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VASE-SHAPED MICROFOSSILS IN CLASTS WITHIN THE JACADIGO GROUP (SW BRAZIL): A NEOPROTEROZOIC PALEONTOLOGICAL PUZZLE

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Among Proterozoic eukaryotic unicellular microfossils, one of the most important groups is that of the "vase-shaped microfossils" (VSMs), characterized by hollow, monoaperturate, ovoidal, discoidal to spheroidal bodies to about 200 micrometers long and interpreted on morphological grounds as tests of arcellinids within the Amoebozoa. They are widespread, with classic occurrences in the USA (Chuar Group), Canada (Calliston Lake Dolostone), Greenland (Eleonore Bay Group), Svalbard (Ryssö Formation), Sweden (Vsingsö Group), and Kazakhstan (Chichkan Formation), all apparently pre-Sturtian (latest Tonian) in age, apparently 587 Ma (Ar/Ar, burial heating), and 889 ± 44 (K-Ar, basement rocks). Although primary rock fabric was largely obliterated by post-depositional alteration (later recrystallization and replacement by dolomite of original cement and continuous recrystallization during burial diagenesis), Urucum VSMs retain original shapes and are unique among all known VSM occurrences because practically all exhibit organic walls, and some appear to be organo-siliceous or (arguably) siliceous, as established by petrographic microscopy and Raman spectroscopy coupled to confocal laser scanning microscopy. Virtually all Urucum tests were coated very early by fibrous and bladed originally aragonite or calcite rim cement, now dolomite, and thereby shielded from degradation in the interior of ooids. Five taxa of VSMs were recently described, three of which new, in these clasts. Comparison with thirteen species recognized in occurrences in the USA, Canada, Greenland, Svalbard, and Sweden revealed that four of the Urucum species also occur in at least one other locality. The potential biostratigraphic use of the Urucum VSMs as well as their putative silica biomineralization are hypotheses currently under investigation. [FAPESP Proc.2013/12852-1 and 2016/05937-9 to LM].

Sessão:
Biotas e ecossistemas do pré-Cambriano

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