D20 FERRUGINOUS AND PHOSPHATIC COATED GRAINS IN EYE-SHAPED ENCLAVES OF FUNGAL STROMATOLITES

Kapila Dahanayake
Earth Sciences Division
Institute of Fundamental Studies, Hantana, Kandy

Nodules of coids and microoncoids were noted to have grown in a comparable manner in ironstones and phosphorites belonging to Jurassic and Eocene ages and characterized by fine-grained groundmasses. Branching networks characteristic of fungi are observed in the groundmass and within the coated grains. The groundmass consists of haphazardly oriented fungal mycelia which have been identified as parts of ancient microbial mats or stromatolites. In the laminated coids and microoncoids, fungal hyphae occur in a manner oriented concentrically to the nuclei of the grains. The hyphae of the mats merge with those of the coated grains

The morphological similarity and merging character of the branching microorganisms evidence in situ growth of mats and coated grains. Comparisons with material from recent environments lead us to believe that iron and phosphorus precipitation as well as the formation of coated grains had taken place within eye-shaped enclaves of microbial mats where the necessary physicochemical and biological conditions were available for microbe-mediated mineral enrichment.

References

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