

2000-Ma Microfossils of Fungus Nature from Paleoproterozoic Deposits Pechenga-Varzuga Belt, NW Russia

AKHMEDOV A. M., BELOVA M. Yu., A. P. Karpinsky All-Russian Research Geological Institute, St. Petersburg, Russia.

Fossilized microorganisms correlable with eumycets have been established in black shales of the “productive” formation of the Pechenga supergroup. The “productive” formation is a lower part of the section of the Pigulyarvi Group; their age dated by different methods using isochrones is about 2 Ga.

Microfossils of fungus nature have been found in carbonaceous gravelites and sandstones, which comprise carbonaceous-phosphate concretions. Forty samples selected from boreholes and quarries along the strike of the “productive” formation were subject to standard macerating treatment.

Several major morphological types of fossilized microorganism remains have been distinguished which can be compared with vegetative and reproductive organs of protistans. The characteristic structure and polymorphism of the microfossils from the Pechenga supergroup suggests that they can be assigned to the eumycetes.

Filiform hypha-shaped forms and morphologically complex irregular bodies are vegetative structures. The reproductive organs are represented by globe-shaped shells with a massive wall and globe-or oval-shaped forms with short processes (one, rarer two), which resemble cysts, chlamydospores and/or sporanges of chytridiomycetes and oomycetes. In some instances the relationship of the globe-shaped forms and hypha-shaped filaments can be observed.

Great thickness of the black shales in the paleoproterozoic Pechenga basin, abundance and diversity of associated microfossils which existed in different paleofacies are evidence for considerable accumulation of algal biocenoses on which the oldest eumycetes evolved.