Ecology & Evolution | Nov 20, 2026 | 5 min read | By Bryan White

Two New Marine Tardigrade Species Discovered on Senghor Seamount Off West Africa

Environment * Climate Change * Atmospheric Physics

Two previously unknown species of microscopic marine tardigrades -- commonly known as water bears -- have been formally described from sediment samples collected atop the Senghor Seamount in the Eastern Tropical Atlantic off West Africa. Named Megastygarctides hekatae and Parastygarctus potercha in a 2026 taxonomic monograph published in ZooKeys (Vol. 1295, pp. 333-358) by R. R. Trokhymchuk, J. G. Hansen, U. Pysarenko, K. Subota, and A. Kieneke, both species belong to the marine heterotardigrade family Stygarctidae and inhabit summit-plateau sediments roughly 100 to 130 meters below the ocean surface.

While terrestrial tardigrades are famous for surviving extreme desiccation and radiation in mosses and lichens, marine tardigrades represent an ancient evolutionary radiation adapted to interstitial spaces between submerged sand and carbonate grains. Because isolated oceanic seamounts rise thousands of meters from the abyssal seafloor into sunlit or mesophotic waters, their summit plateaus act as submerged ecological islands -- making them prime hotspots for unrecognized meiofaunal endemism.

Meiofaunal Exploration of the Senghor Seamount Plateau

Located in the Cabo Verde region of the Eastern Tropical Atlantic, Senghor Seamount is an underwater volcanic peak whose flattened summit reaches well into the upper ocean at depths near 100 to 130 meters (including sampling stations around 102.4 meters). Strong tidal currents sweeping over seamount summits winnow fine muds away, leaving behind coarse biogenic carbonate sands rich in pore-water oxygen .

Those interstitial pore networks host diverse meiofauna -- microscopic invertebrates smaller than one millimeter that crawl between sediment grains. Sorting sediment cores from the Senghor Seamount plateau revealed multiple representatives of Heterotardigrada, culminating in the formal morphological description of Megastygarctides hekatae and Parastygarctus potercha .

| Taxonomic / Sampling Attribute | | Verified Senghor Seamount Record | | Ecological Context |

| Newly Described Species | | Megastygarctides hekatae & Parastygarctus potercha | | Class Heterotardigrada, family Stygarctidae |

| Discovery Locality | | Senghor Seamount, Eastern Tropical Atlantic (Cabo Verde region) | | Submerged volcanic peak acting as an oceanic island |

| Sampling Depth | | ~100-130 meters (including ~102.4 m summit plateau) | | Mesophotic benthic carbonate sediment habitat |

| Publication Record | | Trokhymchuk et al. (2026), ZooKeys 1295: 333-358 | | Expands known Atlantic seamount meiofauna |

Anatomy and Taxonomy Within Stygarctidae

Members of the family Stygarctidae are armored marine heterotardigrades characterized by segmented dorsal cuticular plates, sensory cephalic cirri, and specialized claws or toes adapted for gripping shifting sand grains under benthic currents. Unlike freshwater and moss-dwelling eutardigrades, marine stygarctids typically lack cryptobiotic desiccation tolerance because their benthic habitat remains permanently submerged.

Distinguishing closely related species within genera such as Megastygarctides and Parastygarctus requires high-magnification light and scanning microscopy of dorsal plate sculpturing, cephalic sensory appendages, leg spine arrangements, and claw morphology. Describing both M. hekatae and P. potercha from the same seamount plateau demonstrates that multiple stygarctid genera coexist within narrow benthic sediment zones on Eastern Atlantic seamounts.

Seamounts as Stepping Stones for Deep-Sea Meiofauna

How microscopic, non-swimming benthic invertebrates disperse across vast stretches of deep abyssal ocean to colonize isolated seamounts remains an active biogeographical question. Unlike fish or pelagic larvae, interstitial tardigrades spend their entire life cycle crawling within sediment grains, suggesting colonization may occur via rare storm-driven sediment suspension, rafting on drifting debris, or historical low-sea-level stepping stones.

Documenting new marine tardigrade species on Senghor Seamount underscores how little of the global seamount meiofauna has been inventoried -- and highlights why summit ecosystems face growing conservation attention as deep-ocean fisheries and seabed exploration expand across the Atlantic.

References & Primary Sources

* [1] Trokhymchuk, R. R., Hansen, J. G., Pysarenko, U., Subota, K., & Kieneke, A. (2026). Marine tardigrades (Heterotardigrada) from Senghor Seamount, Eastern Tropical Atlantic, with the description of two new species from the taxon Stygarctidae. ZooKeys, 1295, 333-358. -- https://doi.org/10.3897/zookeys.1295.205902

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