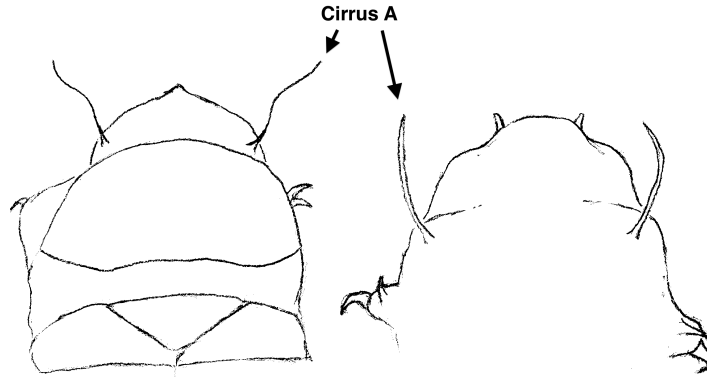


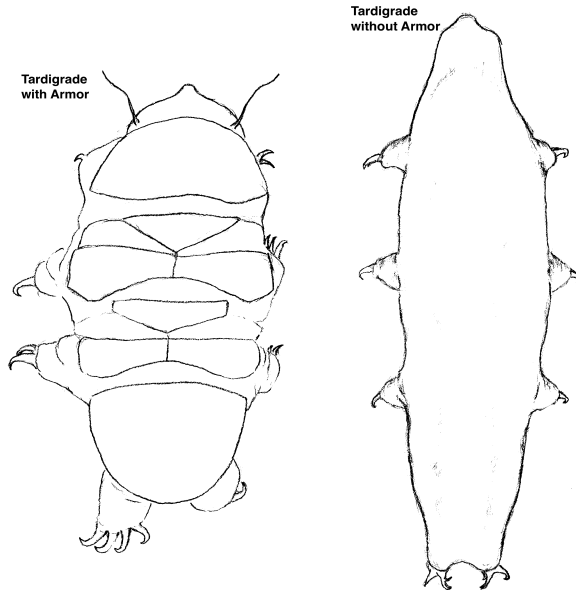
# Key to Limno-Terrestrial Tardigrade Families

Joshua D. Heward

- 1a. Cirri A present..... 2
- 1b. Cirri A absent (armor also absent)..... 4



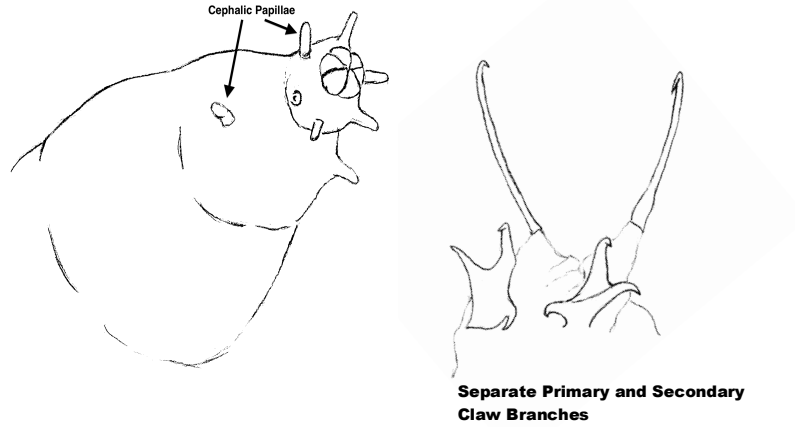
- 2a. Dorsal armor present..... Echiniscidae
- 2b. Dorsal armor absent..... 3



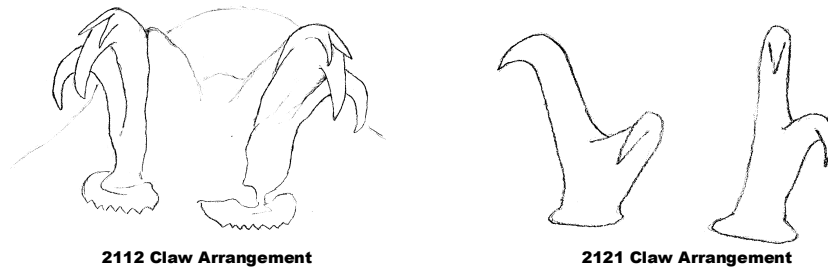
- 3a. Legs with 6 claws, pharynx with placoids..... Thermozydidae\*
- 3b. Legs with 4 or fewer claws..... Oreellidae



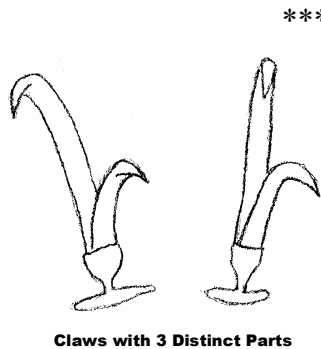
- 4a. Cephalic papillae present, primary and secondary branches of the claws are completely separated..... Milnesiidae
- 4b. Cephalic papillae absent, primary and secondary branches of the claws are at least partially connected..... 5



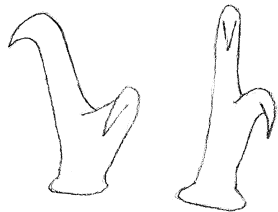
- 5a. Claws on first pair of legs only ..... Necopinatidae
- 5b. Claws on all four pairs of legs ..... 6
- 6a. Claws in a 2112 arrangement..... Macrobiotidae
- 6b. Claws in a 2121 arrangement..... 7



- 7a. Claws composed of 3 distinct parts..... Eohypsibiidae
- 7b. Claws composed of less than 3 parts ..... 8



- 8a. The primary branches of the two claws are approximately equal in size and claw branches are rigidly connected..... Calohypsibiidae  
 8b. The primary branches of the two claws are significantly different in size, claw branches are connected by a hinged joint ..... Hypsibiidae



**Calohypsibiidae**



**Hypsibiidae**

\*If you find a possible member of the family Thermozeodidae please contact Josh Heward  
 \*\*Redrawn from Rahm, 1937  
 \*\*\*Redrawn from Ito, 1988

## References

- Ito, M. 1988. A new species of the genus *Eohypsibius* (Eutardigrada: Eohypsibiidae) from Japan. *Edaphologia*, 39: 11-15.  
 Kinchin, I. 1994. *The Biology of Tardigrades*. Portland press, London, pp. 186.  
 Miller, W.R. 1997. Tardigrades: Bears of the Moss. *The Kansas School Naturalist*, Vol43(3), pp. 1-16.  
 Rahm, G. 1937. A new order of tardigrades from the hot springs of Japan. *Annotationes Zoologicae Japonenses*, 16: 345-352.  
 Ramazzotti, G. & Maucci, W. 1983. *Il Phylum Tardigrada* (third edition). *Memorie dell'Istituto Italiano di Idrobiologia*, 41: 1-1012.

Name \_\_\_\_\_  
Date \_\_\_\_\_

### Identifying Tardigrades

Purpose: Capture and identify a tardigrade.

Instructions:

- Choose a hydrated sample of moss or lichen.
- Use a disposable plastic transfer pipet and draw up liquid all around the bottom of the plastic cup. Transfer the liquid to a small petri dish.
- Set the stereomicroscope at 20x and use a light source that is located above the sample. Slowly move the dish back and forth under the microscope to locate tardigrades.
- Capture tardigrades with an Irwin loop by gently flicking the tardigrade up to the surface of the water with the loop. When the tardigrade is at the surface bring the loop out of the water from directly below the tardigrade. The tardigrade will get trapped in the film of water suspended across the loop.
- Transfer the tardigrade to a drop of water or a drop of mounting media placed in the center of a microscope slide. Add a coverslip.
- Observe the mounted tardigrade with a compound microscope.
- Use the dichotomous key to identify the family the tardigrade belongs to.
- Answer the questions below.

1. Which moss or lichen sample did you find your tardigrade in?

2. What tardigrade family does your animal belong to?

3. List the characteristics of your tardigrade that helped you identify its family. There may not be less than eight.

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_
- 7) \_\_\_\_\_
- 8) \_\_\_\_\_

4. Were there any other animals present in the sample?