

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: High speed video recording of slime ejection from the peripatid *Principapillatus hitoyensis*.

File Name: Supplementary Movie 2

Description: Resolubilization of onychophoran slime fibers in distilled water. Fibers were placed in distilled water and observed with a light microscope over a period of ~8 hours.