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Title: Assessment of Geochemical Characteristics and Geomicrobiology of Cave Spring Water from Jaintia and East Khasi Hills of Meghalaya, India

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Abstract

The present study was undertaken to know the concentration of various trace elements and the condition of water quality parameters in the cave water samples besides studying the role the microbes play in the precipitation of minerals in caves. The results revealed that the concentration of various trace elements such as copper, zinc, nickel and cadmium were low and below the water quality standard limits given by WHO (2006). While that of manganese it was exceptionally high, may be due to erosion of the manganese minerals deposits by the spring cave water. The results also revealed that phosphates are present in very low concentration while sulfates are present in high concentration which again may be due to erosion of secondary sulfate minerals. The co-relation matrices and one tailed analysis of variance of physic-chemical factors have been computed and analyzed. The positive correlation coefficient was observed between pH and alkalinity, hardness and conductivity, sulfates and turbidity. The one tailed ANOVA confirms that site spatial variations have less significant effect on concentration of trace elements. Microbial analysis showed that various types of microbes are present in cave sample which may play an important role in mineral precipitations.

http://web.uni-plovdiv.bg/mollov/EB/2013_vol5_iss1/001-007_eb.12119.pdf