



Whitespotted Pine Sawyers at Twin Lakes

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Abstract

White Spotted Pine Sawyer larvae develop in weakened or dead conifers and the adults feed on diseased or damaged pine trees. We wondered if this species would be an indicator of environmental issues. We collected specimens at Twin Lakes Preserve. Once we collected our samples, we processed them according to the Cold Spring Harbor Laboratory protocol.

Introduction

One of the main indicators of potentially harmful environmental issues is the presence of dying trees. We aimed to develop a way to see if further testing of an environment is necessary. We determined that if an increase in the population of the White Spotted Pine Sawyer was observed, then there must be an increase in the amount of damaged and diseased conifers in the area. Many different factors cause trees to become diseased that would also negatively impact human health such as polluted air, water, or soil.

Materials & Methods

To collect the specimens, isolate the DNA, amplifying DNA by PCR, analyzing PCR products by gel electrophoresis, and sequencing PCR products we followed Cold Spring Harbor Laboratories protocols.

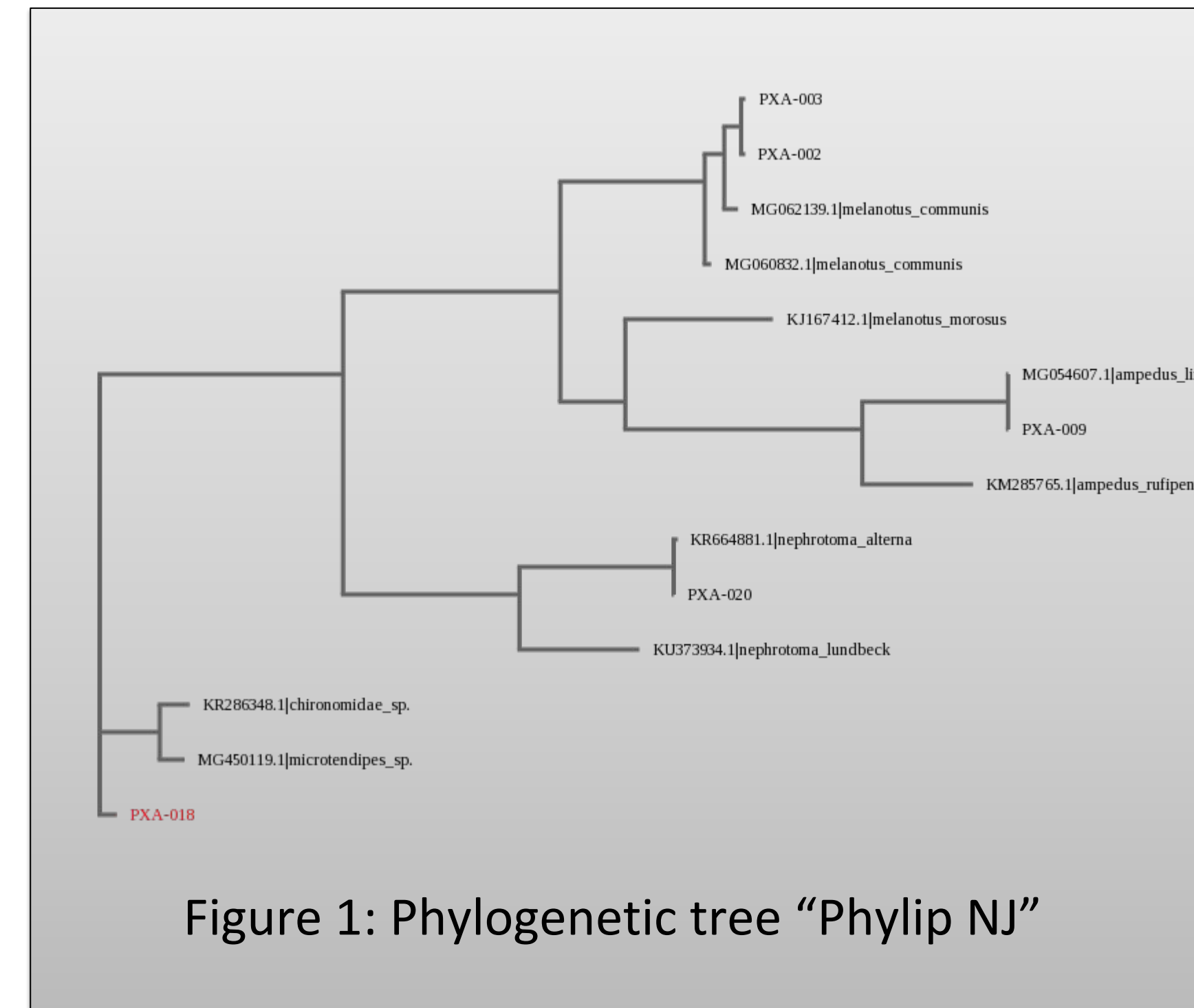


Figure 1: Phylogenetic tree "Phylip NJ"

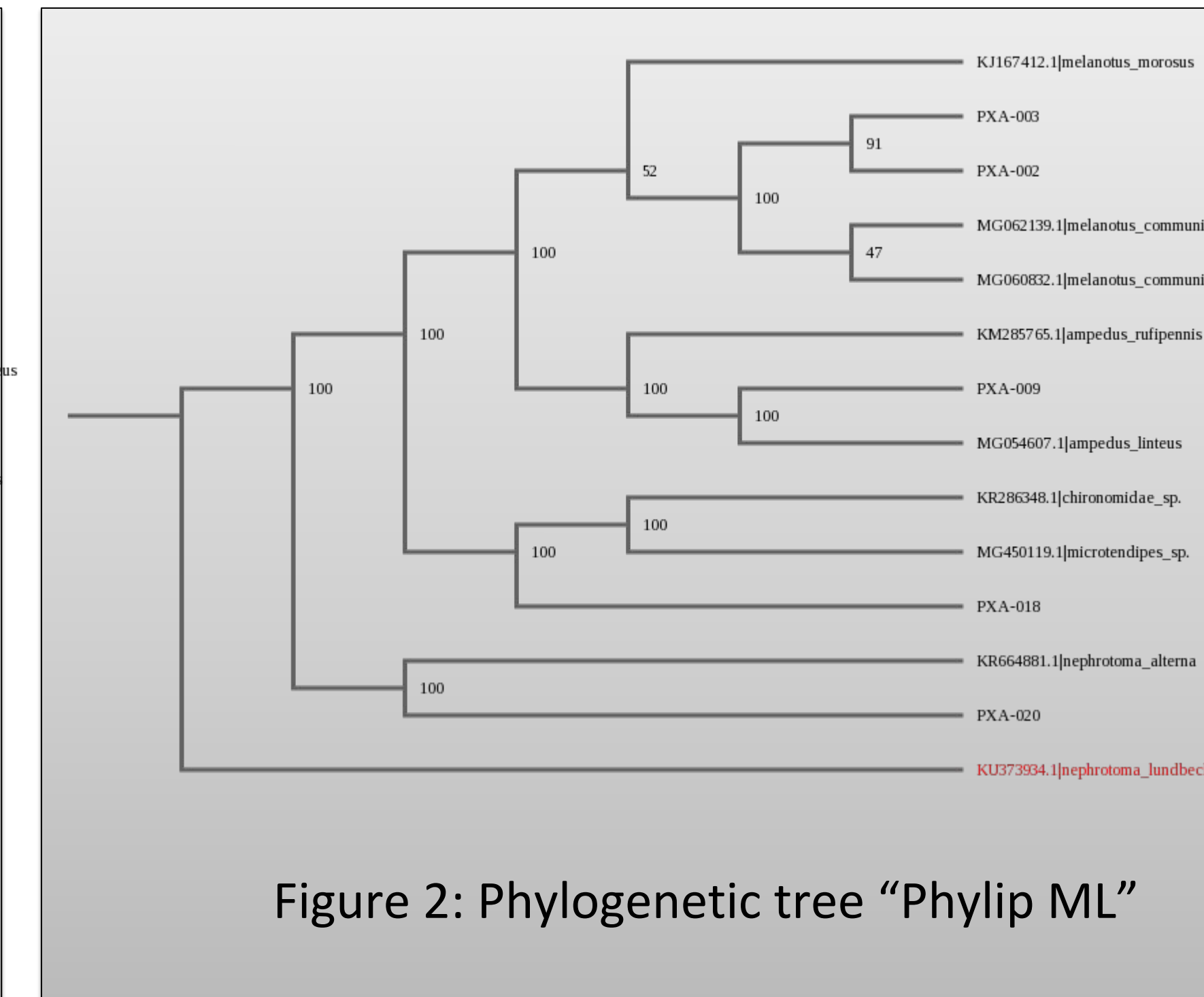


Figure 2: Phylogenetic tree "Phylip ML"

Discussion

Most of our specimens were found in the decaying wood of a tree stump, it is possible that this theory can be applied to other species of beetles.

Acknowledgements

Thank you to our mentor, Renee Macdermott for providing assistance and guidance throughout the project and to Cold Spring Harbor Laboratories



Figure 3: Collection Site



Figure 4: Amplification of DNA

Results

We found *Melanotus communis*live, *Ampedus linteus*, *Microtendipes sp.*, and *Nephrotoma alterna*. As we did not find any White Spotted Pine Sawyers present, we can not support or refute our hypothesis.

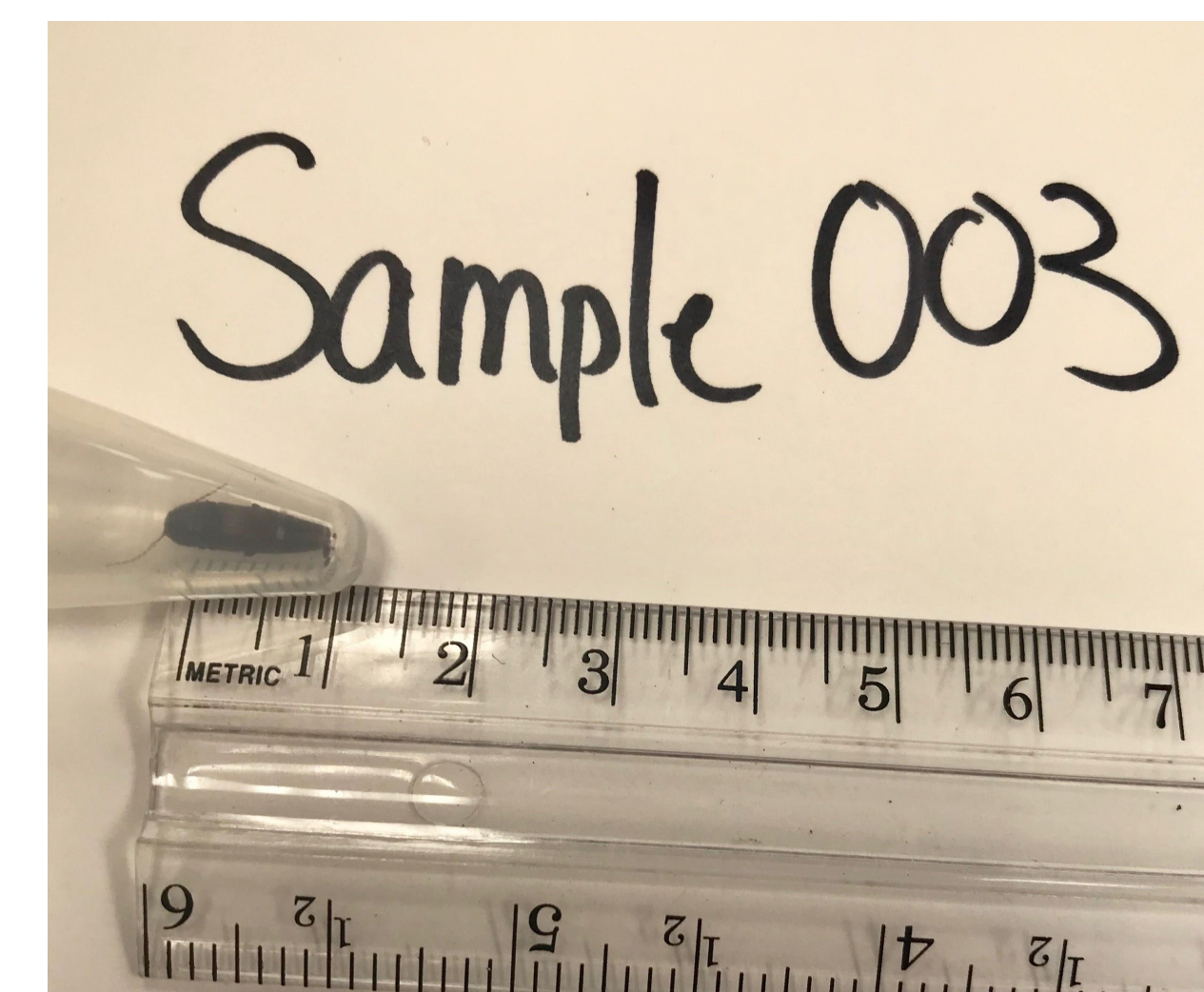


Figure 5: Specimen PXA-002

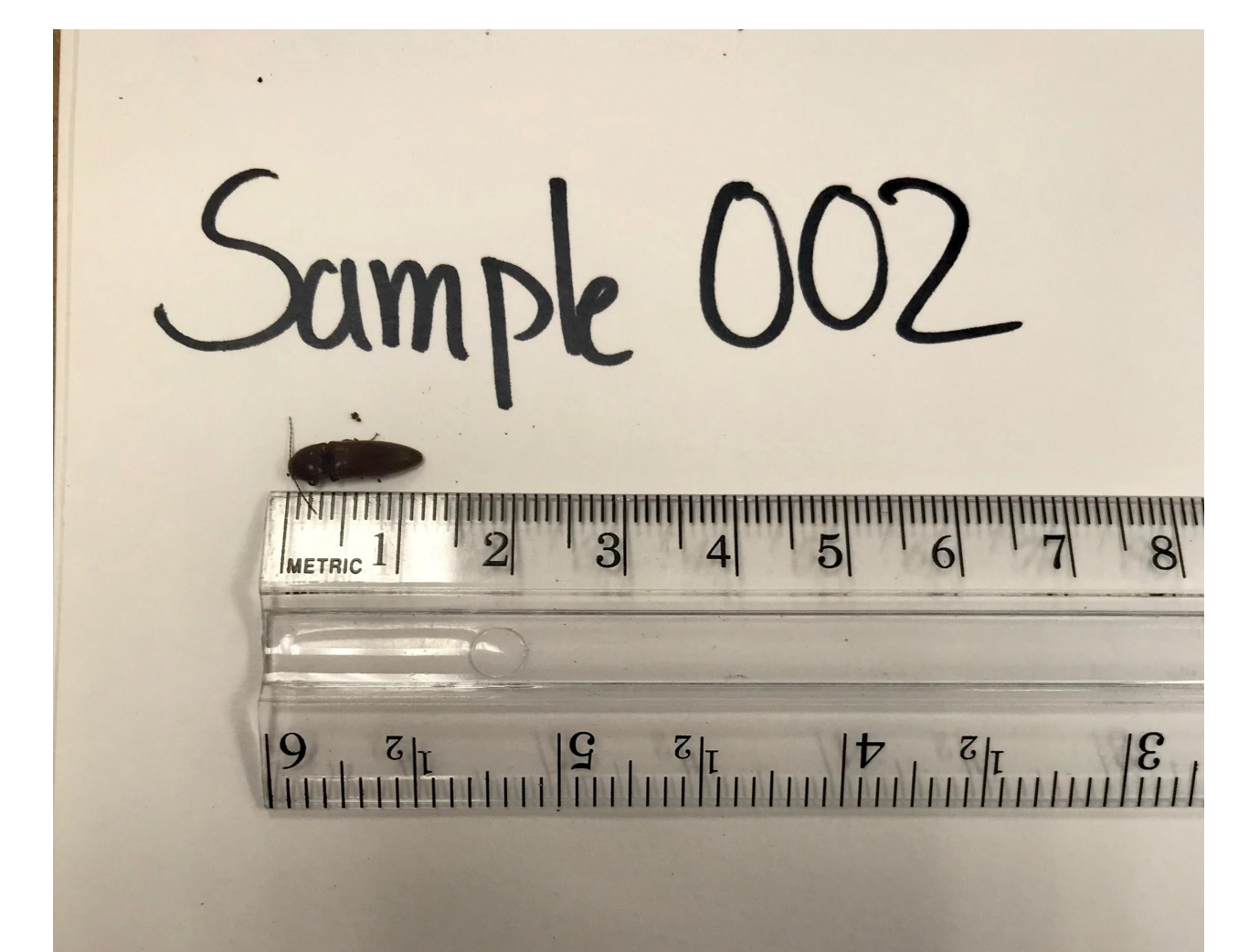


Figure 6: Specimen PXA-003