

# BUG IDENTIFICATION

We can learn to identify benthic macroinvertebrates using a special tool called a dichotomous key. While it may look a little confusing at first, it is actually an easy tool to use! We'll walk you through how to use the key and then give you some examples to try on your own!

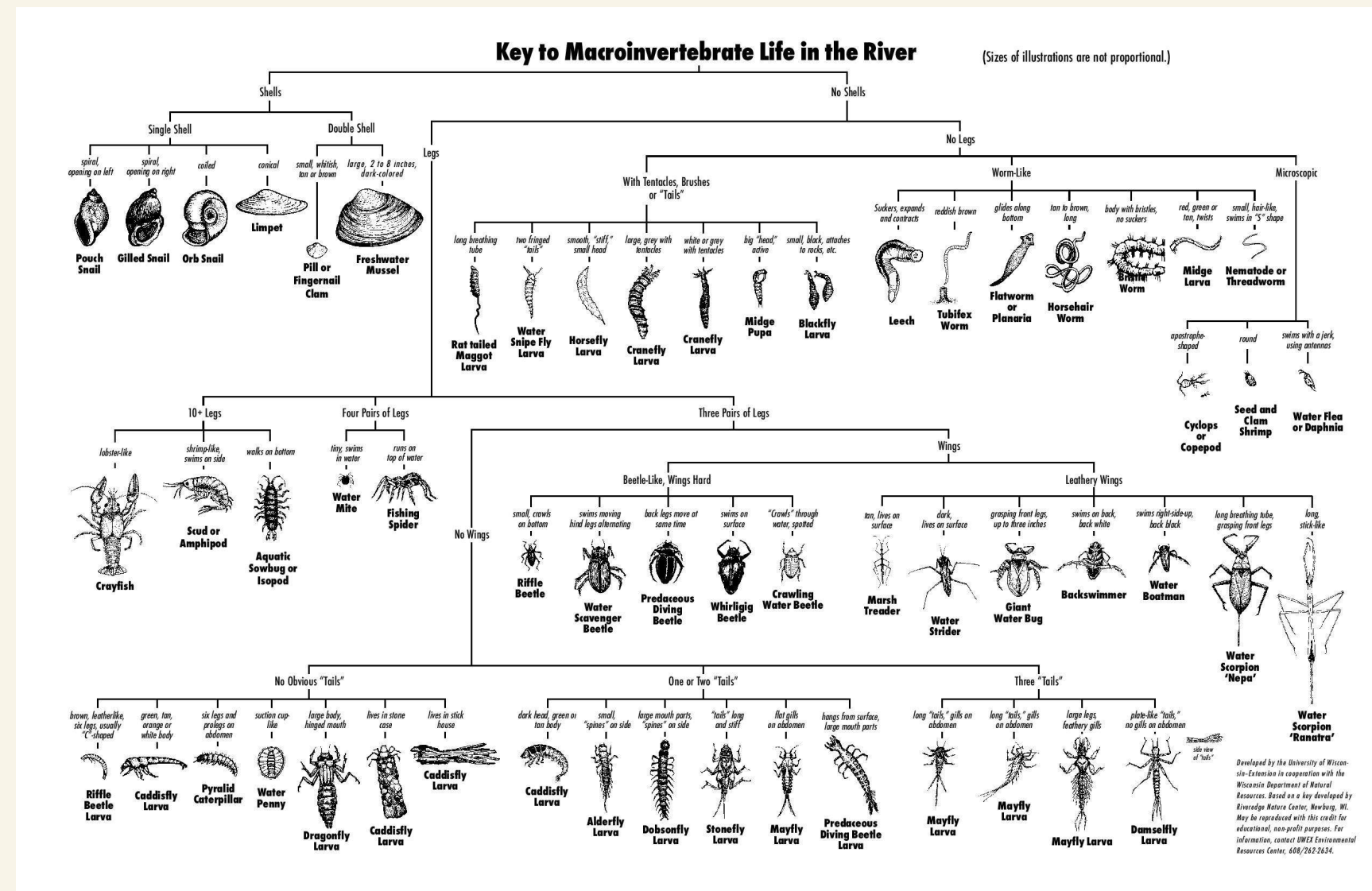


Remember that:

- "Benthic" means they live on the bottom of the lake, river, or stream
- "Macro" means that we can see them with our eyes
- "Invertebrate" means that they do not have a backbone

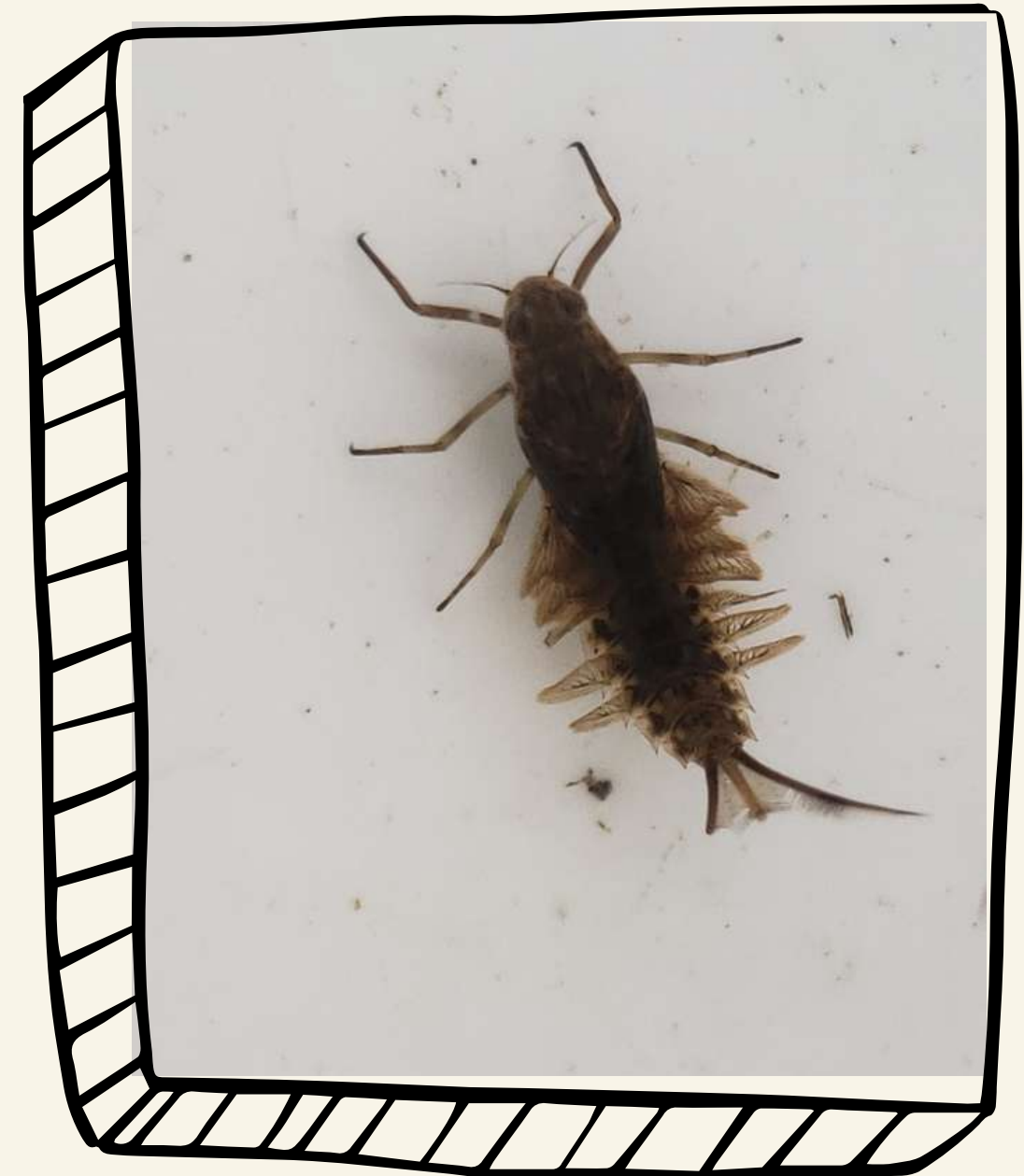
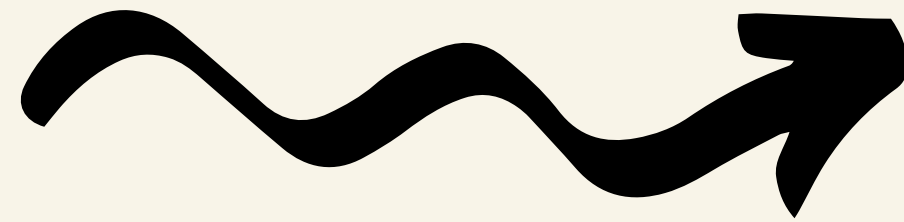
# WHAT IS A DICHOTOMOUS KEY?

A dichotomous key lets you make a series of choices based on characteristics of the creature you are trying to identify. The series of choices you make lead you to a correct identification. There are dichotomous keys for all sorts of things including trees, rocks, mammals, fish, and much more!

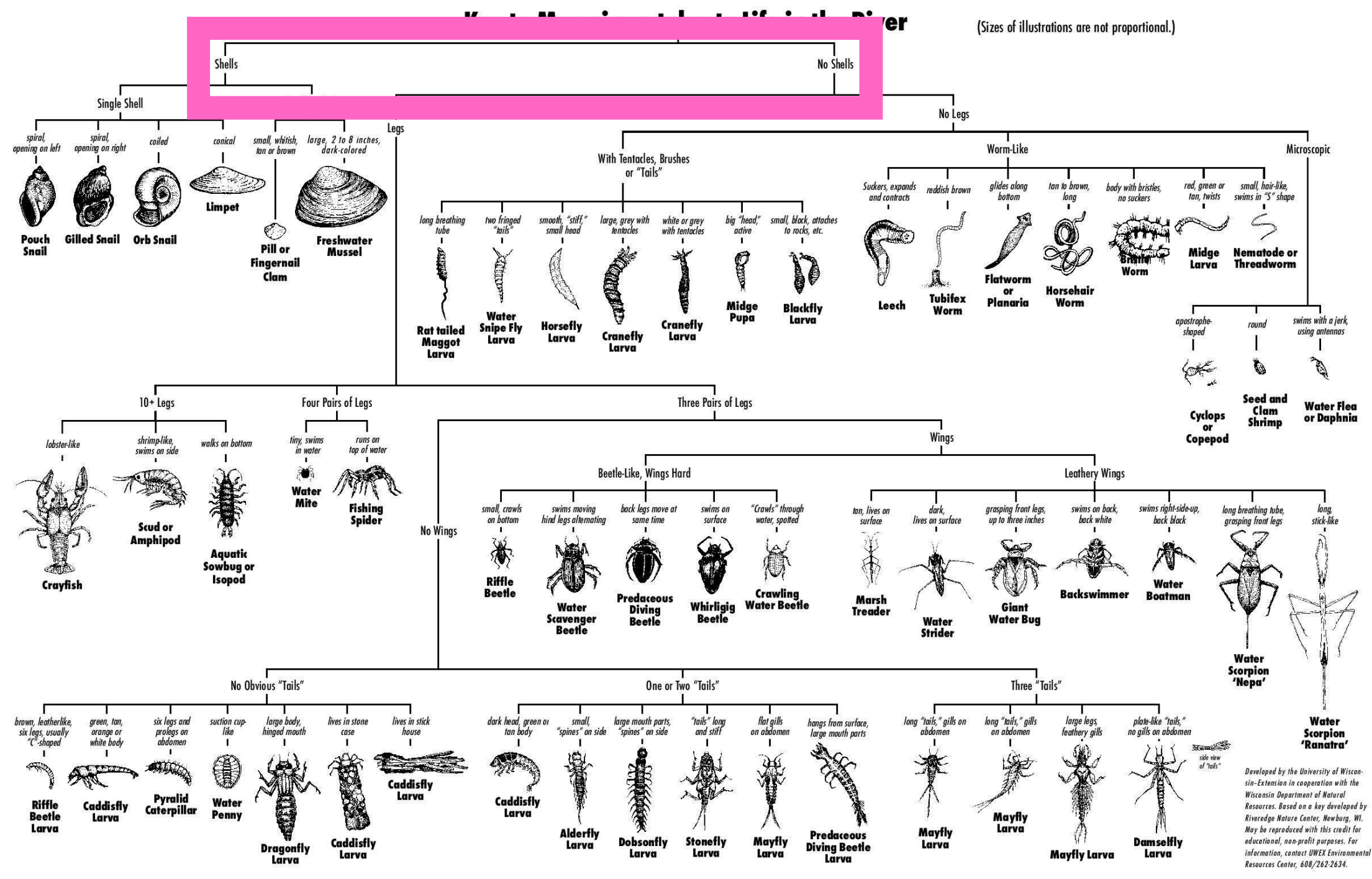


# READY TO PRACTICE?

We'll practice together using this example







To begin, we start with the branch at the very top!

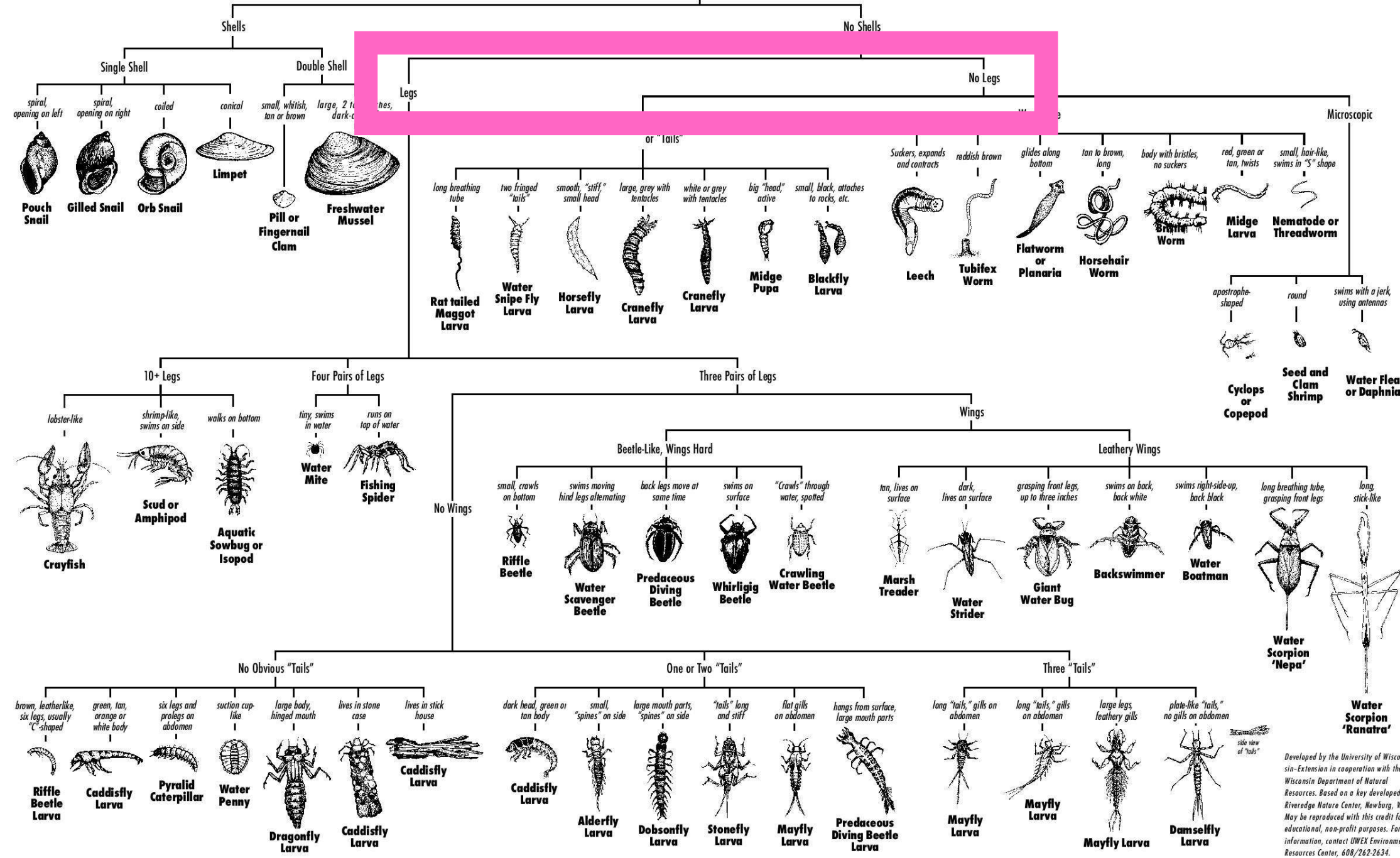
This branch asks if our creature has a SHELL or if it has NO SHELL.



Our bug friend does not have a shell, so we move down the branch on the right.

## Key to Macroinvertebrate Life in the River

(Sizes of illustrations are not proportional.)



Following the NO SHELL branch, our next branch asks about legs.

This branch asks if our creature has LEGS or if it has NO LEGS.



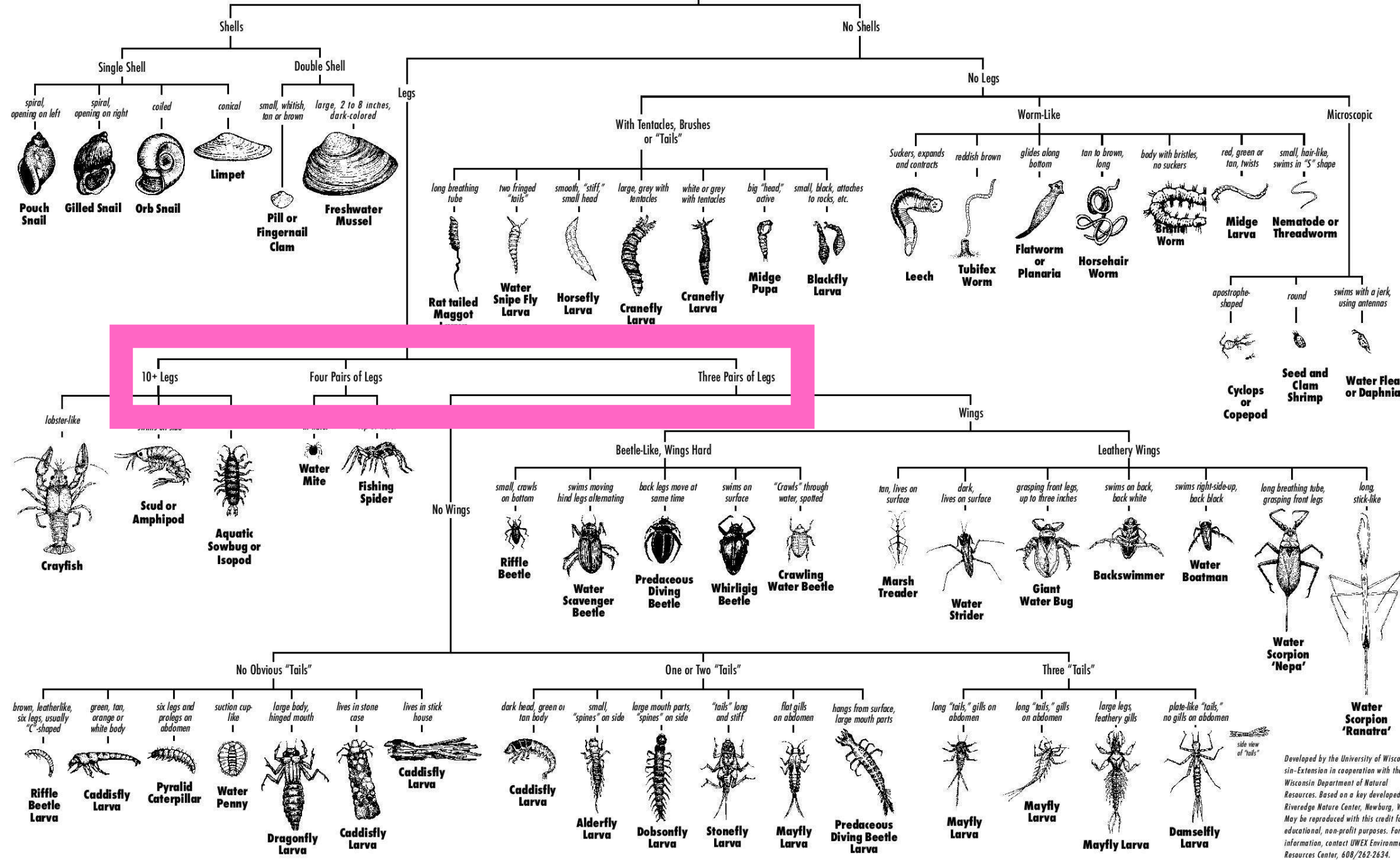
Our bug friend does have legs, so we move down the branch on the left.

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## Key to Macroinvertebrate Life in the River

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Following the LEGS branch, our next branch asks about pairs of legs.

This branch asks if our creature has MORE THAN 10 LEGS, FOUR PAIRS OF LEGS, or THREE PAIRS OF LEGS.



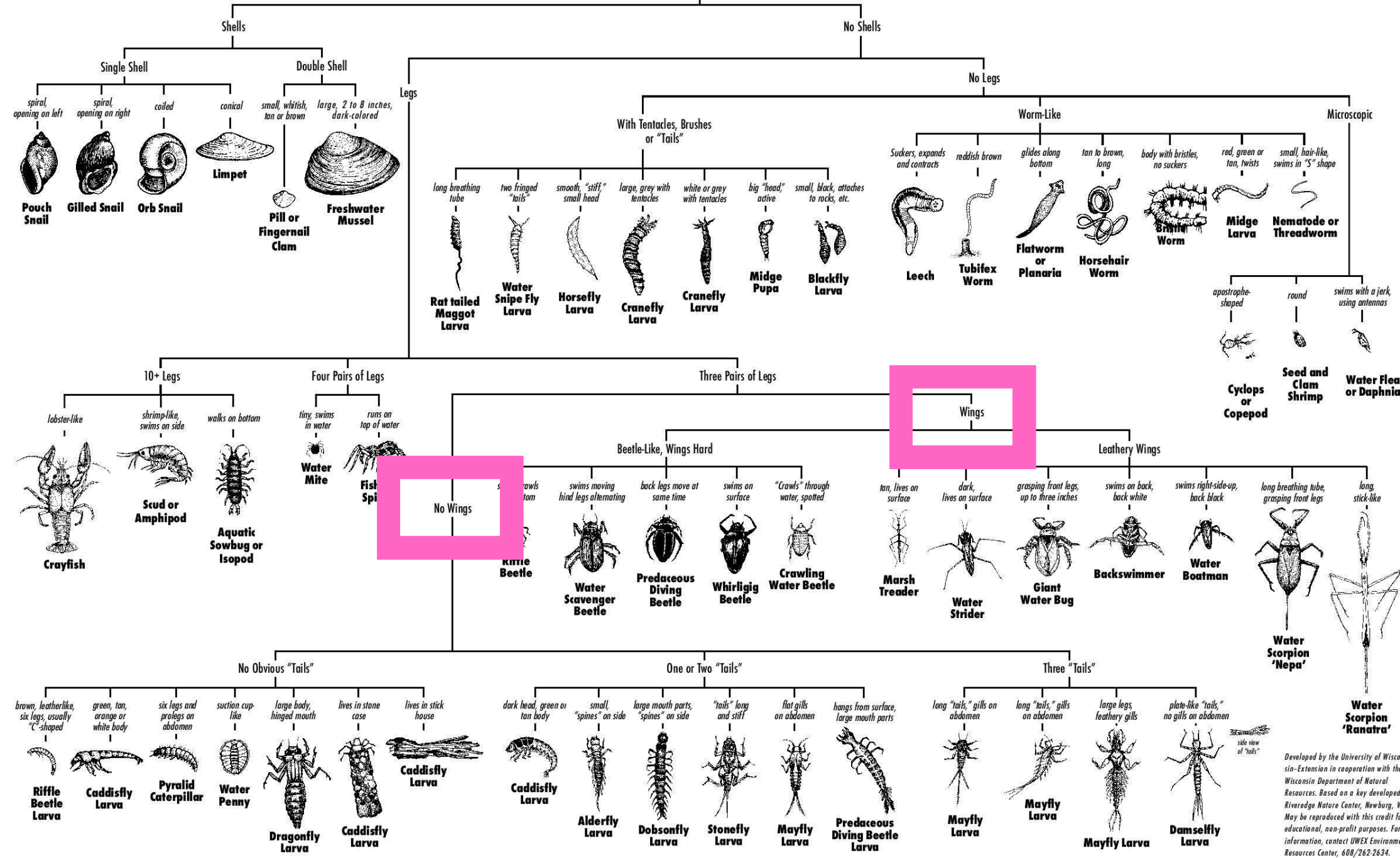
If it helps you out, the pairs of legs are circled on the picture above.

Our bug friend has 6 total legs, which means it has 3 pairs of legs. So we follow the branch on the right.

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Following the 3 PAIRS branch, our next branch asks about wings.

This branch asks if our creature has **WINGS** or **NO WINGS**.



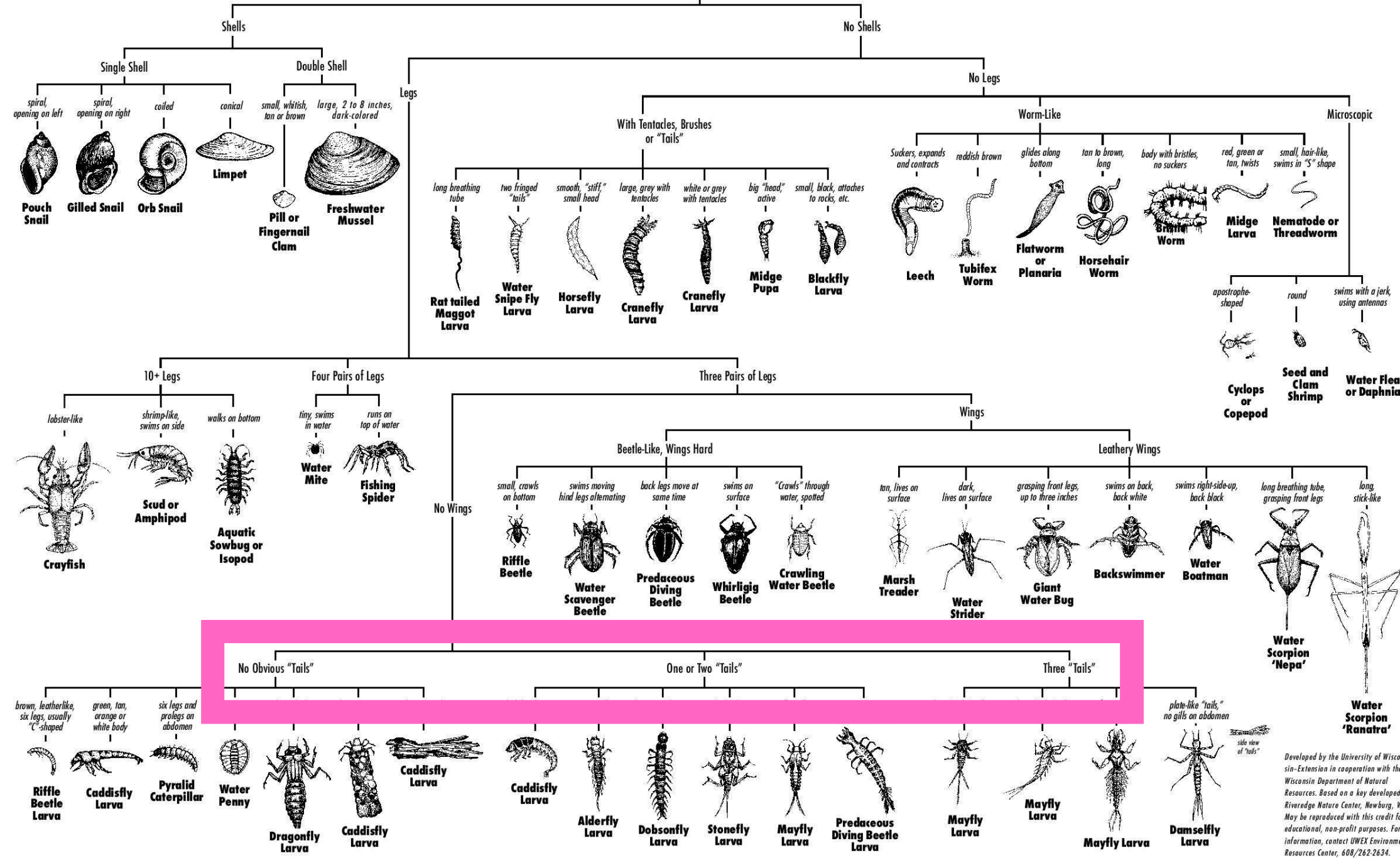
Our bug friend has does not have wings, so we follow the branch on the left.

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## Key to Macroinvertebrate Life in the River

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Following the NO WINGS branch, our next branch asks about tails.

This branch asks if our creature has NO OBVIOUS TAILS, ONE OR TWO TAILS, or THREE TAILS.



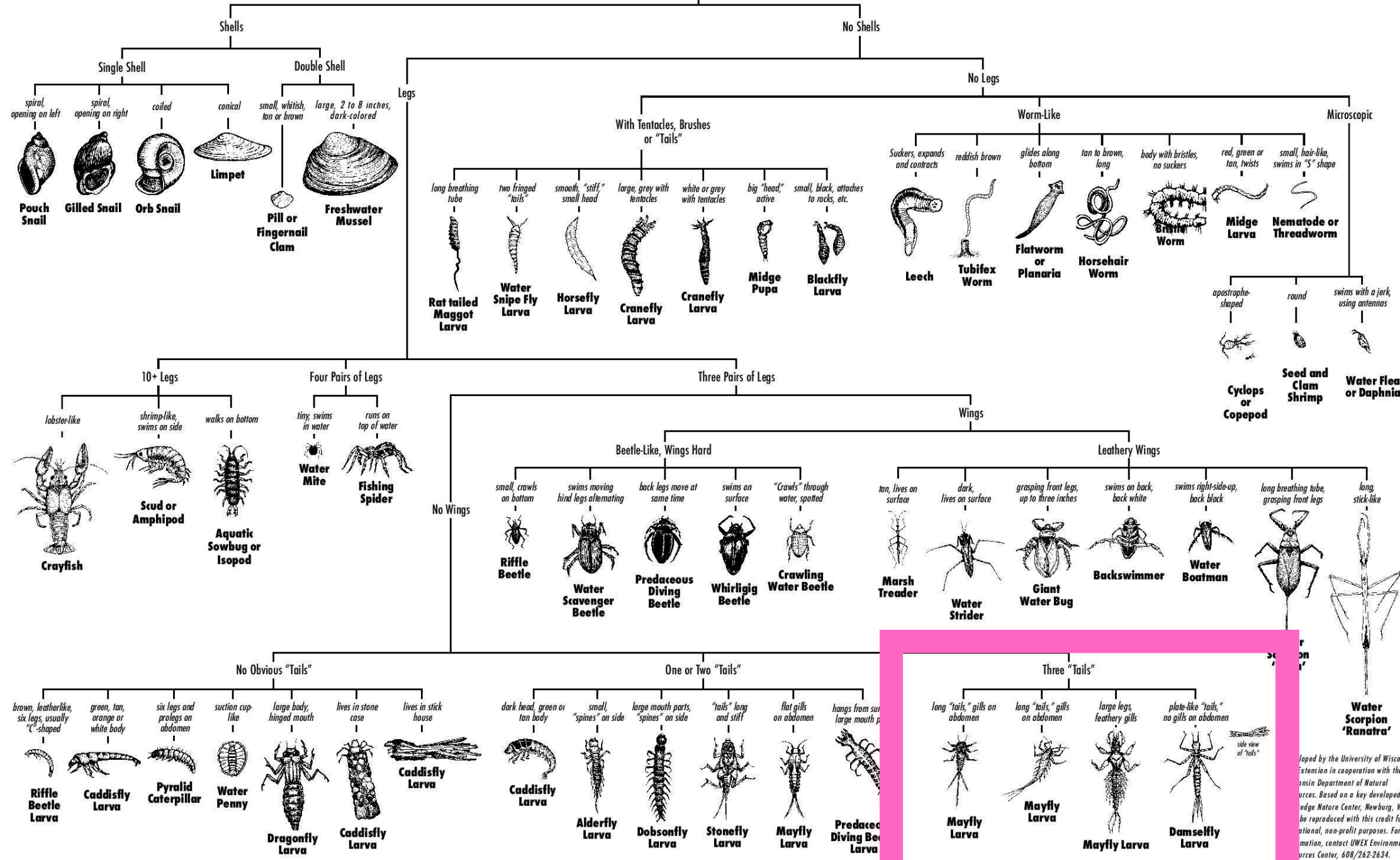
Our bug friend has three tails, so we follow the branch on the right.

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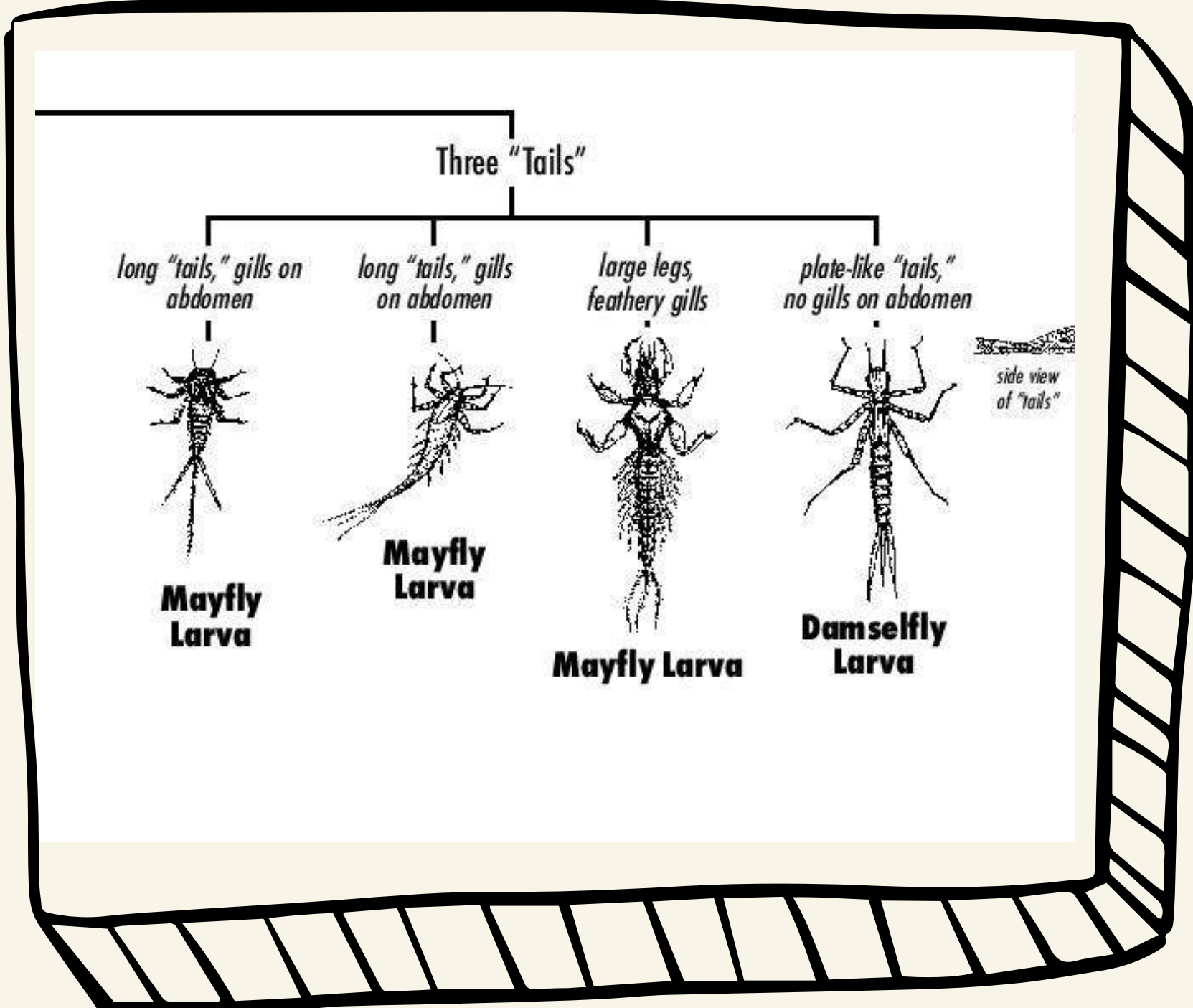
# Key to Macroinvertebrate Life in the River

(Sizes of illustrations are not proportional.)



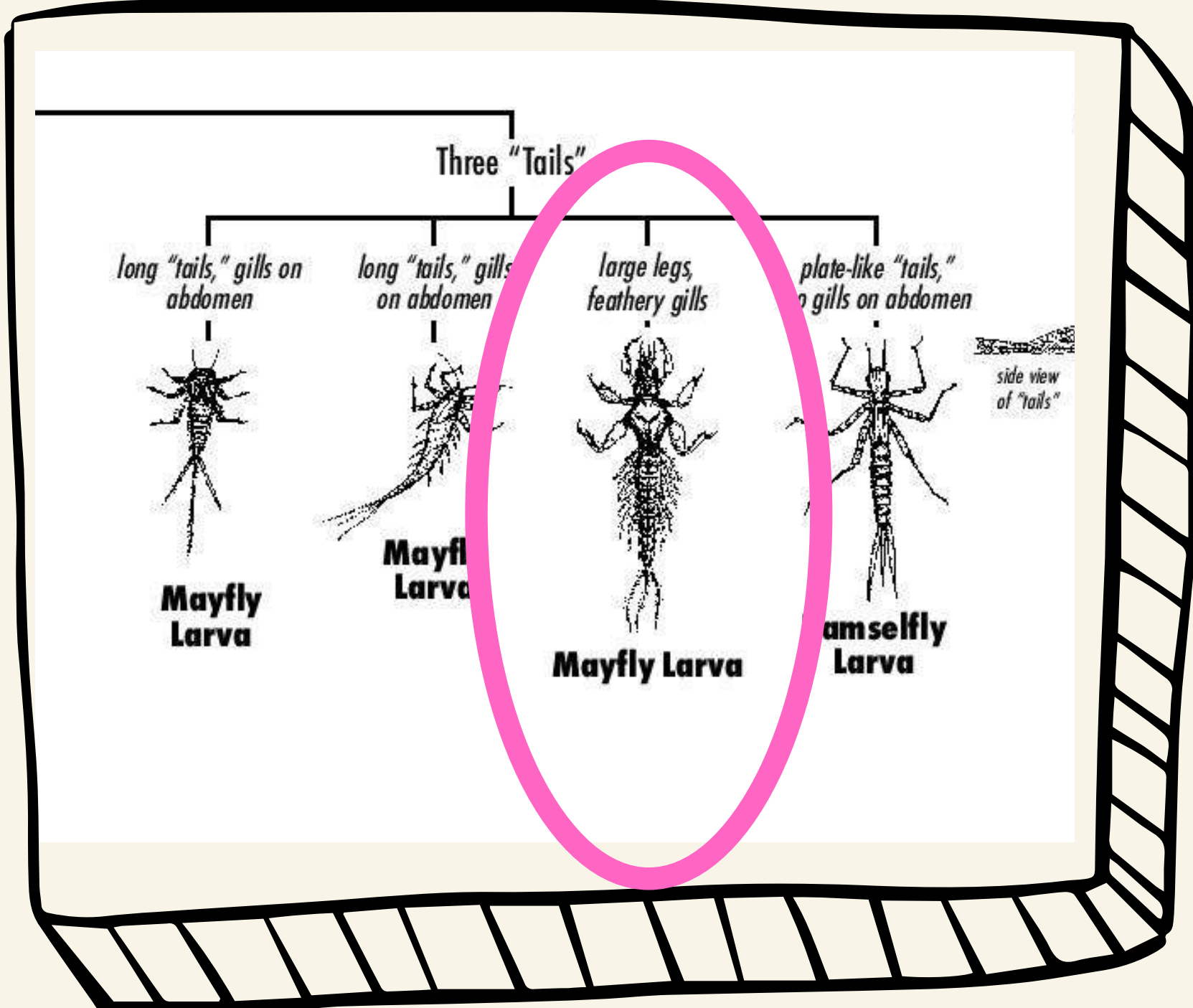
By following the last branch, we know that our creature has to be one of the bugs in the pink box.

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Which one does our bug most closely resemble? The mayfly larva? Or the damselfly larva? The answer is on the next slide!



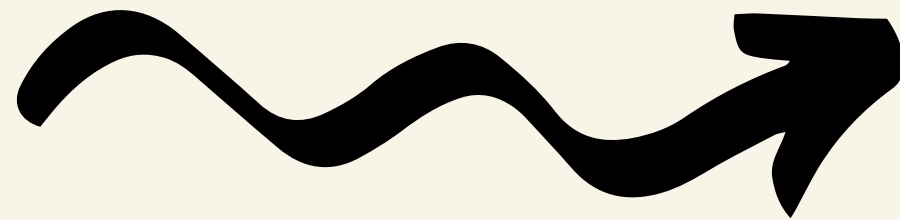


Our bug friend is a mayfly larvae!

Check out those amazing gills on the side of its body!

READY TO TRY ON YOUR OWN?

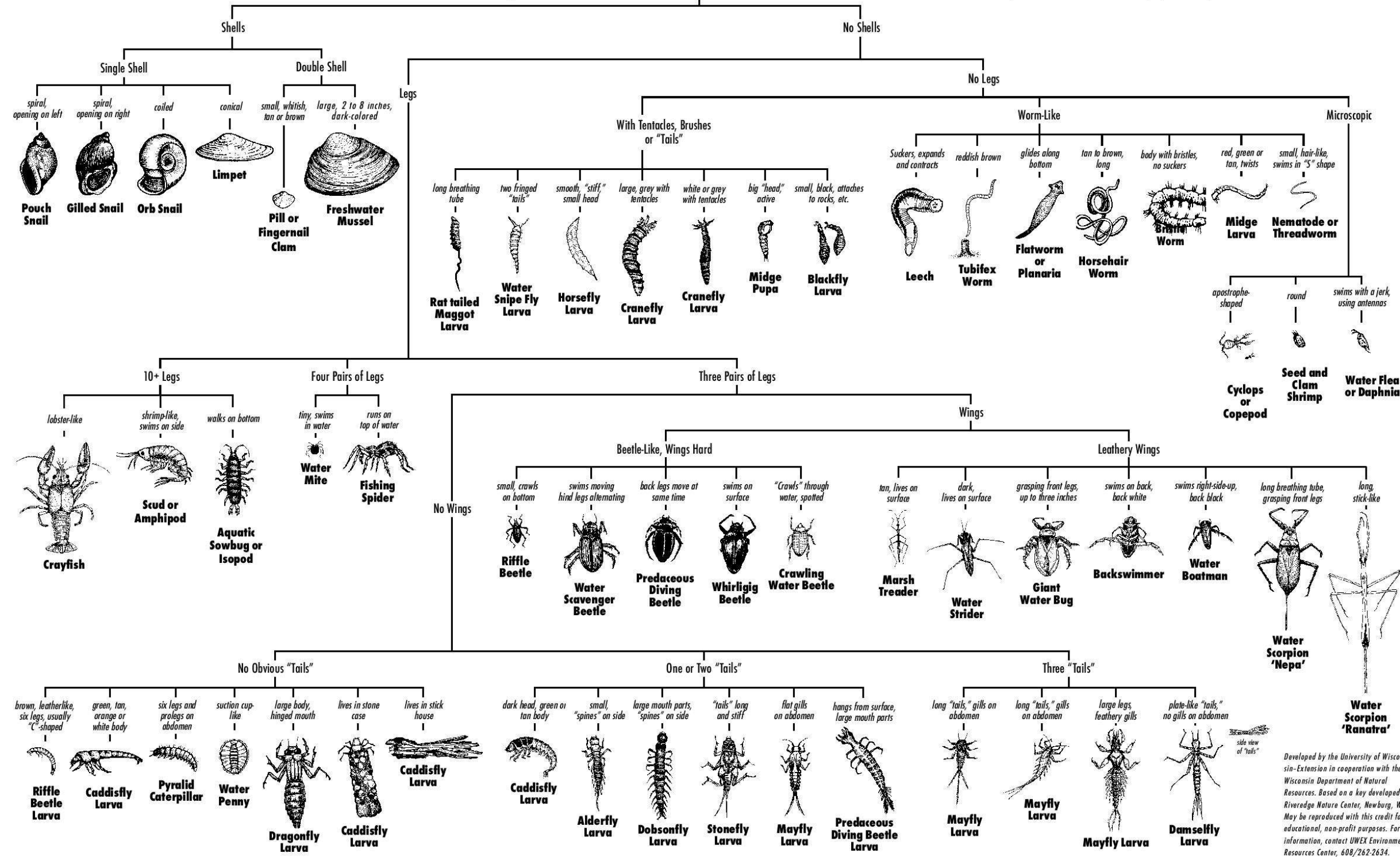
Here's your example:





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Remember to start at the top with SHELL or NO SHELL. Good luck!

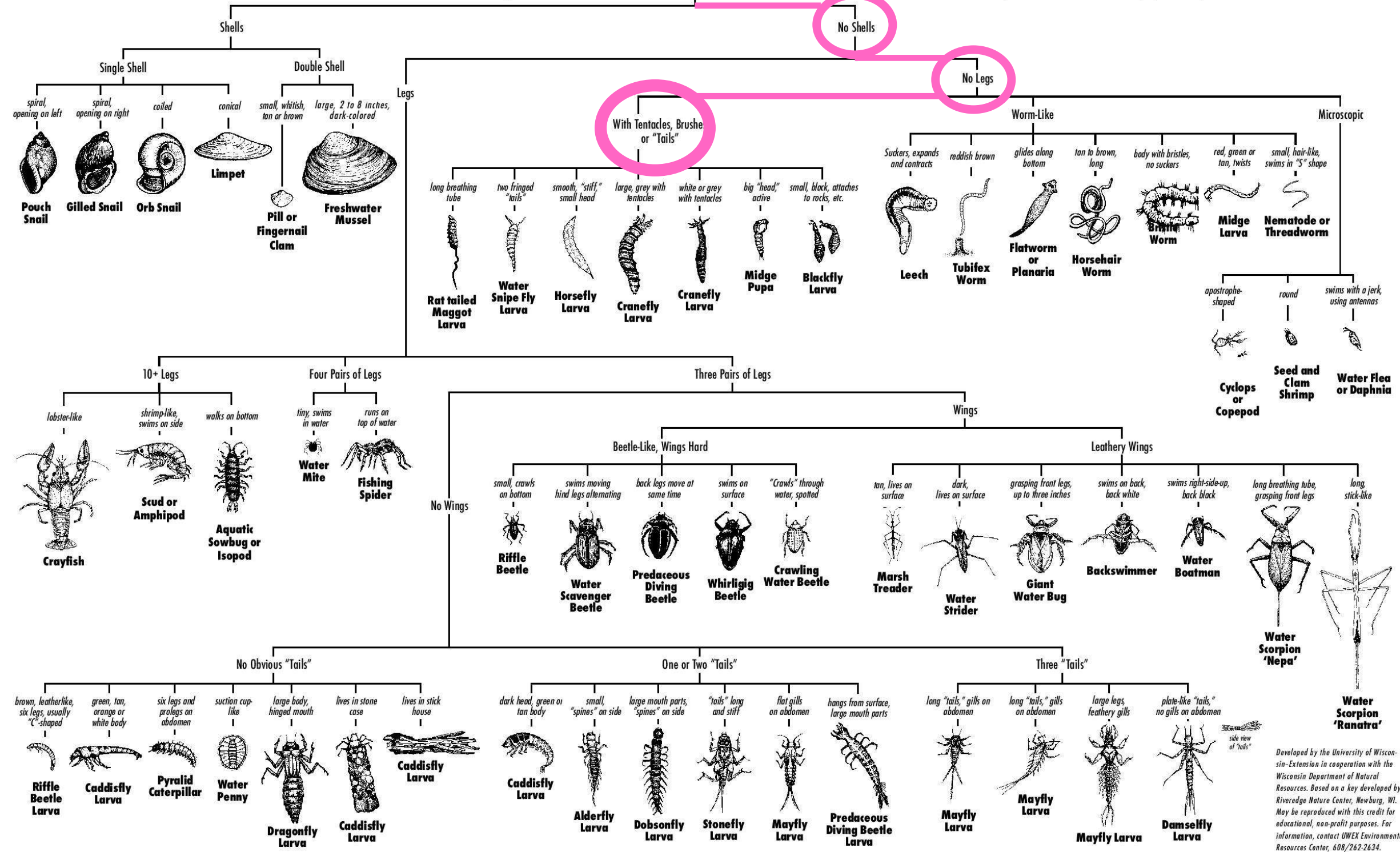


Answers are on the next slide!



# Key to Macroinvertebrate Life in the River

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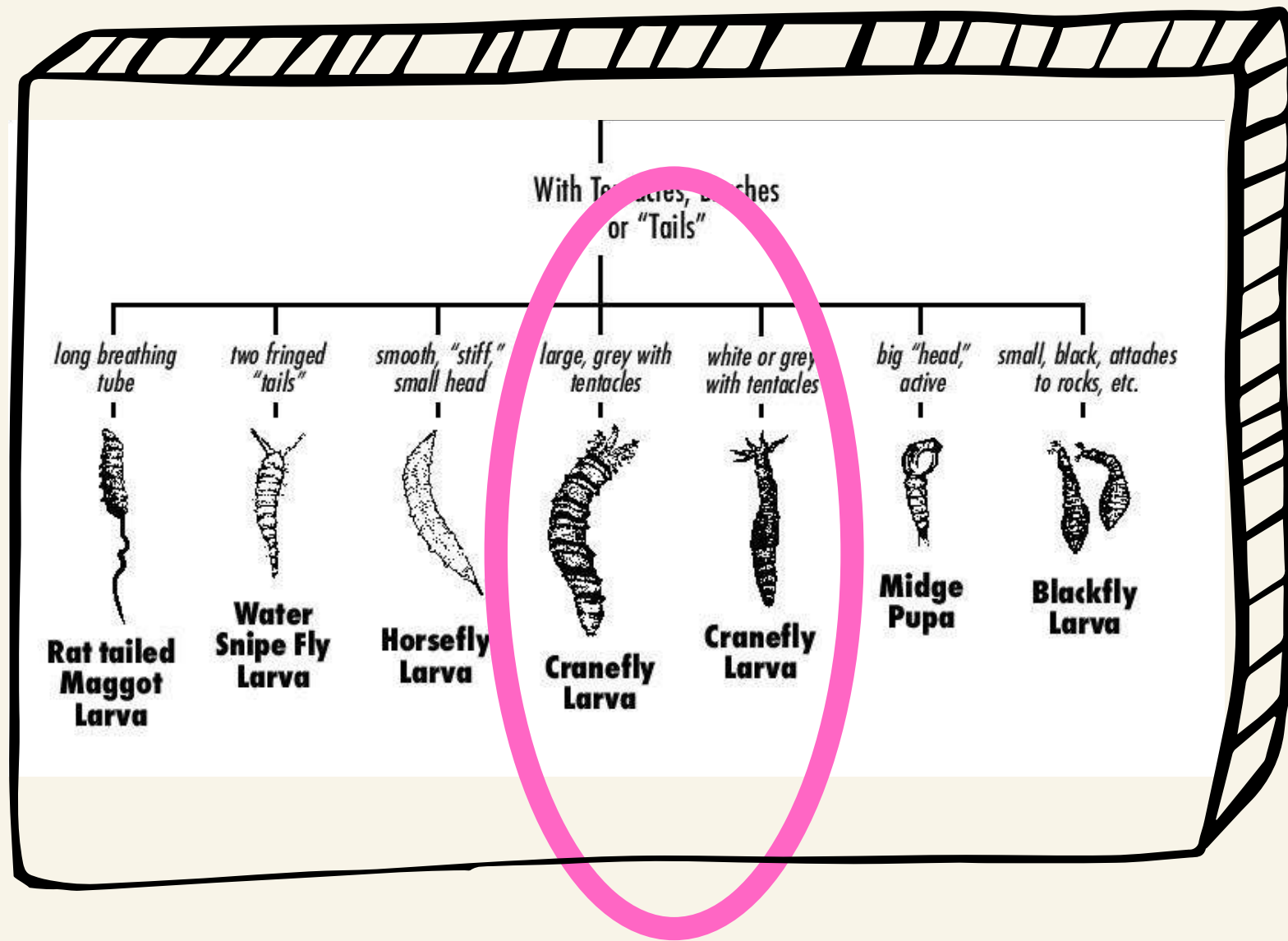
If you think it is a crane-fly larva, you are correct! Let's walk through the steps if you need a hand:

1. SHELL or NO SHELL
  - a. It does not have a shell
2. LEGS or NO LEGS
  - a. It does not have legs
3. WITH TENTACLES, BRUSHES, OR TAILS, WORM-LIKE, OR MICROSCOPIC
  - a. It has what can be described as either tentacles, brushes, or tails.



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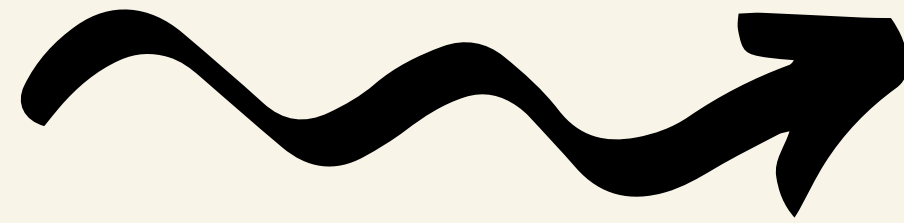




Our bug friend is a crane fly larvae!

Ready to try another?

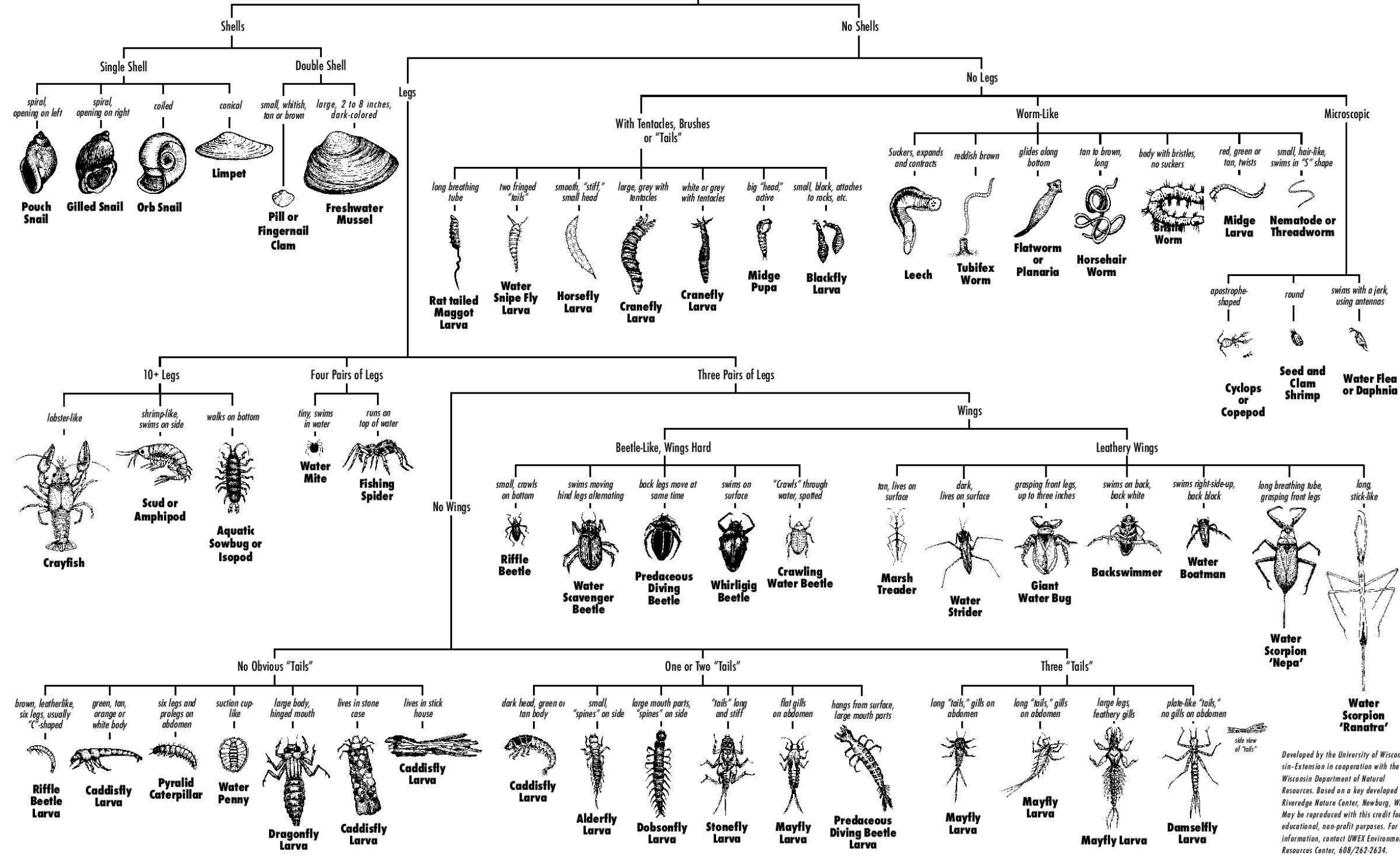
GIVE THIS ONE A GO!





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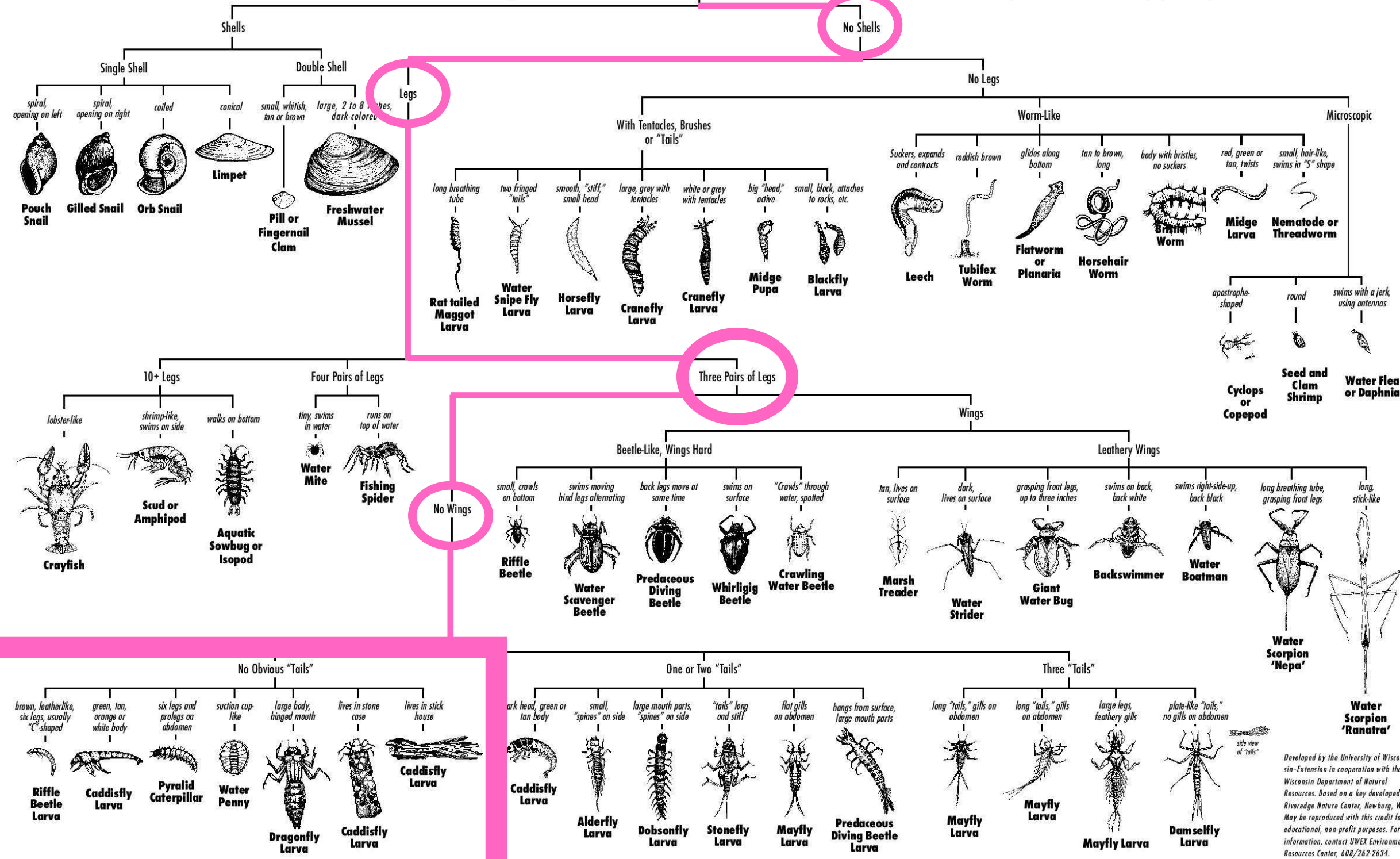


Answers are on the next slide!

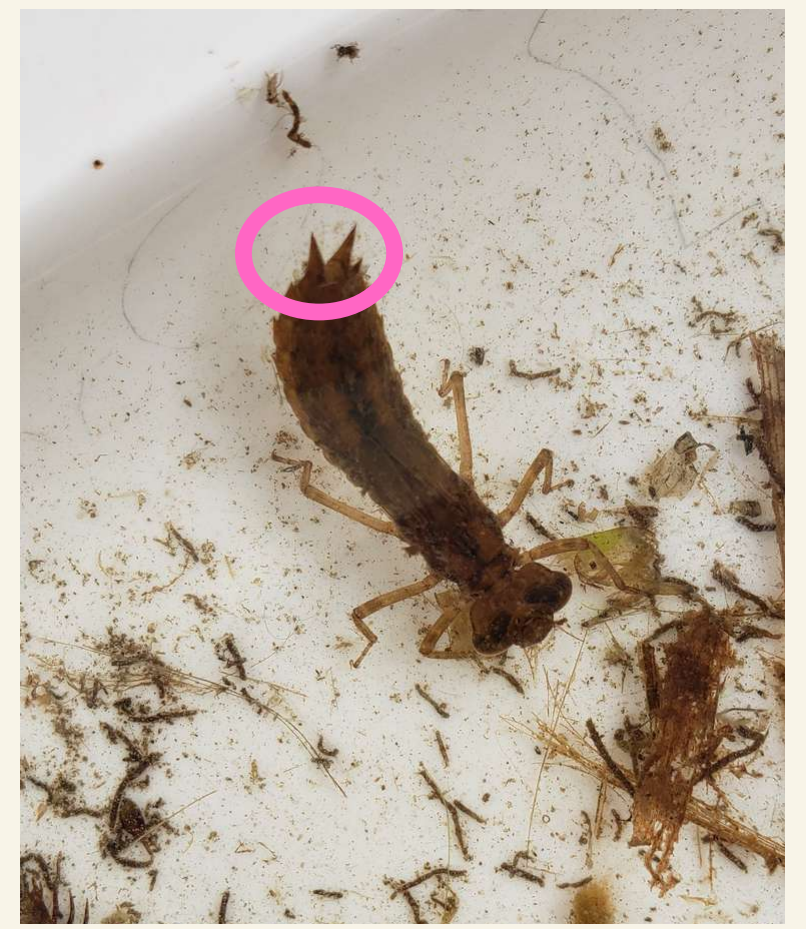


# Key to Macroinvertebrate Life in the River

(Sizes of illustrations are not proportional.)



If your answer is dragonfly larva, you are correct! This one can be a bit tricky because the two projections on its abdomen are not considered true tails!



- Starting from the top, they have:
- No shell
  - Legs
  - Three pairs of legs
  - No wings
  - No obvious tails

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## REFERENCES

University of Wisconsin Extension, Wisconsin Department of Natural Resources, Riveredge Nature Center. *Key to Macroinvertebrate Life in the River* [Digital PDF]. University of Wisconsin Extension. Retrieved from <http://clean-water.uwex.edu/pubs/pdf/riverkey.pdf>