Microbialites from Rincon de Parangueo in the volcanic complex of Central Mexico

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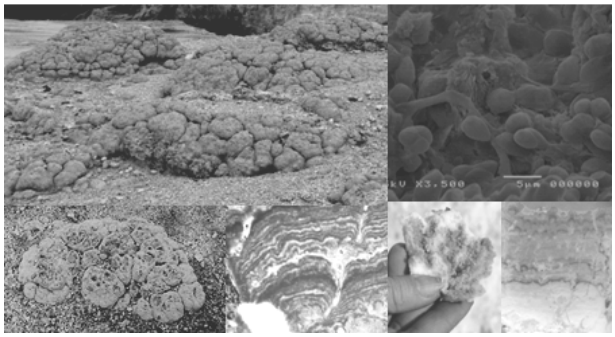
Rincon de Parangueo (RP), a recently dissecated crater lake from the volcanic complex of Central Mexico, represents an extreme environment where microbialites disribute irregularly along the external facies of the former crater lake. A previous short report [1] showed extreme geochemical conditions as a high pH (10) and high salinity in which only special microbial life could inhabit. These stromatolitic mounds pile up in regular groups varying in their individual sizes. They show a fine lamination within the first 2 mm of surface, followed by a coarser texture, exhibiting a typical stromatolitic microfabric in thin section.



Discussion

Preliminary results derived from different analysis under progress suggest both, a biogenic and abiogenic inputs in the construction of these carbonates. The microbialites from RP offer an intriguing example of recent microbialites from fresh-water settings that may help to clarify the role of microorganisms in the construction of ancient and recent microbialites.

[1] Chacon *et al.* (2003) *Origins of Life Proceed.* **32**, 592 pp. Aranda-Gómez *et al*. (2009) *Proceed. IAS 3MC* Conference.

Petrogenesis of the Early Devonian metarhyolites in the Kelang basin at the southern margin of the Altay, Xinjiang: Implications for tectonic evolution

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The Chinese Altay is an important part of the Central Asian Orogenic Belt (CAOB). The Paleozoic tectonic evolution of the Chinese Altay has been controversial. The Early Devonian metarhyolites from the Kangbutiebao Formation in the Kelang basin at the southern margin of the Chinese Altay are wonderful examples to constrain its geological evolution history.

Geochemical data of these metarhyolites show that they have high SiO_2 (72.46% to 80.07%) and total alkali (Na_20+K_20) (6.38% to 11.34%) content, and low Al_2O_3 (9.68% to 12.19%), TiO_2 (0.17% to 0.35%), MgO (0.08% to 0.48%), CaO (0.14% to 0.73%)and TFeO (0.34% to 0.55%) content, which defines as calc-alkaline volcanic rock series. They are characterized by enrichment in light rare earth elements (LREEs) and high strenth elements (HFSEs, e.g., Th, U, Pb, Zr and Hf), depletion in large ion lithophile elements (LILES, e.g., Sr and Ba) and HFSEs (e.g., Nb, Ta, Ti, P) relative to primitive mantle. In addition, they have noticeable negative Eu anomalies (δEu=0.5-0.71) and high Yb content relative to Chondrite. These geochemical characteristics indicate that the rhyolites were derived from the partial melting of the lower crust, and the residual minerals were plagioclase, amphibole and apatite. The primitive magma was likely resulted from the underplating, and underwent fractional crystallization and minor wall-rocks assimilation during the ascending of magma. These rhyolites formed in an active continental margin environment during the Early Devonian at the southern margin of the Altay.

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