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Trace Fossils from the Shawangunk Formation in the Hudson Valley Indicate an Estuarine Depositional Environment

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TRACE FOSSILS FROM THE SHAWANGUNK FORMATION IN THE HUDSON VALLEY INDICATE AN ESTUARINE DEPOSITIONAL ENVIRONMENT

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The Middle Silurian Shawangunk Formation crops out in the lower Hudson Valley and extends toward the southwest into New Jersey and Pennsylvania. It reaches a maximum thickness around Guymard (1,400 ft.; 400m) and gradually thins toward the northeast, pinching out near Binnewater, New York. The formation consists of gray conglomerate, quartz arenite, and minor shale. Worm burrows, *Arthrophycus, Skolithos*, *Planolites*?, and a bilobed resting trace have been found at different stratigraphic horizons in the Shawangunk Formation. All traces are associated with a finer, sandy matrix and/or hematite-rich interval rather than a coarse, pebbly quartz sandstone lithology dominant in the bulk of the unit, indicating a marine influence as well an environment with less energy than the braided stream environment inferred for most of the formation. Rivers and streams moving away from the eastern Taconic Mountains flowed into a westerly situated shallow marine basin. Eurypterids have previously been found on approximately the same stratigraphic levels as the traces and may be useful for constraining the depositional environment of these beds. Silurian eurypterids, now largely considered euryhaline, suggest that the environment of deposition was a marine-influenced estuary based on recent work documenting autochthonous assemblages of similar taxa in marginal marine settings. Association of eurypterids with *Arthrophycus*-dominated ichnofacies has been noted elsewhere in the Lower Silurian Tuscarora Formation in central Pennsylvania, suggesting a recurrent nearshore benthic assemblage.

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Paleonotology, Paleoecology, and Taphonomy (Posters)
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