Document 1: Zombie snail parasites. Taxonomy Overview

To begin, watch a video on the taxon of interest. Here, zombie snail parasites [Zombie Snails | World's Deadliest - YouTube](https://www.youtube.com/watch?v=Go_LIz7kTok)

Part I: Taxonomy- Linnaean Classifications

*Define the following terms:*

Taxon- a grouping of like organisms

Taxonomy- science of naming organisms

Nomenclature- the accepted naming conventions

Epithet- the accepted phrasing in a naming convention

1. OneZoom: In the search all life box: Enter “zombie snail parasite***s***” (not zombie snail parasit***e*** without the plural ending as it yields a more specified search).
2. Once the node (circle) on the tree appears, zoom in until you can see the image. Do not click on the image as it opens a new tab. Instead, at the bottom of the node is the scientific name of the family.

Question: What is the name of this family? Leucochlorodiidae

Question: What is the scientific epithet of the *species* that corresponds to the picture? *Urogonimus macrostomus*

Question: Question: Why is a family represented as a node and the species a leaf in the OneZoom tree of life?

Nodes are higher levels of a taxonomy and represent where branches split into new lineages. Species cannot be split into new lineages and represent the tips of the branches, which are leaves.

1. Now, zoom into the family and notice there are additional nodes that lead to the leaves. These nodes are at a finer scale hierarchical taxonomy, a genus. (\*Note, when discussing more than one genus, the accepted term is *genera* NOT genuses).

Question: Write the names of the *genera* in this family?

*Urgononimus, Leucochloridium, Dollfusinus, Neoleucochloridium, Urotochus*

1. Wikipedia and associated links. Using the compass, return to the zombie snail parasites node. Click on the scientific name in the node and the corresponding Wikipediapage will open**.**

Question: In Wikipedia, refer to the scientific classification information found below the line drawings. How many genera are in this family? 1.

Question: Refer to your answers in Part 1, C. How many genera are in this family according to OneZoom? 5

Question: What is a reason for the discrepancy between numbers of genera between OneZoom and Wikipedia?

There are multiple answers that can appear here… different websites use different data sources, taxonomy is still not resolved (understood), etc.

1. Higher levels of taxonomy.

Back to OneZoom– Click on the X in the upper right-hand corner of the screen to exit Wikipedia and return to OneZoom.

* + 1. Select the compass icon in the toolbar on the lower left part of the screen. Select the term Flukes above Flatworms.
    2. You will see the image below. Choose the larger node.

A grey curved object with white text

Description automatically generated

*Question:* What is the scientific name of this node and how many species are listed? Trematoda, 8,569

1. Click on the scientific name in the node and the corresponding Wikipediapage will open**.** Under contents, select taxonomy to find the estimated numbers of species in this class.

*Question:* How many species (range) are found in this class?

18,000 to 20,000 species.

Question: What is a reason for the discrepancy between numbers of species in this class between OneZoom and Wikipedia? Same as above… There are multiple answers that can appear here… different websites use different data sources, taxonomy is still not resolved (understood), etc. This is a good discussion point.

Part 2. Taxonomy. Nomenclature**:** *Problems with Common Names and the need for Taxonomy.*

For this section, the tracer tool is used to show the links between and among taxa in the form of a clade.

1. A black and white rectangle with black text

   Description automatically generatedTo begin: in OneZoom, click on the Y next to the search bar.
2. Graphical user interface, text, application, chat or text message

   Description automatically generatedThe advanced tracer tool option is now active and the image to the right should be visible.
3. Graphical user interface, text, application

   Description automatically generatedType zombie snail parasites in the first box and select the **+** in the lower right corner to add another box.
4. Type Flukes (Digenea) in the second box and select the **+** in the lower right corner to add another box.
5. Type Flukes Trematoda into the third box and select the **+** in the lower right corner to add another box.
6. Type Flatworms in the fourth box.

*INSERT A SCREENSHOT OF THE TREE BELOW.*

A screenshot of a computer

Description automatically generated

The different colored lines correspond to each group, notice the hierarchical nature of taxonomy in the form of a cladogram with branching lineages.

Question: Based on this answer, what lineage is the largest? Platyhelminthes (Flatworms).

Question: How many nodes occur between Flatworms and Flukes Digenea (do not include the lineages splitting from Digenea)? 4

Question: Why is the common name ‘Flukes’ problematic when discussing these flatworms? Multiple Trematode lineages are called Flukes.