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Hexactinellid sponge *Amphispongia* from Pennsylvanian of United States of America

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Despite Pennsylvanian sponges are usually well-preserved and described from United States of America, those coming from the shales of the Carbondale Formation at the Mecca Quarry have never been described. These shales vary from very dark-black to mottled gray, have excellent cleavage parallel to the bedding and crop out at a distance of 0.8 km southeast of Mecca, Parke County, Indiana¹. Two samples from the Mecca Quarry previously assigned to possible algae have been discovered and housed at the invertebrate fossil collection of the American Museum Of Natural History, New York. The specimens have incomplete tubular shape with two distinct regions between a transition zone poorly preserved, and are mixed with other fossils, such as scolecodonts, fish scales and teeth. The specimens, the height and width of which vary from 85 mm to 88 mm, and from 55 mm to 56 mm, respectively, are formed by spicules of hexactine, diactine and monaxon types, which allow us to assign the specimens to the phylum Porifera (Figure 1). The apical region contains an upper spicule wall composed by hexactines with vertical reduced rays. The oscular margin is not well-delimited. The transition zone contains few reduced hexactines and monaxons. The basal region, even not well-preserved, contains spicules that resembles monaxons, but can appear as tauactines, which is observed in *Amphispongia oblonga*². In spite the fact that the Mecca Quarry Shale samples have poor preservation, it is possible to observe the presence of a very thin upper wall and a gradual increase in spicule size which could indicate inflated spicules styles. Based on this characteristics we consider these specimens as sponges of the genus *Amphispongia*. These finds change the chronological and paleogeographical distribution of the family, which until now were only known from the Upper Telychian, Llandovery of Peatland Hills, Scottish Borders, United Kingdom. We also consider the *Amphispongia* behavior changed from a lagoonal conditions with freshwater influence to a nearshore marine environment with greater terrestrial contribution.

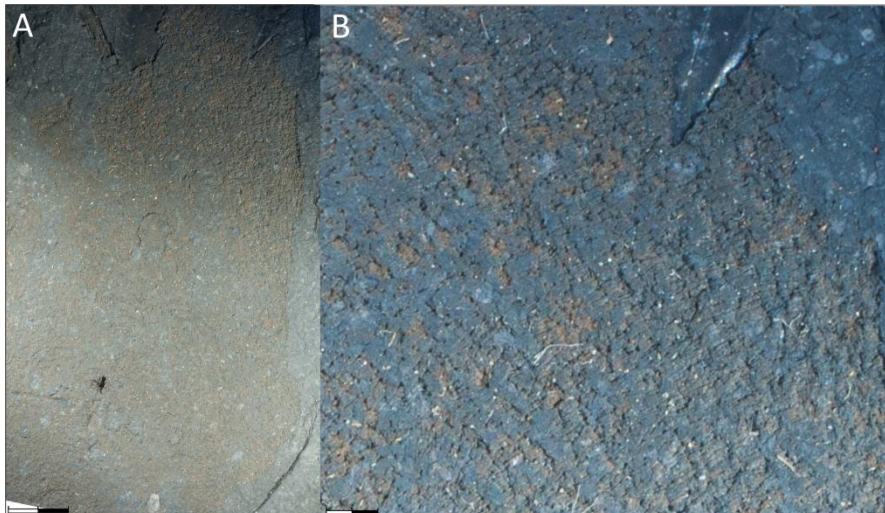


Figure 1: Hexactinellid sponge Amphispongia. (A) Full specimen associated with scolecodont on the top. Scale Bar 5 mm. (B) Detail spicules arrangement. Scale bar 1 mm.

References:

- [1] Wier C. (1952) Bull. Indiana Geol. Survey 6: 34p.
- [2] Botting J. (2004) Scottish Journal of Geology 40(2):115-118.

