

Big Spring Branch (WBIC 1212900)
New Zealand Mudsnail
Potamopyrgus antipodarum (Gray, 1853)
Specimen Verification

presentation by

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4 November 2025

Wisconsin Department of Natural Resources Water Quality Biologist Kimberly Kuber contacted the Aquatic Biomonitoring Laboratory located at the University of Wisconsin – Stevens Point asking for verification of snail specimens collected at an outreach event held 20 October 2025 on Big Spring Branch (WBIC 1212900) in Iowa County. Kuber suspected the snails were New Zealand mudsnails and shipped eight specimens to the Aquatic Biomonitoring Laboratory for identification.

Collection details for these snails –

WI, Iowa County

Big Spring Branch

landmark not provided

Lat./Long. not provided

2025-X-20 K. Kuber, WDNR



Big Spring Branch snail collection shipped to the Aquatic Biomonitoring Laboratory. This image depicted all shipped specimens.

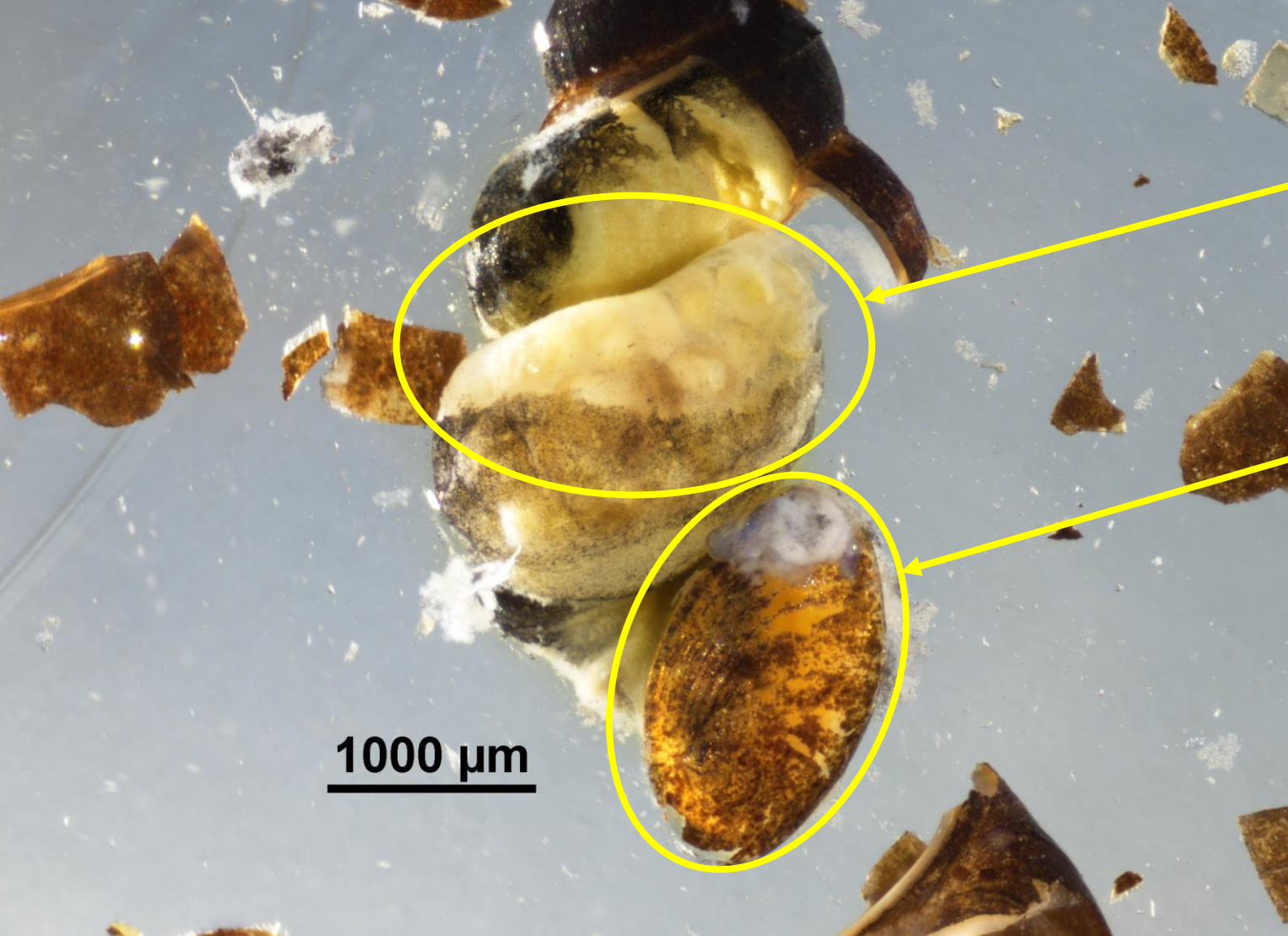
Future slides will focus on this specimen.

All specimens presented size, whorl count, overall shell shape, and dextral (right-hand) coiling consistent with New Zealand mudsnails. The larger specimens presented the slight outturning/thickening of the aperture (shell opening) margin suggestive of New Zealand mudsnails. Definitive physical characters to attain final taxonomy would present inside the shell. The shell needed to be cracked and removed from the specimen to access the pallial oviduct and operculum.



Initial specimen crack. Specimen was relatively easy to crack.

The shell fragments needed to be removed to expose the snail's body mass.



1000 μm

Body mass exposed. The pallial oviduct, visible in part as the whitish area within the oval, needed to be disrupted and examined for developing embryos. The white spherical shapes under the outer layers of the oviduct were strongly suggestive of developing embryos.

The operculum needed to be removed and cleaned to allow viewing of its structure. The encrusted brown debris, embedded in the surface structure of the operculum, indicated the paucispiral structure of the operculum.

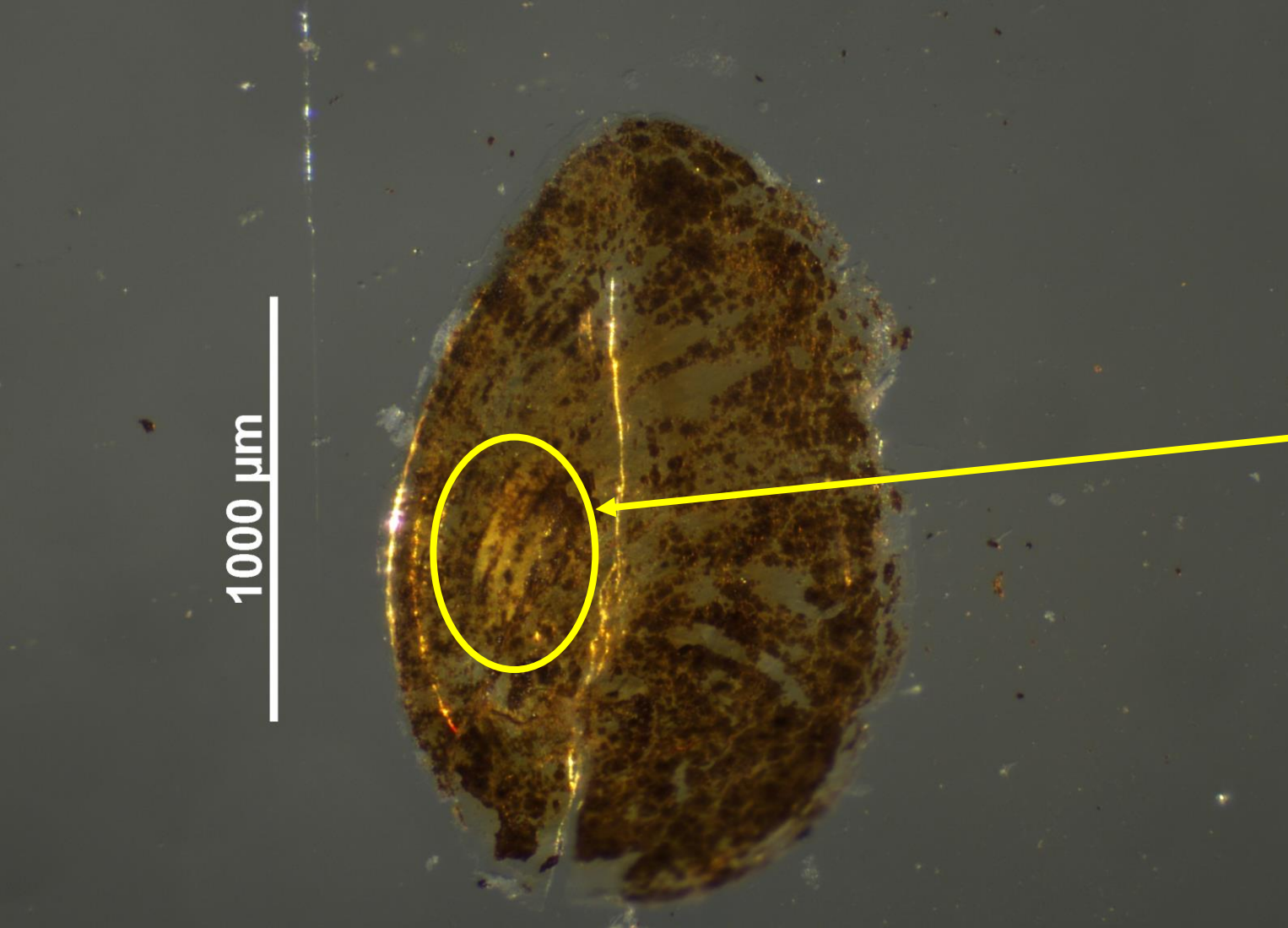


The outer layers of pallial oviduct were disrupted, and numerous embryos spilled out. The embryos displayed as lustrous ivory objects within the yellow oval. Some embryos displayed spiral snail shell structure depending on their orientation. Additional embryos were obscured by the outer layers of the pallial oviduct to the left of the oval. Presence of developing embryos in the pallial oviduct was the historic definitive character used to attain *Potamopyrgus antipodarum*.



Depending on their orientation, some embryos displayed tiny black eyespots and others displayed spiral shell structure.

Note the size of the embryos. They would be able to pass a #30 (0.5 mm) mesh.



Operculum, partially cleaned. Thorp and Rogers (2016) used paucispiral operculum with white calcareous smear as the final physical characteristic to determine *Potamopyrgus antipodarum*. Paucispiral means spiral structure “fanning out” away from a central nucleus. Spiral structure displayed in clockwise fashion.

White calcareous smear displayed within the yellow oval.

Operculum was firmly held to body mass and cracked during removal. The bright white line passing vertically through the operculum was the crack. Attempts to clean the encrusted debris would have further damaged the operculum; subsequently, the operculum was not cleaned. Still, the operculum’s paucispiral structure and white calcareous smear were sufficiently displayed to determine *Potamopyrgus antipodarum*.

Jeffrey Dimick, manager of the Aquatic Biomonitoring Laboratory housed at the University of Wisconsin–Stevens Point, attests that eight snail specimens collected 20 October 2025 from Big Spring Branch (WBIC 1212900), Iowa County and shipped to the Aquatic Biomonitoring Laboratory by Kim Kuber were New Zealand mudsnails *Potamopyrgus antipodarum* (Gray, 1853). Specimens were retained in the Aquatic Biomonitoring Laboratory.