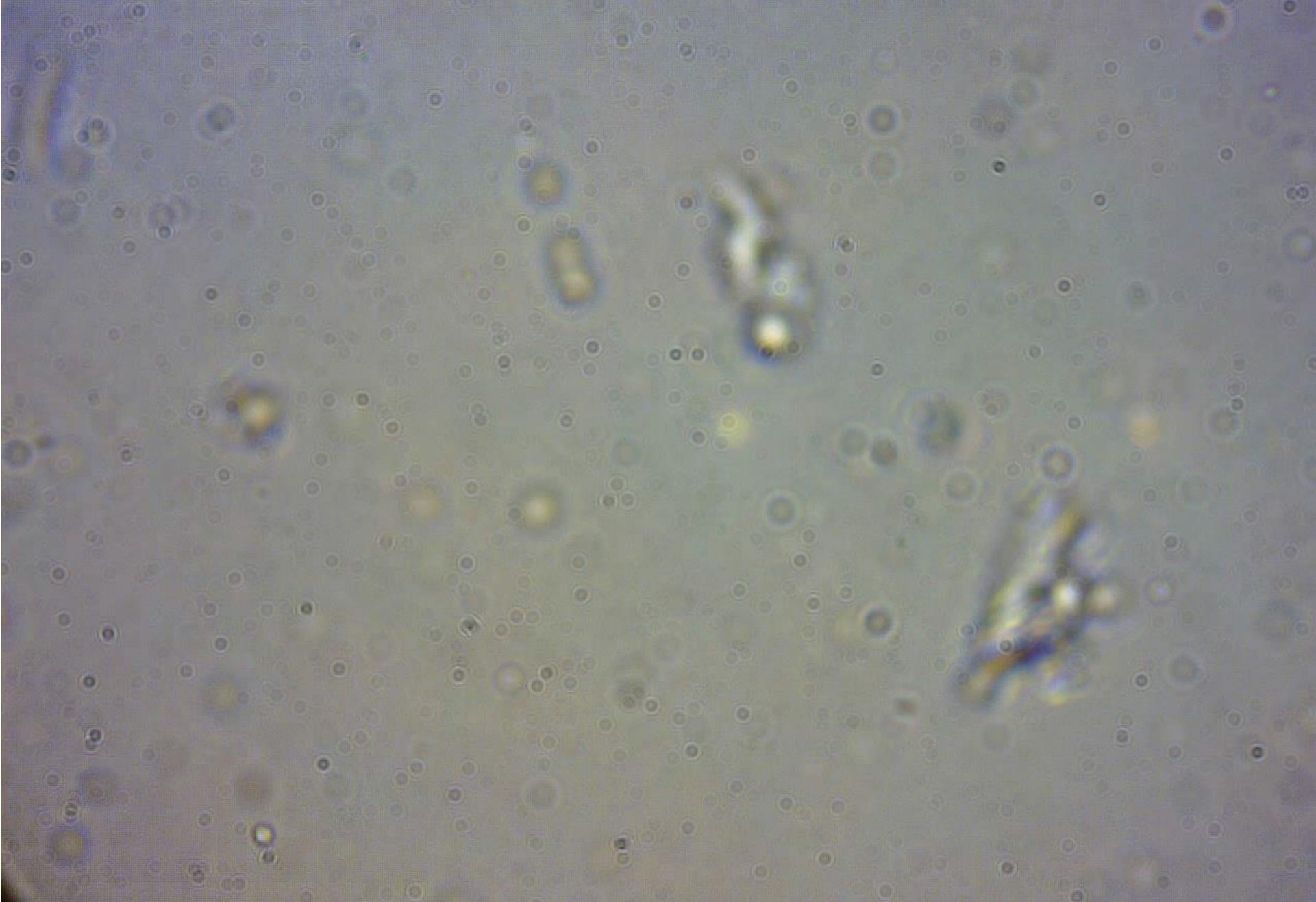


Flagellate movement



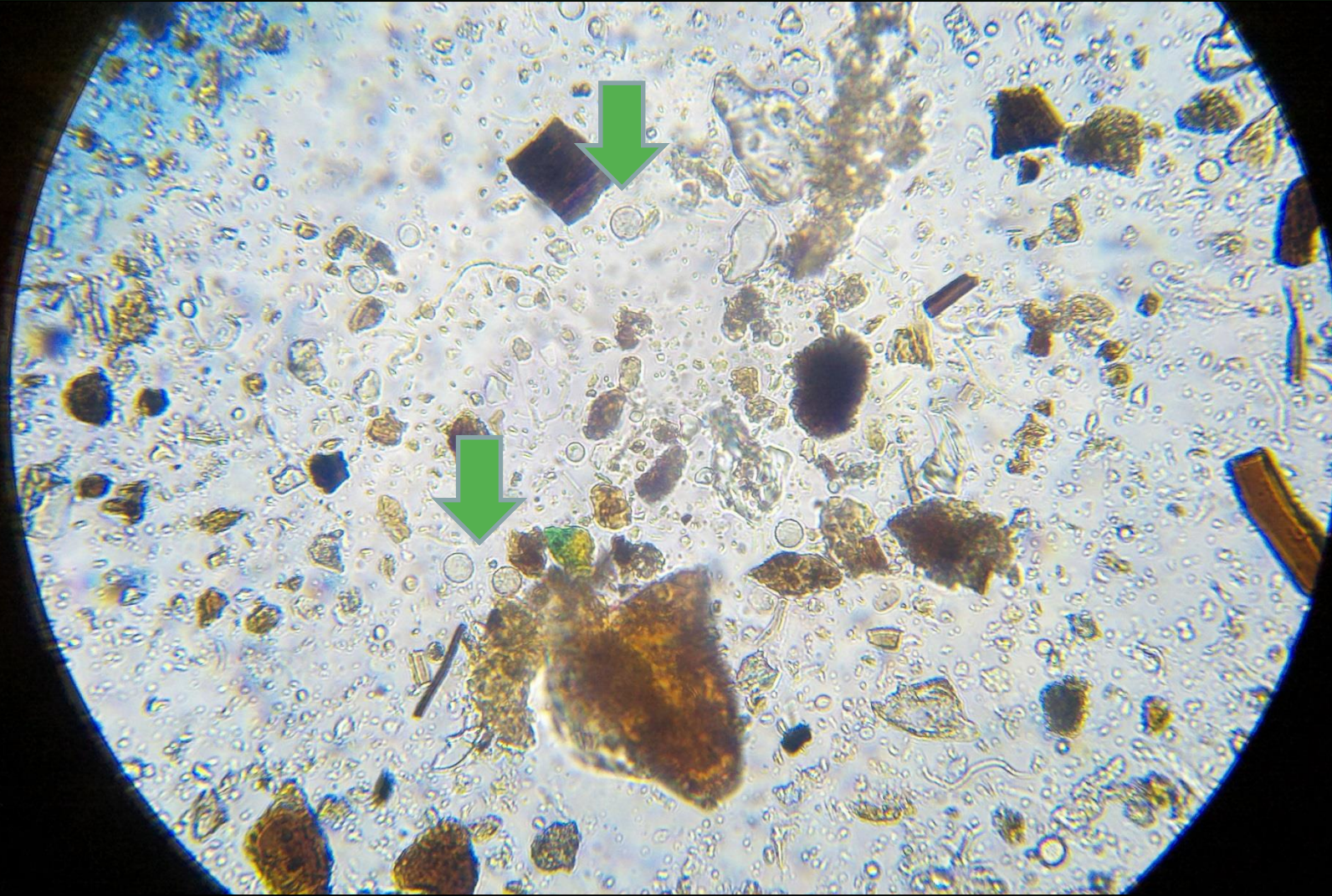
Testate Amoebae





Fast-moving naked amoebae

Cercozoa – extremely slow moving



Amoeba



Stellate amoebae

Testate Amoeba undergoing reproduction



Ciliates reproducing







Ciliate: All ciliates indicate that anaerobic conditions are occurring at this time



Stalked Ciliate

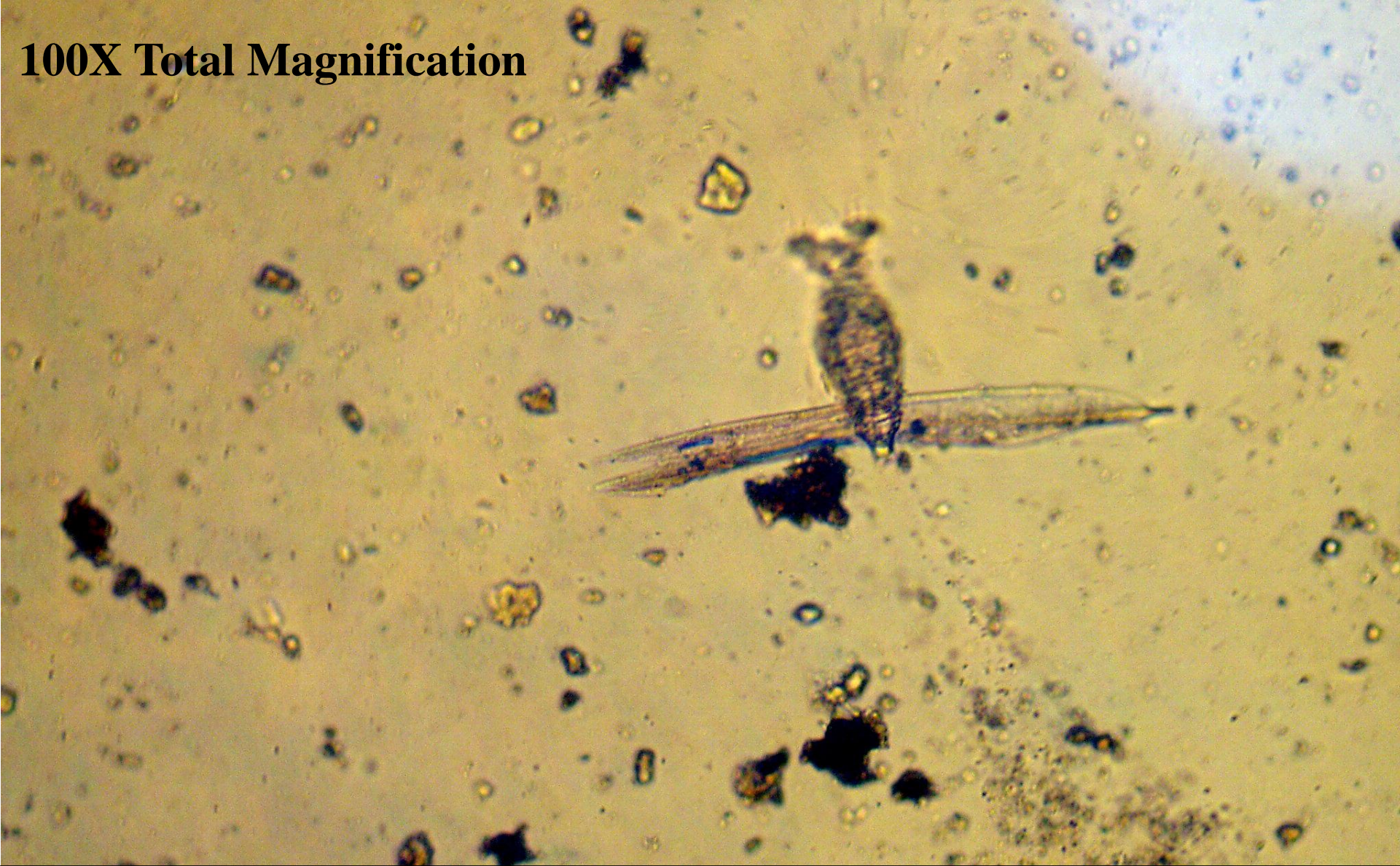


Vorticella: A type of stalked ciliate



Stalked Ciliate (video)

100X Total Magnification

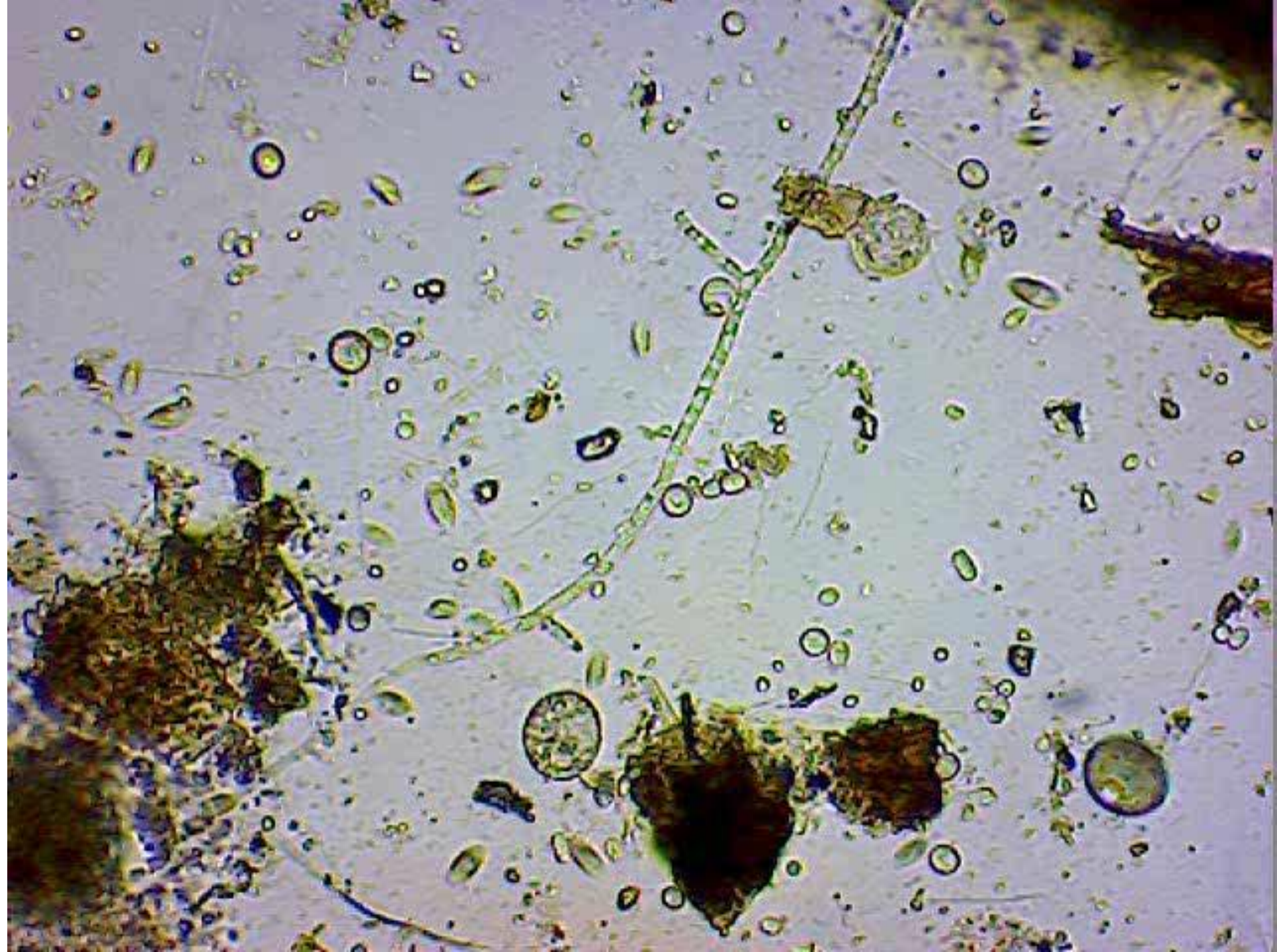


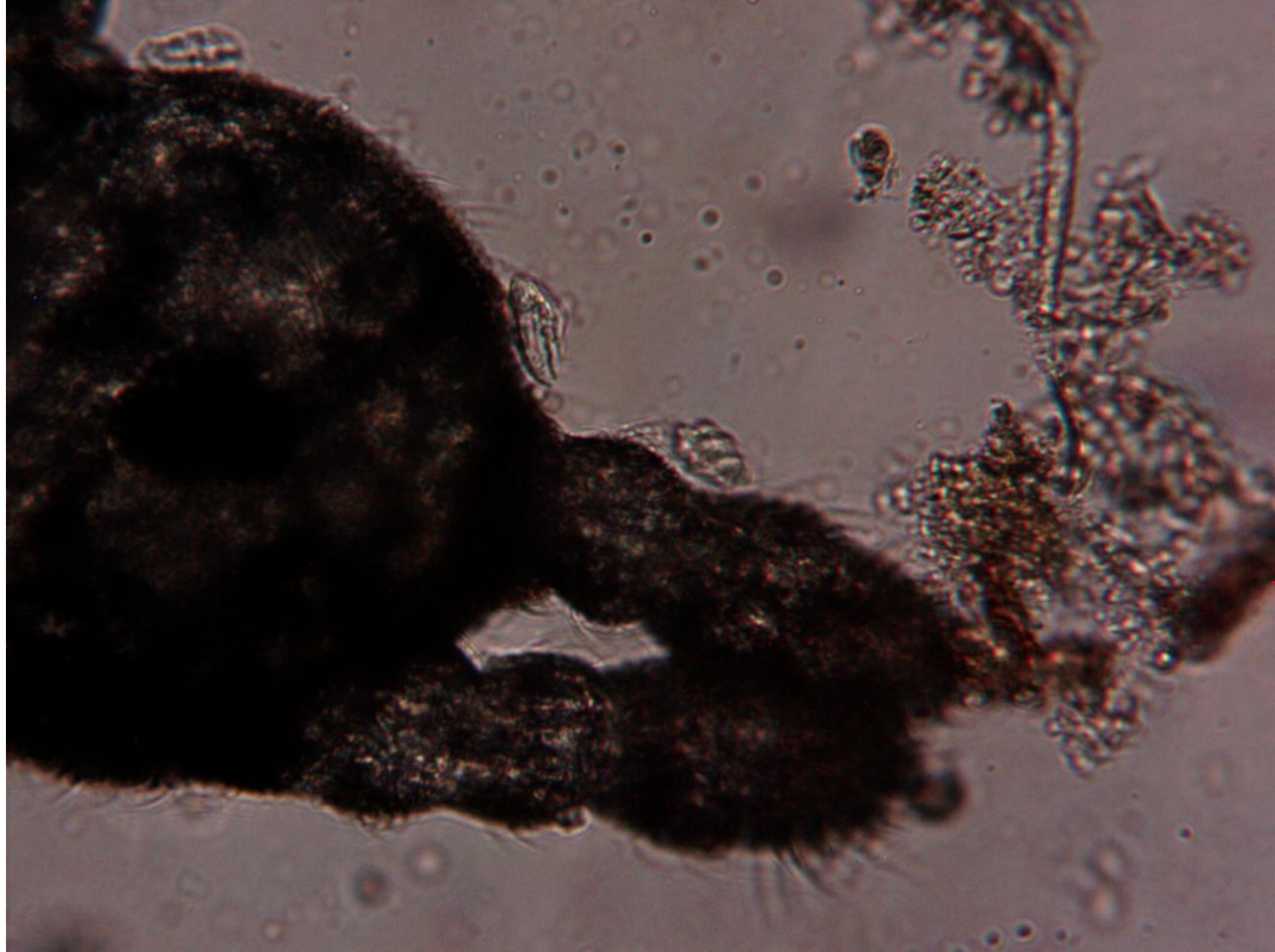
Rotifers have multi-cellular, segmented bodies which differentiates it from ciliates.



Insect larva – probably fly larva









Parasite Morphology

- Literally thousands of different parasites but we just note whether they are present, and if they are in high numbers.
- Parasites require anaerobic conditions to reproduce, and to hatch. The larval stages usually require extremely high levels of bacteria as food.
- Do an internet search for “microscope pictures of parasites” and do some sleuthing. Clients with animals will want to know how to deal with these problems.
- Get conditions aerobic again; return fungi, protozoa and nematodes that inhibit, consume and compete with parasites back to the soil.



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Roundworm



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Whipworm



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Cat Coccidia



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Hookworm



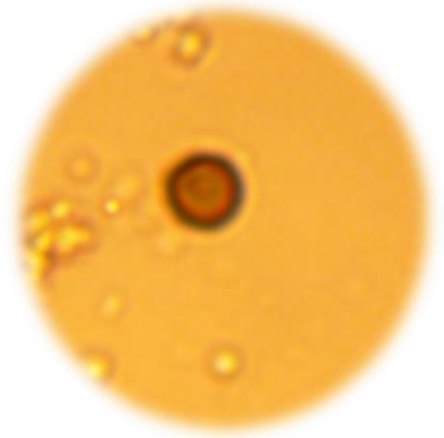
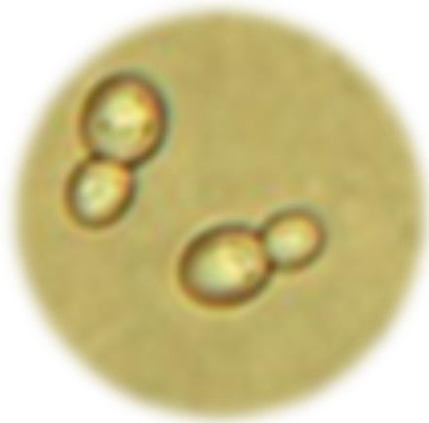
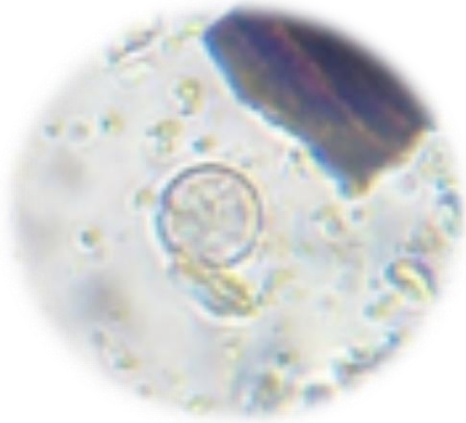
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Tapeworm



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Rabbit Coccidia



Round-and-round we go...which organism is it?

