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Tubey or not tubey: Death beds of Ediacaran macrofossils or microbially induced sedimentary structures?

Mark A.S. McMenamin*
Department of Geology and Geography, Mount Holyoke College, South Hadley, Massachusetts 01075, USA
*E-mail: mmcmenam@mtholyoke.edu

Nelson and Smith (2019), in addition to providing perhaps the best article title in the history of *Geology*, have mistakenly equated Proterozoic microbial mat-stabilized ripples (their figure 4A) with spectacular late Ediacaran (Nama Assemblage) body fossils, claiming that the latter represent the remains of decomposed biomats or related type of sedimentary structure. Mat-stabilized ripples are well known from Proterozoic (and Proterozoic-analog) strata (McMenamin, 2016), and can superficially resemble frond fossils and other Ediacaran forms. However, the structures shown by Nelson and Smith (their figure 2) are a different phenomenon, namely, *Pteridinium*-like Ediacaran body fossils. The fossils in their figure 2 represent an undescribed genus and species of frondose erniettomorph Ediacaran, consisting of 'air-mattress'–type pneu structures *sensu* Seilacher (1989). Their figure 2E shows roughly equal development of both vanes of the frond, with a *Phyllozoon*-like zig-zag medial suture distinctly visible in the lower left of the image (Fig. 1). The tightly convex frond shown in their figure 2B is comparable to a similar tapho-variant of *Pteridinium* from Namibia. The odd distensions and asymmetries of the cuticle of Nelson and Smith's fossils are also comparable to those commonly seen in *Pteridinium* and other forms (McMenamin, 2018). Thus, the 'problematic structures' of Nelson and Smith are neither tubey nor pseudofossilly, but rather important Nama assemblage Ediacaran fossils that, at the very end of Precambrian time, provide a final glimpse of the range of morphology manifested by the Ediacaran biota.

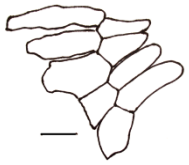

Figure 1. Partial sketch of unnamed Ediacaran frond fossil from the Esmeralda Member of the Deep Spring Formation, southeastern California, USA. Note the zig-zag medial suture. Scale bar = 5 mm.

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