

Some Photos to Help Identify Soil, Compost & Compost Tea Organisms

Part 2; Nematodes & Rotifers

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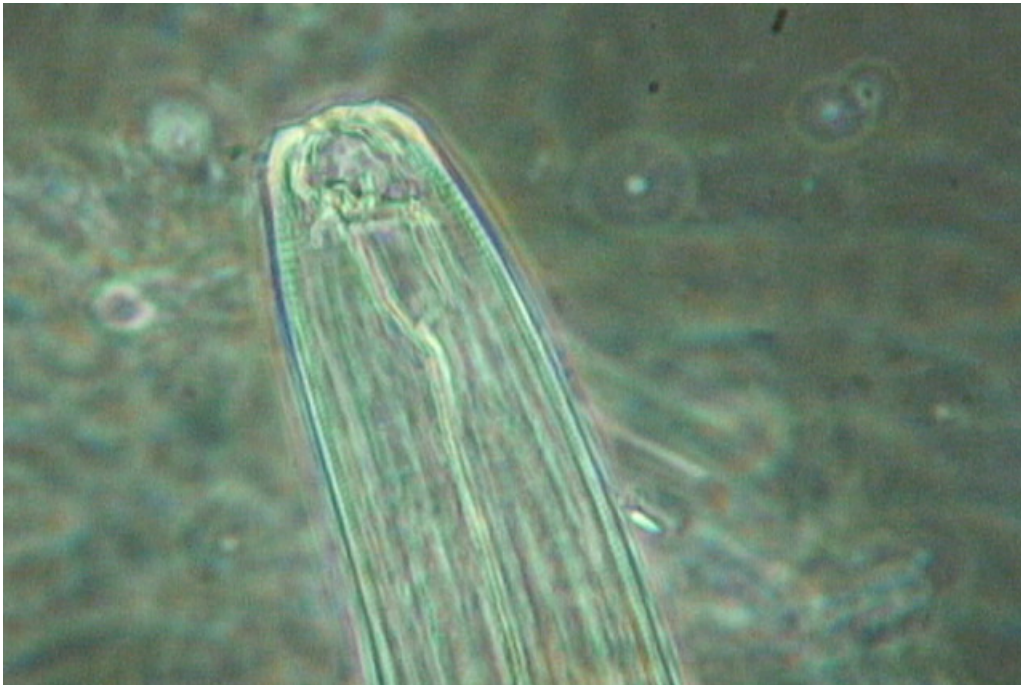
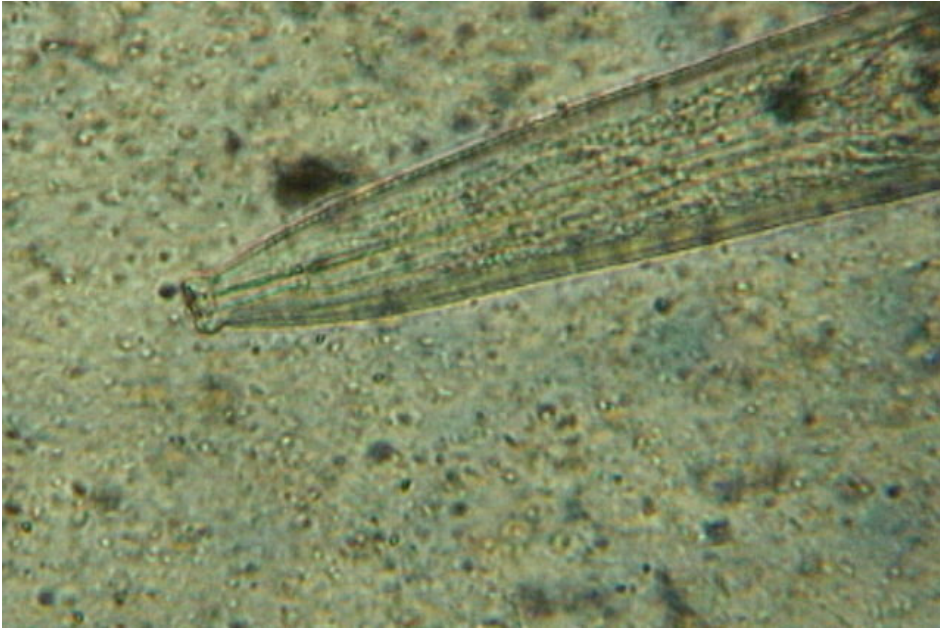
Nematodes;

Although nematodes do not thrive in compost tea for extended periods, you may see some in your compost tea. It is unlikely that you will see them in high numbers in that environment, however a good quality compost or vermicompost/castings should contain them in fairly high numbers and it is the bacterial feeders which you wish to see as displayed here. Like protozoa, when they consume bacteria (or archaea) nutrients are released which are bio-available to the roots of plants. When I examine my vermicompost mixed with water and spread across a microscope slide, I generally see 10 or more bacterial feeding nematodes in a sample. I've increased these numbers by mixing in oat flour 20:1 with the compost and leaving for 10 to 14 days in a moist warm environment (cover with fabric). I suspect the oat flour increases the bacterial numbers and the nematode population increases in response. To distribute these just sprinkle the compost on the soil and water in afterwards with non-chlorinated water.

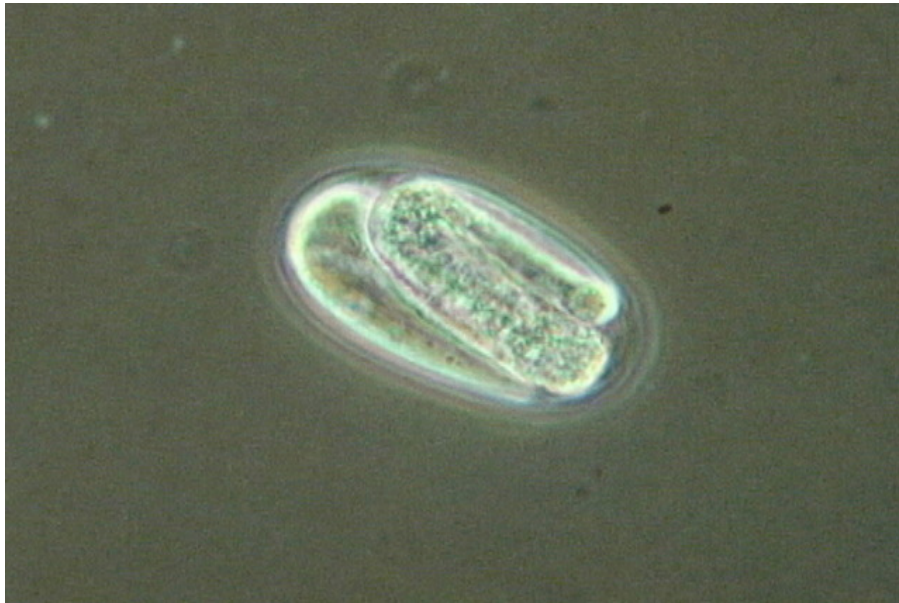


This is a female (note arrow) bacterial feeding nematode. They can be very small or large enough to fill more than one 200X field of view.

Note in the images below, that the shape of the mouth is roundish with lips designed to scoop or suck in large numbers of bacteria (goldfish mouth action). Also in the close up there is no stylus or spear which protrudes as for nematodes which feed on roots or fungi.



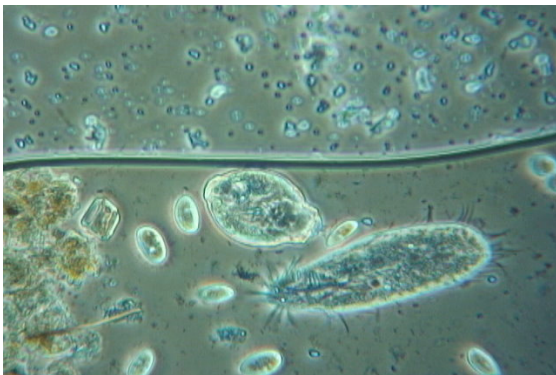
Note that nematodes are multi-celled animals, unlike single-celled protozoa.



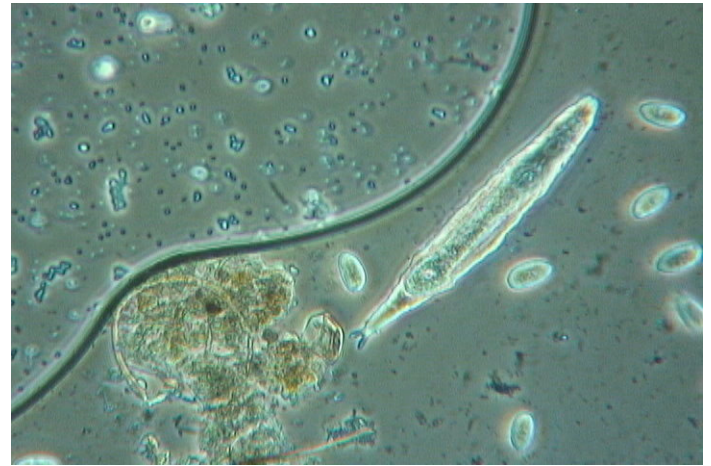
Here is a nematode egg very close to hatching out.

Rotifers:

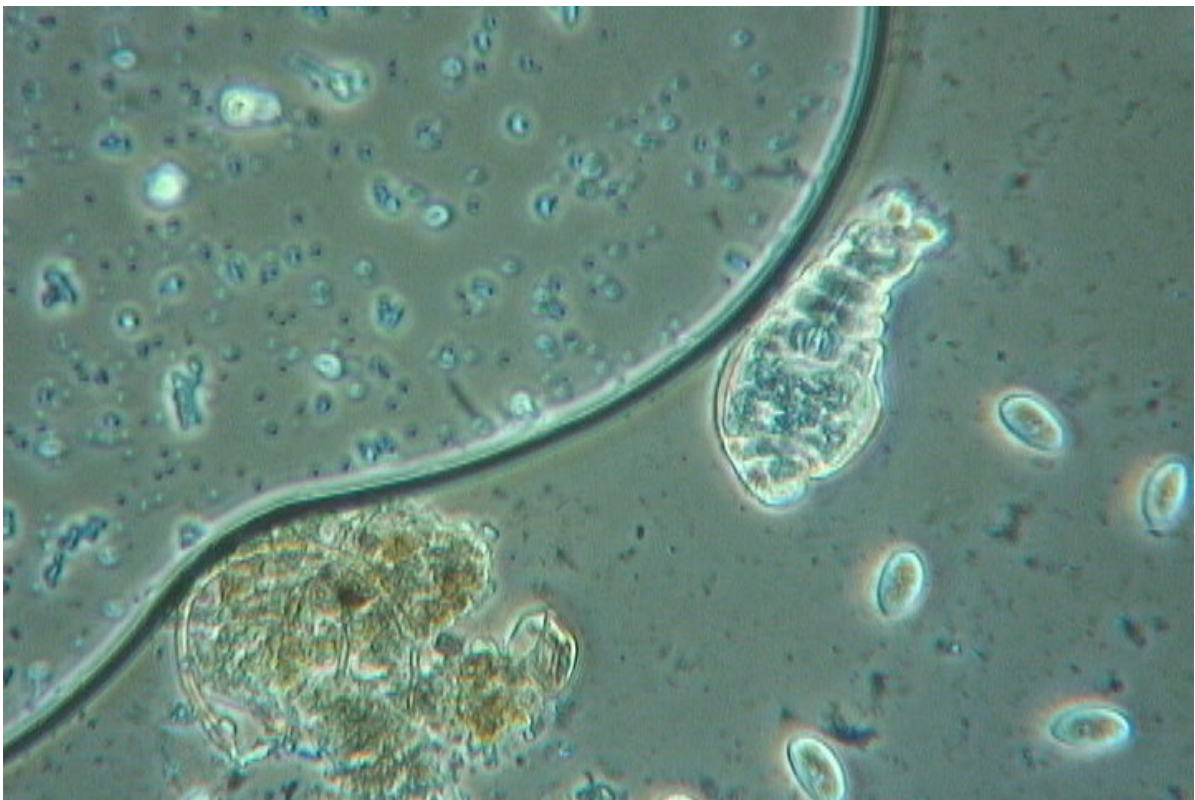
You may find rotifers in your compost, soil and compost tea. They are multi-celled and related to nematodes. They can survive for extended periods in compost tea and they are beneficial, as they consume bacteria and cycle nutrients similar to nematodes. They come in various sizes and shapes and warrant some Internet research if interested. They have rotors in their mouths covered with hairs which turn, thereby scooping (filtering) bacteria to eat. For some curious reason, some have confused them with insect larvae which are generally much larger and distinct in appearance.



In the first photo the rotifer is 'scrunched up' and adjacent to the ciliate (& tiny ciliates) we viewed in part 1. This is a good illustration of size as the ciliate is approximately 70 to 100 microns in length. In the second photo the rotifer is partially stretched out and we can begin to see its foot on the left end which it uses for anchoring and mobility. It anchors with the foot and stretches out accordion-like but also uses the foot to swim in a fashion.



Here the rotifer apparently reacts to the ciliate and here fully stretched out. Note the foot is very visible as well as part of the rotifer's digestive system and it is still surrounded by the tiny ciliates.



Although very difficult to see in a still photo this shows the rotifer with foot tucked in at left end and rotors projected and rotating shoveling (filtering) bacteria into its mouth; top right. Notice the cilia slightly visible on the lower right ciliate. Again; Not all rotifers look exactly like this particular species.