

Middle Stone Age marine resource exploitation at Ysterfontein 1 rockshelter, South Africa

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Niespolo et al. (1) report $^{230}\text{Th}/^{238}\text{U}$ “burial ages” for ostrich eggshell fragments from a 3.8-m-thick Middle Stone Age (MSA) sequence at Ysterfontein 1 shelter, west coast of South Africa (2). The ages are in expected stratigraphic order and imply that the entire 3.8-m sequence accumulated in as little as 2,300 y around 115,000 y ago. The authors believe they have identified the oldest firmly dated evidence for systematic human exploitation of coastal resources and that the remarkably rapid rate of deposition means that local MSA people were exploiting coastal resources as intensively as their Later Stone Age (LSA) successors after 40,000 y ago. For present purposes, I accept their burial ages and address only their two principal conclusions.

Regarding the antiquity of coastal resource exploitation, the base of the 20-m-thick MSA sequence at Klasies River Main on the south coast of South Africa has long shown that MSA people were systematically exploiting coastal resources early in the Last Interglacial (Marine Isotope Stage 5), by 120,000 y ago. This estimate is grounded in a comprehensive synthesis of stratigraphic, geomorphic, sedimentological, stable isotope, faunal, and artifactual observations, supplemented by a scattering of numeric age determinations (3). It requires more effort to assess than the Ysterfontein 1 Th/U burial result, and it is less precise, but there is no reason to suppose it is less accurate. The Klasies shell, bone, and artifact samples are far larger than those from

Ysterfontein 1, and they allow especially compelling reconstructions of ancient human life on the shore.

Regarding coastal resource exploitation, the rate at which deposits accumulated inside a shelter does not measure exploitation intensity outside. Average shell size in intertidal gastropod species does. Gastropods are sessile, and collectors will naturally take the largest individuals first. If they continue to collect, they will drive down average size. In every gastropod species on the west and south coasts of South Africa for which measurements are available, LSA specimens are significantly smaller on average than their MSA counterparts (4), implying that LSA people were collecting them more vigorously. LSA samples also tend to contain a wider range of intertidal invertebrates, including whelks and crustaceans that more intensive collectors would be less likely to pass by (5). Tortoises, slow-moving creatures that can be collected in the bush broadly like gastropods on intertidal rocks, are also significantly smaller on average in LSA sites (2), and LSA sites are the oldest to contain abundant fish bones (2). The sum implies that LSA people exploited coastal resources more intensively than their MSA predecessors. The rate at which deposits may have accumulated at a site does not inform on this. The deposits at Ysterfontein 1 are mostly aeolian sands whose rate of accumulation depended primarily on wind velocity and direction.

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The author declares no competing interest.

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