



Supplemental Figure S1. Maximum likelihood phylogeny built from the 15 gene dataset with 13 protein coding genes coded as amino acids and the two RNA gene partitions encoded as DNA. *X. princealberti* n. sp. a grade with the other members of Velatida and was recovered as sister group to all other Asteroidea. This topology was not significantly different from one where Velatida was enforced to be monophyletic.



Supplemental Figure S2. Micro-CT surface rendering video of the cybertype of *Xyloplax princealberti* n. sp. collected from a natural woodfall at the Alarcón Rise, Gulf of California, Mexico (SMF 6936). The full dataset is at <https://doi.org/10.5281/zenodo.10042987> (accessed on 6 November 2023).