

## ULTRAMICROSTRUCTURE OF CONTINENTAL PHOSPHATE COPROLITE

1ZANIN, Y.N., 1LUCHININA, V.A, and 2ZHEGALLO, E.A. 1Institute of Petroleum Geology, Siberian Branch of RAS, Novosibirsk, Russia; 2Paleontological Institute of RAS, Moscow, Russia

Organic matter of faeces is a subject of biological destruction and transformation. However, the nature of organisms, which have been involved in these processes in the past is unknown. Ultramicrostructure of coprolites has been studied by many investigators, who described a number of animals or plants there. Nevertheless copropel-loving organisms were not distinguished in coprolites until now. We have studied phosphatized microfossils in coprolites from Upper Eocene continental deposits of the Zaisan Depression, Kazakhstan. Fossilized relics of many animals are known in these deposits, such as mollusks, arthropods, fishes, reptiles, amphibians, mammals, birds, crocodiles and tortoises. As has been shown by G.V. Kulikova and B.A. Borisov (1986), the size of coprolites ranges from 5 to 80 mm lengthwise with diameter from 3 to 35 mm. The coprolites are composed almost entirely by carbonateapatite. Ultramicrostructure of coprolites has been studied by us under the scanning electron microscope. The most representative forms among the coprolites under consideration are tightly adjoining hollow tubes. Their diameters vary from 0.5 up to 3 microns. The walls are very thin. These forms are virtually similar to giphys of the modern fungi, Zygomycetâs, which are heterotrophic forms. Fungi- coprolites developed on faeces are highly specialized group, which occupies like some bacteria the ecological niche inaccessible for another organisms. Organic matter of the faeces contributed to the rapid development and mineralization of copropel-loving which preserved faeces from the mechanical destruction.