

AN HEXACTINELLID AS POSSIBLE PORIFERA DISASTER TAXON

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ABSTRACT: Known since the Cryogenian, sponges are primitive multicellular filter-feeding organisms inhabiting various types of aquatic environments, showing a remarkable variability in form, size and shape due environmental factors such as hydrodynamics, light, and turbidity. Despite being intensively studied since the 19th century and have showed faunal changes during the Phanerozoic, especially in the Carboniferous, Triassic/Jurassic transition and in the late Cretaceous due Earth system succession, until now, the sponges have never been identified with behaviors (bloom taxa, progenitor taxa, Lazarus taxa, Elvis taxa and disaster taxa) related to recovery after crisis cause by extinctions. Then, here we report the *Teganiella* genus, class Hexactinellida, as a possible poriferan disaster taxon. This intriguing behavior is defined as subgroup of opportunists with long evolutionary histories, which during the survival interval, occupy an available ecologic space, being during later phases of the recovery pushed back into marginal locations. The worldwide known disaster taxon is the inarticulate brachiopod *Lingula*, however several benthic invertebrates have been considered potential disaster taxa, but never a Porifera. The genus *Teganiella* described in 1985, is well-delimited global to ovoid sponge with diactines, hexactines, stauractines and small openings preserved. It has been recovered from rocks of Givetian, Serpukhovian and Moscovian from United States of America. The fossils are normally isolated and preserved concordantly to the bed plane, the associated spicules indicate that the sponges were buried within the oxygen-deficient (probably anoxic) microenvironment and can be delimited as autochthonous. Despite the distinct chronologic occurrence, all the species have similar taphonomy morphological characters (body and spicules measures), associate fossils (mainly composed by fishes with absence or fewer benthic species) and paleoenvironment occurrence (shallow marine environment). At first, the characters led us to believe that they may be the same species after all. However, observing the patterns of the species, we have identified that their abundance increase after previously events of mass extinctions (Kačák Event; Late Devonian Mass Extinctions (which comprises the Kellwasser event, Hangenberg event and minor events) and Serpukhovian event). Then, considering the similitude of the morphologic and paleoecology characteristics of the species associated with the definition of behaviors, we can assign the genus *Teganiella* as a disaster taxon.

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KEYWORDS: Sponges; Disaster taxon; Extinctions