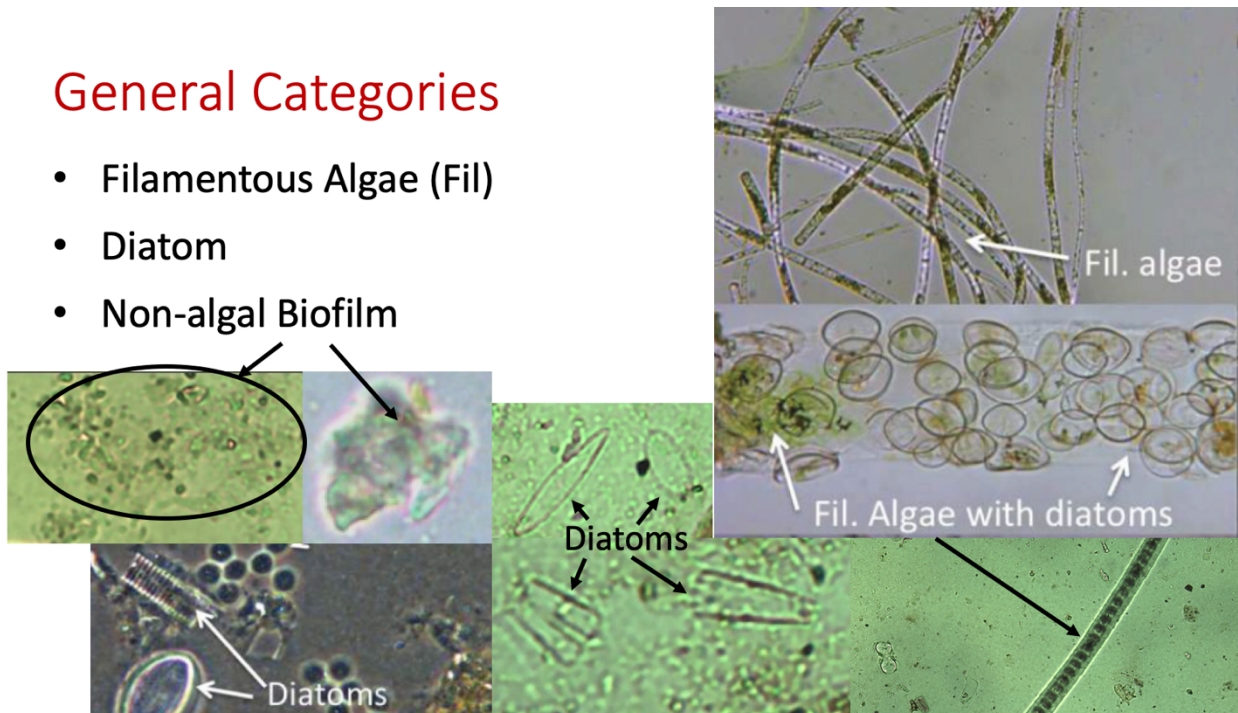


Insect Gut Identification Method

1. **Supplies:** compound microscope, scope camera, software to analyze (I use ImageJ 2: <https://imagej.net/Downloads>)
2. **Take pictures:** 10 pictures (need at least 100 identified pieces in total) at 40x per slide
3. Open ImageJ 2 and open the image you want to work on
4. **Add labels to picture and results table:** Select Analyze > Set Measurements > uncheck everything except for: 'Area', 'display label' and 'add overlay'
5. **Set scale:** Go to Analyze > Set Scale, enter your known pixels per distance
6. **Measure:** Select the freehand area tool on the tool bar, trace an item, press 'y' on your keyboard, enter the name of the label (i.e. classification of diet) followed by the # sign and the item number (e.g. fungal hyphae#1), press 'm' on your keyboard, a results table should automatically appear and populate
7. **Identification tips:**

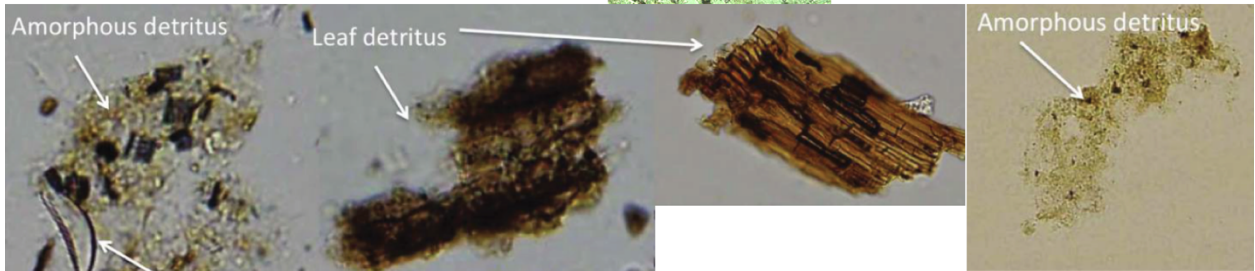
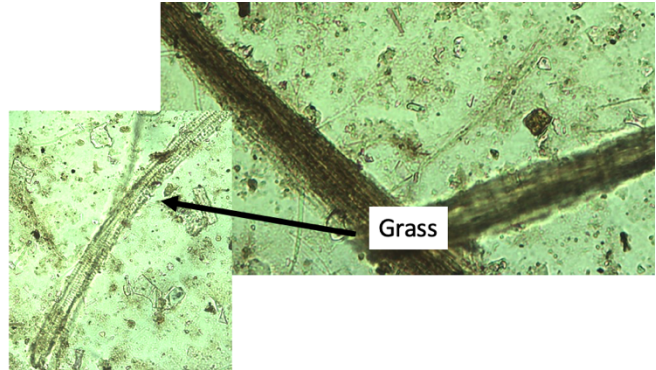
General Categories

- Filamentous Algae (Fil)
- Diatom
- Non-algal Biofilm



General Categories

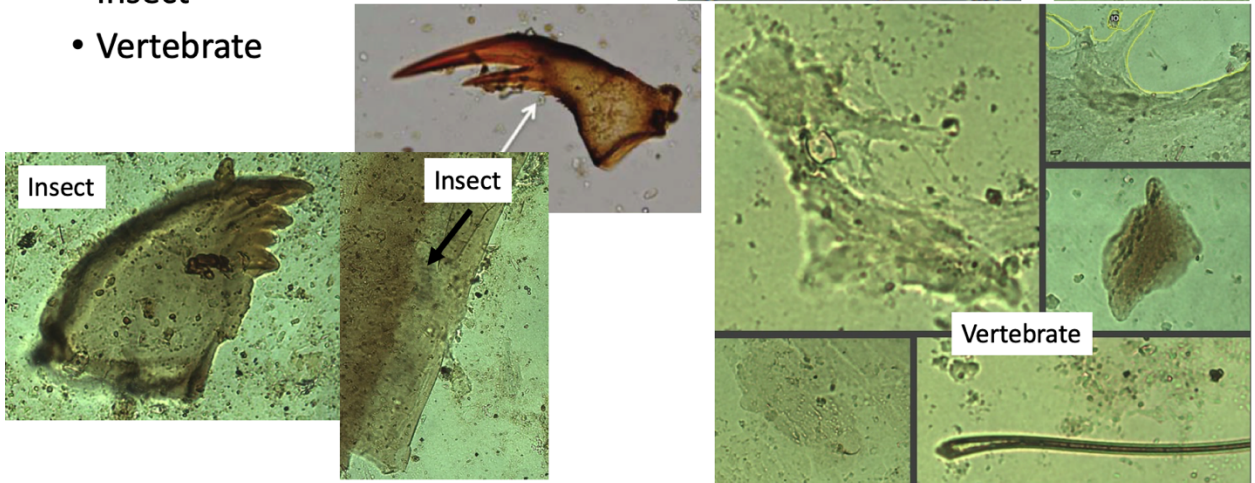
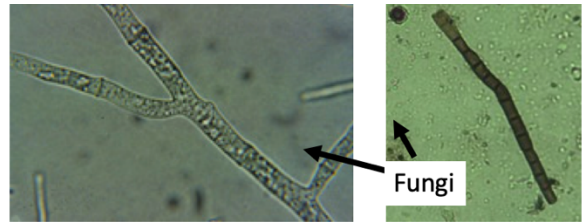
- Amorphous Detritus (AD)
- Leaf detritus (LD)
- Grass



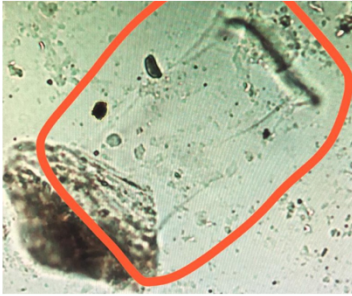
Rosi-Marshall et al. 2016

General Categories

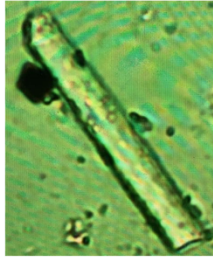
- Fungal hyphae
- Insect
- Vertebrate



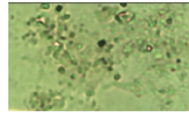
Commonly confused items



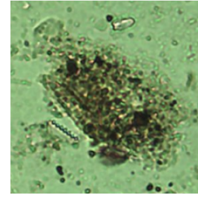
Exuviae
(Invert material)
Lined transparent foil like
Look for dark defined lines



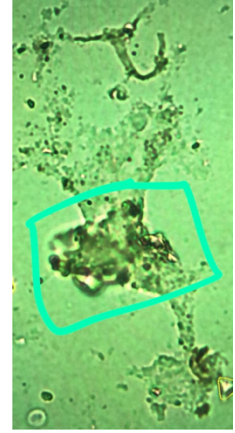
Inorganic (sand)
Translucent,
thick edges, has a
shimmer,
Often cannot see
material behind it



NAB
Translucent, thin
amorphous, not
a defined line,
similar to AD but
no color



AD
Shades of brown,
Amorphous, no
defined lines



Vertebrate material
Amorphous,
translucent, with
lots of repetitive
structures

Other things to watch for

